

Common Jack Mackerel (2020)

Trachurus declivis



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth, New South Wales, Tasmania	Eastern	Sustainable	Catch, effort, spawning biomass, exploitation rate
Commonwealth, Tasmania, South Australia	Western	Sustainable	Catch, effort, spawning biomass, exploitation rate

STOCK STRUCTURE

A study conducted to provide a basis for establishing management zones in the Commonwealth Small Pelagic Fishery (SPF) concluded that there was evidence for at least two biological stocks of Common Jack Mackerel in Australian waters: one off eastern Australia and the other extending from western Tasmania to southern Western Australia [Bulman et al. 2008]. Evidence supporting these conclusions included morphological, meristic and genetic differences between fish from these two areas [Lindholm and Maxwell 1988, Richardson 1982] and a lack of genetic difference between fish from eastern Tasmania and New South Wales [Smolenski et al. 1994]. There is some evidence that more than one stock may occur off eastern Australia, however further studies are required to address this issue [Richardson 1982, Smolenski et al. 1994]. Recent studies also demonstrate that spawning occurs off both the east and west coasts of Tasmania and in Bass Strait during summer, suggesting that Bass Strait may not effectively separate the eastern and western stocks [Ward et al 2016, 2018]. Currently in the SPF, Common Jack Mackerel and other target species are managed as separate Eastern and Western biological stocks [AFMA 2009].

Here, assessment of stock status is presented at the biological stock level—Western and Eastern.

STOCK STATUS

Eastern The most recent assessment of the Eastern stock of Common Jack Mackerel was completed in 2020 using fishery data for 2019–20 [Ward and Grammer 2018, 2021] and an application of the Daily Egg Production Method (DEPM)

undertaken in 2019 [Ward et al. 2020]. Population modelling has also been undertaken to assess the status of the stock [Punt et al. 2016]. The primary stock status indicators are spawning biomass and exploitation rate.

The spawning biomass of Eastern Common Jack Mackerel during 2019 was estimated to be 156 292 t (95 per cent confidence interval 49 120–263 496 t) using the DEPM [Ward et al. 2020]. This estimate is considered robust because it was based on reliable estimates of critical DEPM parameters such as egg production, spawning area and spawning fraction. It is also similar to the estimate of spawning biomass off eastern Australia obtained in 2014 of 157 805 [Ward et al. 2016].

Total annual catches of Common Jack Mackerel off eastern Australia did not exceed 3 000 t between 2003–04 and 2014–15 [Ward and Grammer 2018].

The total annual catch reached 6 849 t in 2015–16 when a mid-water trawler with onboard freezer facilities operated in the SPF, but decreased to 2 849 t in 2016–17 when the vessel left. In 2017–18 and 2018–19, the catch was between 4 000 and 4 500 tonnes and reached 7 852 t in 2019–20 (Ward and Grammer 2021). Recent catches have been less than 6 per cent of the estimated spawning biomass [Ward et al. 2016], and less than half the sustainable exploitation rate of 12 per cent proposed as a target for this species [Smith et al. 2015].

The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, the above evidence indicates that 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 Eastern biological stock of Common Jack Mackerel is classified as a **sustainable stock**.

Western

The most recent assessment of the Western stock of Common Jack Mackerel was completed in 2020 using fishery data for 2019–20 [Ward and Grammer 2021] and an application of the Daily Egg Production Method (DEPM) undertaken in 2016–17 [Ward et al. 2018]. The primary biological performance indicators are spawning biomass and exploitation rate.

The spawning biomass of Common Jack Mackerel West during 2016–17 was estimated to be at least 30 000 tonnes (t) using the DEPM [Ward et al. 2018]. Historically, total annual catches of Common Jack Mackerel West have been very low [< 100 t per annum]. Catches of between 600 t and 700 t per annum were taken in from this stock in 2015–16 and 2016–17 (Ward and Grammer 2018). No catch was taken in the West sub-area of the SPF in 2017–18 or 2018–19, with only small catches taken by other Commonwealth fisheries (AFMA 2019).

Low catches of Common Jack Mackerel from the Western stock reflect low fishing effort, rather than low abundance. Recent catches have been less than 3 per cent of the estimated minimum spawning biomass, and less than a quarter of the sustainable exploitation rate of 12 per cent proposed as a target for this species [Smith et al. 2015].

