

Mackerel Icefish (2020)

Champsocephalus gunnari



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth	Heard Island and McDonald Islands	Sustainable	Spawning stock 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 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 2019 for the HIMIF used an abundance index from a random stratified trawl survey [Nowara et al. 2019]. 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 estimated the 2019 biomass of Mackerel

Icefish to be 5 539 tonnes (t) [Maschette et al. 2019]. Using the CCAMLR harvest strategy decision rules, the recommended TAC for the 2019–20 fishing season was calculated to be 527 t, which was estimated to ensure the maintenance of a spawning stock biomass of at least 75 per cent of unfished biomass over the two-year projection period [Maschette et al. 2019]. This TAC was endorsed by CCAMLR after review [CCAMLR 2019a, CCAMLR 2019b]. The above evidence indicates that the biomass of the stock is unlikely to be depleted and recruitment is unlikely to be impaired [Patterson and Steven 2020]. The current level of fishing mortality is unlikely to cause the stock to become recruitment impaired [Patterson and Steven 2020].

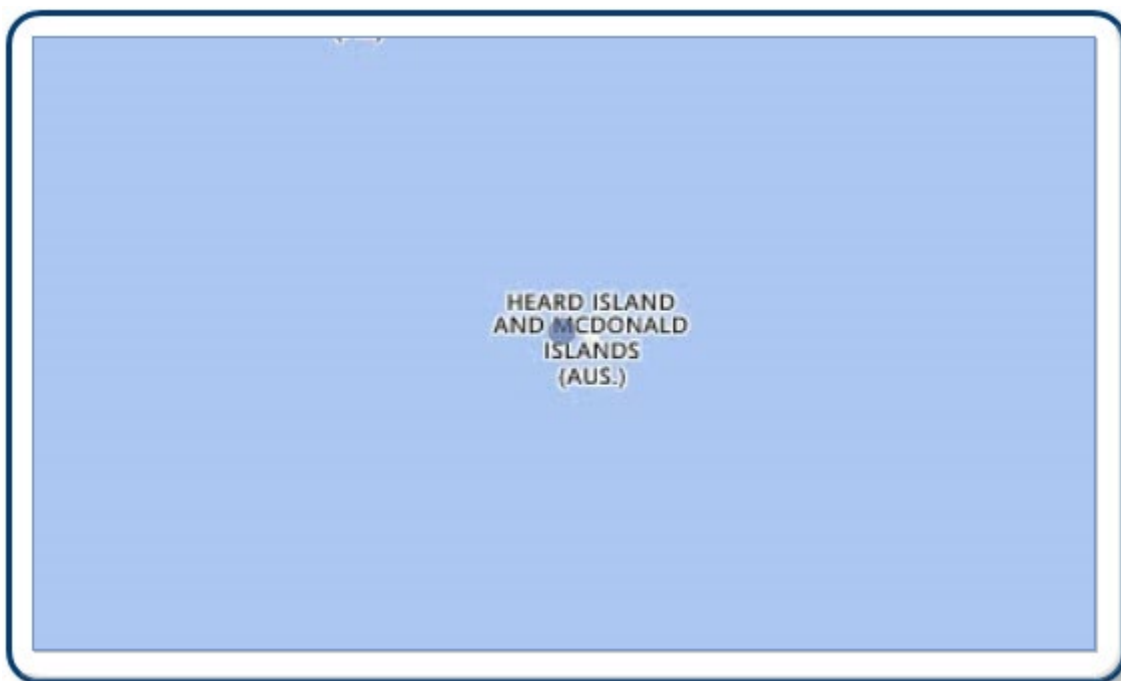
On the basis of the evidence provided above, the Heard Island and McDonald Islands biological stock is classified as a **sustainable stock**.

