

Jackass Morwong (2023)

Nemadactylus macropterus



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth, New South Wales, Victoria, Tasmania	Eastern	Depleted	Spawning stock biomass, fishing mortality
Commonwealth, Victoria, Tasmania, South Australia	Western	Sustainable	Spawning stock biomass, fishing mortality

STOCK STRUCTURE

Jackass Morwong (*Nemadactylus macropterus*) is distributed around southern Australia including Tasmania [Jordan 2001]. Genetic studies have found no evidence of separate stocks, although otolith microstructure analyses have shown some differences between fish in southern Tasmania, New South Wales, and Victoria [Elliott and Ward 1994; Morison et al. 2011; Thresher et al. 1994]. A recent review of stock structure found limited evidence support the existence of separate stocks east and west of Tasmania [Bessell-Browne et al. 2020]. To maintain consistency with the approach taken for SAFS 2018 and 2020 in which the species was considered to comprise two biological stocks (Eastern and Western), and with the current stock assessment and management approach within the SESSF, the species is assessed here as two management units (Eastern and Western).

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

STOCK STATUS

Eastern

Eastern Jackass Morwong is primarily caught by the Commonwealth managed Southern and Eastern Scalefish and Shark Fishery (SESSF), with small catches from State jurisdictions. Stock status classification reported here is based on stock assessments conducted for the SESSF, which include reported State catches.

In the Commonwealth, catches of Jackass Morwong (Eastern and Western) peaked at more than 2,500 t in the mid-1960s and have declined since the 1980s.

In New South Wales, the commercial catch is principally taken in the Ocean Trap and Line Fishery, with smaller quantities taken by other fisheries. Annual commercial catch from New South Wales waters has been between 3.4 t and 10.3 t during the last 10 years. These commercial catches represent between 1.8% and 7.4% of the total cross-jurisdictional catch annually and therefore represent a minor component of the fishing mortality for the stock.

For Victoria, annual commercial Jackass Morwong catch from has been less than 1 t for over 25 years, being zero in many years. Although recreational catch has occurred it is believed to be small compared to other sources of fishing mortality and is unlikely to influence the biomass of the stock.

In Tasmania, Jackass Morwong (predominantly the Eastern stock) are taken in the multi-gear, multi-species Tasmanian Scalefish Fishery (TSF). Maximum records of commercial TSF catches occurred in the late 1990s, peaking at 33.2 t in 1997–98 [Sharples et al. 2023]. Total catches from Tasmanian waters, including Commonwealth reports, peaked at 126.8 t in the same year. Since 2011–12, catches have been below 5 t, with a total catch of 3.4 t recorded in 2021–22 [Sharples et al. 2023]. Commercial catch rates in Tasmanian waters relative to 1995–96 have remained fairly stable since 2007–08, but at a reduced level (approximately 40%) [Sharples et al. 2023]. Jackass Morwong is a popular recreational target species, and recreational catches in Tasmanian waters are generally notably higher than those of the commercial sector. Peak catches estimated for the recreational sector have historically exceeded 30 t (31.9 t in 2000–01) with more recent (2017–18) records of 8.4 t [Lyle et al. 2019; Sharples et al. 2023].

Eastern Jackass Morwong in the SESSF is managed as a Tier 1 stock under the SESSF Harvest Strategy Framework [AFMA 2021a]. While the 2018 Tier 1 stock assessment [Day and Castillo-Jordán 2018a] informed the management of the stock for the 2021–22 fishing season, a new assessment was undertaken in 2021 [Day et al. 2021].

The 2018 Tier 1 stock assessment [Day and Castillo-Jordán 2018a] estimated the spawning stock biomass at the start of 2018 to be 30% of the unfished level. This led to a 3-year average recommended biological catch (RBC) of 270 t.