The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Furthermore, the above evidence indicates that 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 Western biological stock of Common Jack Mackerel is classified as a **sustainable stock**.

BIOLOGY

Common Jack Mackerel biology [Lyle et al. 2000, Marshall et al. 1993, Webb 1976; Ward and Grammer 2018]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Common Jack Mackerel	17 years, 470 mm FL	5–6 years, 315 mm FL

DISTRIBUTION



Distribution of reported commercial catch of Common Jack Mackerel

TABLES

Fishing methods	Commonwealth	New South Wales	South Australia	Tasmania
Commercial				
Danish Seine	✓			
Midwater Trawl	✓			
Otter Trawl	✓			
Unspecified			✓	✓
Various		✓		
Recreational				
Gillnet				✓
Handline		✓		✓

Management Methods	Commonwealth	New South Wales	Tasmania

Commercial			
Bag limits			✓
Catch limits	✓		✓
Limited entry	✓	✓	✓
Mesh size regulations		✓	✓
Spatial closures		✓	✓
Vessel restrictions	✓	✓	✓
Recreational			
Bag limits		✓	✓
Spatial closures		✓	✓

Catch				
	Commonwealth	New South Wales	South Australia	Tasmania
Commercial	4254.16 t	4.601 t	0 t	0.168 t
Indigenous		Unknown		Unknown
Recreational		Unknown		5.2 t (2012–13)

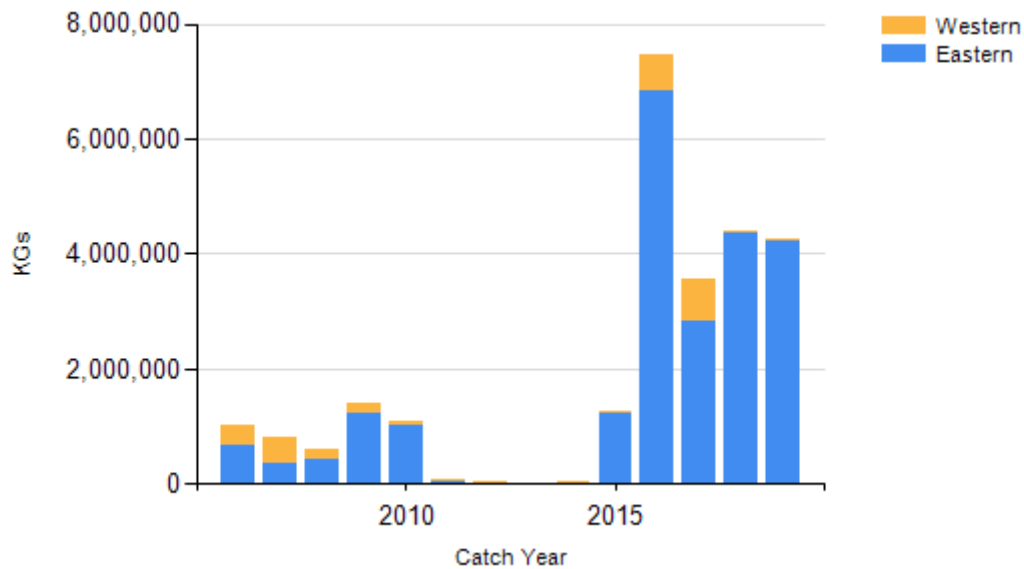
Commonwealth – Commercial (management methods) Historically, no restrictions on vessel hold capacity have been in place in the Small Pelagic Fishery (Commonwealth). However, in 2012, an interim declaration was made to prevent factory trawlers greater than 130 m in length with on-board fish processing facilities, and storage capacity for fish or fish products in excess of 2 000 t, from entering this fishery for a two year period.

Commonwealth – Recreational 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 data is presented for 2017.

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.

New South Wales – Indigenous (management methods)
<https://www.dpi.nsw.gov.au/fishing/aboriginal-fishing>

CATCH CHART



Commercial catch of Common Jack Mackerel - note confidential catch not shown.

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STATUS OF AUSTRALIAN FISH STOCKS REPORT
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