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

Fishing methods	Commonwealth
Commercial	
Otter Trawl	✓

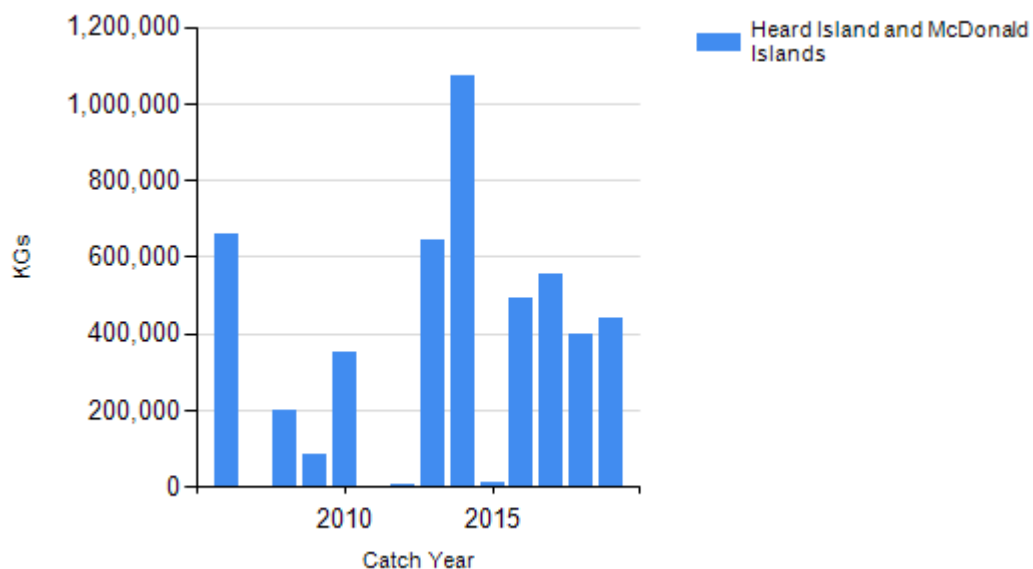
Management Methods	
	Commonwealth
Commercial	
Area restrictions	✓
Catch limits	✓
Individual transferable quota	✓

Catch	
	Commonwealth
Commercial	443 t

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



Commercial catch of Mackerel Icefish.

References	
Williams et al. 1994	Williams, R, Smolenski, AJ and White, RWG 1994, Mitochondrial DNA variation of Champsocephalus gunnari Lonnberg (Pisces: Channichthyidae) stocks on the Kerguelen Plateau, southern Indian Ocean, Antarctic Science, 6: 347–352.
Williams et al. 2001	Williams, R, van Wijk, E, Constable, A and Lamb, T 2001, The fishery for Champsocephalus gunnari and its biology at Heard Island (Division 58.5.2), WAMI-01/04, CCAMLR Workshop on Assessment Methods for Icefish, Hobart.
Nowara et al. 2019	Nowara, GB, Lamb, TD and Ziegler, P 2019, Estimates of abundance of Dissostichus eleginoides and Champsocephalus gunnari from the random stratified trawl survey in waters surrounding Heard Island in Division 58.5.2 for 2019, WG-FSA-19/03, CCAMLR Working Group on Fish Stock Assessment, Hobart, 7–18 October 2019.
Maschette et al. 2019	Maschette, D, Nowara, G and Welsford, DC 2019, A preliminary assessment for mackerel icefish (Champsocephalus gunnari) in Division 58.5.2, based on results from the 2019 random stratified trawl survey, WG- FSA-19/02, CCAMLR Working Group on Fish Stock Assessment, Hobart, 7–18 October 2019.
CCAMLR 2019a	Commission for the Conservation of Antarctic Marine Living Resources 2019a, Report of the Working Group on Fish Stock Assessment, WG-FSA-19, CCAMLR Working Group on Fish Stock Assessment, Hobart, 7–18 October 2019.
CCAMLR 2019b	Commission for the Conservation of Antarctic Marine Living Resources 2019b, Report of the thirty-eighth meeting of the Scientific Committee, SC-CAMLR-XXXVII, CCAMLR Scientific Committee, Hobart, 21–25 October 2019.
Patterson and Steven 2020	Patterson, H and Steven, AH 2020, Heard Island and McDonald Islands Fishery, in H Patterson, J Larcombe, J Woodhams and R Curtotti (eds), Fishery status reports 2020, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, xxx-xxx.