

Patagonian Toothfish (2018)

Dissostichus eleginoides



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STOCK STATUS OVERVIEW

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

HIMIF Heard Island and McDonald Island Fishery (CTH), MITF Macquarie Island Toothfish Fishery (CTH)

STOCK STRUCTURE

Genetic studies have found that Patagonian Toothfish at Macquarie Island, and at Heard Island and the McDonald Islands, are two distinct biological stocks [Appleyard et al. 2002]. However, there is some level of exchange between the Heard Island and McDonald Islands stock and the Kerguelen Plateau stock [Welsford et al. 2012].

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

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 inter-governmental 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 Patagonian Toothfish, the CCAMLR harvest strategy reference points require that the median escapement of the spawning biomass at the end of a 35 year projection period be 50 per cent of median pre-exploitation level and that the probability of the spawning biomass dropping below 20 per cent of the pre-exploitation median level is less than 10 per cent. Although the HIMIF falls within the CCAMLR area, the HIMIF is an Australian territory and is fished by Australian vessels only.

The most recent assessment of HIMIF Patagonian Toothfish estimates that biomass in 2017 was 61 per cent of pre-exploitation levels [Ziegler 2017]. The

management unit is not considered to be recruitment overfished [CCAMLR 2017a, Patterson and Mazur 2018a]. A catch limit of 3 525 tonnes (t), which meets the CCAMLR harvest strategy requirements, was recommended by CCAMLR for the 2017–18 and 2018–19 fishing seasons [CCAMLR 2017a, CCAMLR 2017b]. It is estimated that the projected biomass will not fall below 50 per cent of the pre-exploitation level after a 35 year projection period under that catch limit. This level of fishing mortality is unlikely to cause the stock to become recruitment overfished [Ziegler 2017, Patterson and Mazur 2018a].

Based on the evidence provided above, the Heard Island and McDonald Islands management unit is classified as a **sustainable stock**.

Macquarie Island

Macquarie Island is an Australian territory that lies adjacent to, but not within, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) area. Although not under CCAMLR jurisdiction, for consistency the Macquarie Island Toothfish Fishery (Commonwealth) is managed using the CCAMLR harvest strategy with the same decision rules used in the Heard Island and McDonald Islands Fishery (Commonwealth).

The most recent assessment [Day and Hillary 2017] of Macquarie Island Patagonian Toothfish estimates that biomass at the start of 2017 was 69 per cent of pre-exploitation levels. The biological stock is not considered to be recruitment overfished [Patterson and Mazur 2018b]. The CCAMLR decision rules were used to calculate the catch limit of 450 t for the 2017–18 and 2018–19 fishing seasons. This ensures that the projected biomass is not below 50 per cent after a 35-year projection period under that catch limit. This level of fishing mortality is unlikely to cause the stock to become recruitment overfished [Day and Hillary 2017, Patterson and Mazur 2018b].

Based on the evidence provided above, the Macquarie Island biological stock is classified as a **sustainable stock**.

BIOLOGY

Patagonian Toothfish biology [Collins et al. 2012, Welsford et al 2012,]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Patagonian Toothfish	~50 years, ~2 000 mm TL	11–15 years (males), 12–17 years (females) ~915 mm TL (males), 1000+ mm TL (females)

DISTRIBUTION



Distribution of reported commercial catch of Patagonian Toothfish

TABLES

Commercial Catch Methods	Commonwealth
Demersal Longline	✓

Fishing methods	
	Commonwealth
Commercial	
Demersal Longline	✓

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

Active Vessels

Catch	
	Commonwealth

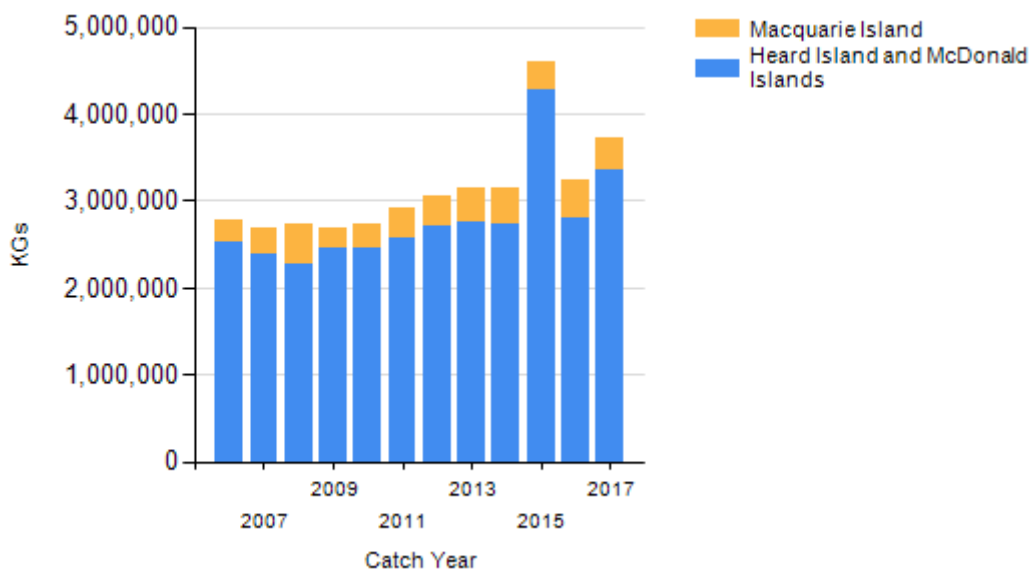
Commercial	3357t in HIMIF, 358t in MITF,
Indigenous	None
Recreational	None

HIMIF Heard Island and McDonald Island Fishery (CTH), MITF Macquarie Island Toothfish Fishery (CTH),

Commonwealth – Recreational There is no recreational fishing for Patagonian Toothfish. 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 – Commercial (catch)** The most recent data available for the Heard Island and McDonalds Islands Fishery (HIMIF) is for the 2016–17 fishing season. The most recent data available for the Macquarie Island Toothfish Fishery (MITF) is for the 2017–18 fishing season. **Commonwealth – Indigenous** There is no Indigenous fishing for Patagonian Toothfish.

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 Patagonian Toothfish - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on Patagonian Toothfish

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