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***Assessment of fish stocks at Heard Island and McDonald Islands on the Kerguelen Plateau***

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Fish stocks on the Kerguelen Plateau at Heard Island and McDonald Islands are assessed with a range of assessment approaches. Patagonian toothfish (*Dissostichus eleginoides*), a commercially-exploited benthopelagic notothenioid species which can exceed 100 kg in weight and live for over 50 years, has a broad distribution in depths ranging from 10 m to 2500 m on many sub-Antarctic plateaus and seamounts in the Southern Ocean. At Heard Island and McDonald Islands, the stocks of Patagonian toothfish are assessed with a population dynamics model implemented in CASAL which integrates data on catch removals, catch composition, an annual random stratified trawl survey and tag-recapture data as index of abundance. In the 2017 assessment, the unfished spawning stock biomass  $B_0$  was estimated to be around 78 000 tonnes, with an estimated stock status in 2017 of 61%. Over recent years, the fishery has undergone a spatial expansion of fishing effort which has posed a major challenge to the assessment. In addition, the fishery experienced low catch rates in 2016 which may have been driven by environmental changes.

The Generalised Yield Model (GYM) is used to determine abundance and sustainable catch limits of mackerel icefish (*Champsocephalus gunnari*), the second targeted fish species at Heard Island and McDonald Islands. The GYM has also been used to estimate abundance and sustainable bycatch limits for unicorn icefish (*Channichthys rhinoceratus*) and a number of grenadier species (*Macrourus* spp.), while time series analysis has been used to evaluate changes in the abundance of skates (*Bathyraja* spp.).