The 2021 Tier 1 stock assessment [Day et al. 2021] estimated spawning stock biomass in 2020 to be 14% of the unfished level and projected spawning stock biomass to be 15% of the unfished level in 2022 (assuming that catches in 2021 were the same as in 2020). The model estimated the stock to be below the limit reference point (LRP) and produced an RBC of 0 t. The model identified a steady decline in productivity since 1990 and that fishing mortality was above the target reference point (TRP) for 27 of the past 30 years and at historically high levels in the period 1997 to 2012 [Day et al. 2021]. It was noted that recent CPUE (2018 to 2020) was low and that newly estimated recruitment deviations (2013 to

2015) were all below average. Further, historical recruitment estimates (2007 to 2012) were revised downwards with the inclusion of new data in the model. Because of this, a decision was taken to assume low recruitment after 2015 (rather than average recruitment) in the production of constant catch projections. The stock is considered to be recruitment impaired.

It was noted that under a 0 t constant-catch scenario, and assuming low recruitment, the stock would be expected to reach the LRP by 2025 but never reach the TRP for the entire forecast period (to 2060). Under 50 t and 100 t constant-catch scenarios, the stock would be expected to reach the LRP by 2028 and 2049, respectively, but would continue to decline under a 150 t constant-catch scenario [Day et al. 2021].

On the basis of the evidence provided above, the Eastern management unit is depleted, and recruitment is likely to have been impaired.

Commonwealth catch for Eastern Jackass Morwong in the Commonwealth Trawl and Gillnet, Hook and Trap sectors (CTS and GHTS) of the SESSF was 79.3 t in the 2021–22 fishing season based on the percentage split east/west from logbook data [Emery et al. 2022]. The model-based discard estimate for the eastern stock in 2020 was 5.6 t [Day et al. 2021] and the 4-year weighted average of recent (2017 to 2020) state catches was 8.3 t [Althaus et al. 2021]. When combined, the total fishing mortality for Eastern Jackass Morwong was 93.2 t for the 2021–22 fishing season.

The Commonwealth Harvest Strategy Policy (HSP) requires rebuilding time frames to be set relative to the minimum time frame for rebuilding in the absence of Commonwealth commercial fishing (TMIN), if information is available to do so. The guidelines for the HSP also state that 'typically, time frames should be defined within the range of TMIN and $2 \times$ TMIN, and that 'longer time frames may be justifiable after assessing the trade-off between costs and benefits of alternative recovery trajectories'. Constant-catch projections undertaken in association with the 2021 stock assessment estimated TMIN to be around 4 years, and, as such $2 \times$ TMIN would be around 8 years. Model projections indicated that it would take around 6 years to reach the LRP under a total mortality of 50 t and around 27 years to reach the LRP with a total mortality of 100 t. Therefore, it seems unlikely that total mortality in 2021–22 (93.2 t) would allow rebuilding to the LRP within 8 years.

AFMA set the 2021–22 TAC in accordance with the RBC provided by the 2018 assessment (i.e., 270 t) [Day and Castillo-Jordán 2018a], which has since been shown to not reflect the current state of the stock. Based on the 2021 Tier 1 stock assessment [Day et al. 2021], AFMA has taken actions to reduce the TAC and to implement a network of closures to ensure that trawling does not occur in areas of higher abundance of at-risk species [AFMA 2022a, b].

On the basis of the evidence provided above, the Eastern management unit is classified as a **depleted stock**.

Western

Western Jackass Morwong is primarily caught by the Commonwealth-managed Southern and Eastern Scalefish and Shark Fishery (SESSF), with negligible catches from State jurisdictions. Stock status classification reported here is based on stock assessment conducted for the SESSF, which include reported State catches.

As stated above, Commonwealth catches of Jackass Morwong (Eastern and

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Western) peaked at more than 2 500 t in the mid-1960s and have declined since the 1980s.

In Tasmanian waters, commercial catches of the Western stock account for a small share of total commercial catches, averaging 0.4 t per year over the recorded history of the fishery. The maximum recorded catch was 1.3 t in 1995–96. With the exception of 2012–13 and 2018–19 landings, annual catches of the Western stock have been below 100 kg for the last decade.

There have been no commercial catches of Jackass Morwong reported by South Australia's commercial fisheries since at least 1984. Small quantities (less than 5 t per annum) of undifferentiated 'Morwong' species have been taken by the commercial Marine Scalefish Fishery in the past 20 years. There is no information available on the catch of Jackass Morwong by Aboriginal and Torres Strait Islander people in South Australian waters. The most recent recreational fishing survey in South Australia in 2021–22 indicated that the annual catch of Jackass Morwong was zero [Beckmann et al. 2023].

For Victoria, commercial Jackass Morwong catch from has been less than 1 t for over 25 years, being zero in many years. Although recreational catch has occurred it is believed to be small compared to other sources of fishing mortality and is unlikely to influence the biomass of the stock.

Western Jackass Morwong in Commonwealth fisheries is managed as a Tier 1 stock under the SESSF Harvest Strategy Framework [AFMA 2021a]. The 2018 Tier 1 stock assessment [Day and Castillo-Jordán 2018b] informed the management of the stock for the 2021–22 fishing season.

The 2018 Tier 1 stock assessment [Day and Castillo-Jordán 2018b] estimated the spawning stock biomass at the start of 2018 to be 66% of the unfished level. This led to a 3-year average RBC of 223 t. It is important to note that this assessment was uncertain because only sporadic age data were available, length compositions were based on very low numbers of sampled fish, and the quality of the CPUE data was questionable [Day and Castillo-Jordán 2018b].

Since 2018, catches have declined to the point that there were concerns about the adequacy of the CPUE series as a reliable index of abundance, meaning the assessment was not updated (along with the Eastern management unit) in 2021 [AFMA 2021b]. Consequently, an RBC was determined using a weight-of-evidence approach for the 2021–22 fishing season. In a review of all available indicators and noting the very low levels of catch in recent years (for example, 29 t in 2019 and 11 t in 2020 calendar years), the South-East Resource Assessment Group (SERAG) found that there was no reason to deviate from their previous management advice and recommended maintaining the previous RBC [AFMA 2021b].

Commonwealth logbook-reported catch for Western Jackass Morwong in the CTS and GHAT sectors of the SESSF was 18.6 t in the 2021–22 fishing season based on the percentage split east/west from logbook data [Emery et al. 2022]. The 4-year weighted average of recent (2017 to 2020) discards was 19.8 t and state catch was 0.6 t [Althaus et al. 2021]. When combined, the total fishing mortality for Western Jackass Morwong was 39.0 t for the 2021–22 fishing season. Total fishing mortality was therefore below the RBC of 223 t calculated in the 2018 assessment [Day and Castillo-Jordán 2018b].

The above evidence indicates that the Western management unit is not considered to be recruitment impaired, and the current level of fishing mortality

is unlikely to cause the stock to become recruitment impaired.

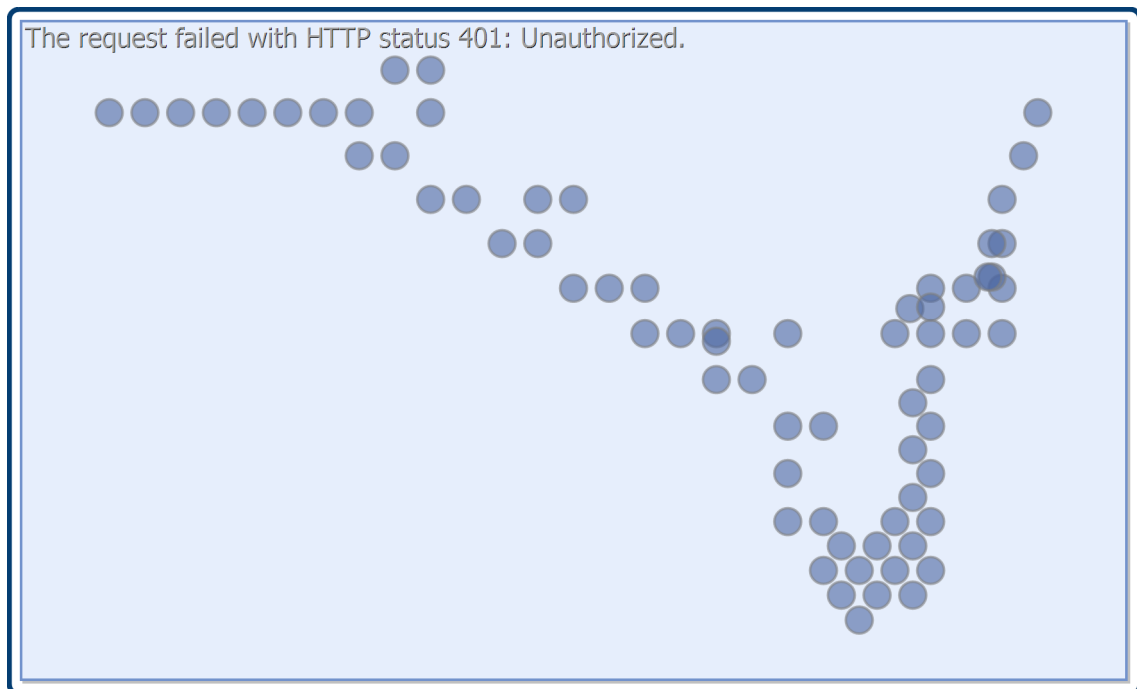
On the basis of the evidence provided above, the Western management unit is classified as a **sustainable stock**.

BIOLOGY

Jackass Morwong biology [Stobutzki et al. 2009]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Jackass Morwong	20–35 years, 700 mm TL	3 years, 230–270 mm FL

DISTRIBUTION



Distribution of reported commercial catch of Jackass Morwong

TABLES

Fishing methods	Commonwealth	New South Wales	South Australia	Tasmania	Victoria
Charter					
Hook and Line		✓			
Rod and reel		✓	✓		✓

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Commercial					
Danish Seine	✓				
Demersal Gillnet	✓				
Demersal Longline	✓	✓			
Fish Trap		✓			
Gillnet				✓	
Hand Line, Hand Reel or Powered Reels				✓	
Hook and Line					✓
Net					✓
Otter Trawl	✓				
Traps and Pots					✓
Unspecified			✓	✓	
Various		✓			
Recreational					
Gillnet				✓	
Hook and Line		✓		✓	✓
Rod and reel		✓	✓		
Setline				✓	

Management Methods					
	Commonwealth	New South Wales	South Australia	Tasmania	Victoria
Charter					
Bag and possession limits		✓			
Bag/possession limits					✓
Fishing gear and method restrictions			✓		
Gear restrictions		✓			✓
Licence		✓	✓		
Limited entry			✓		

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Marine park closures		✓			✓
Size limit		✓			✓
Commercial					
Catch limits		✓			
Fishing gear and method restrictions			✓		
Gear restrictions	✓	✓		✓	
Limited entry	✓	✓	✓	✓	
Marine park closures	✓	✓			
Mesh size regulations		✓			
Quota	✓				
Size limit		✓		✓	
Spatial closures	✓	✓			
Spatial restrictions			✓		
Total allowable catch	✓				
Vessel restrictions		✓			
Recreational					
Bag and possession limits		✓		✓	
Bag limits				✓	✓
Fishing gear and method restrictions			✓	✓	
Gear restrictions		✓			✓
Licence		✓		✓	✓
Marine park closures		✓			✓
Size limit		✓		✓	✓

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Catch					
	Commonwealth	New South Wales	South Australia	Tasmania	Victoria
Commercial	86.3124 t	4.1244 t	0 t	3.34 t	0 t
Indigenous		Unknown	Unknown	Unknown	Unknown (No catch under permits)
Recreational		Negligible (2019–20)	None (2021–22)	16.1 t (in 2012–13)	Unknown

Commonwealth – Commercial (Management Methods/Catch). Data provided for the Commonwealth align with the Commonwealth Southern and Eastern Scalefish and Shark Fishery for the 2021–22 financial year.

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 – Indigenous. The Australian government does not manage non-commercial Indigenous fishing in Commonwealth waters, with the exception of 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 – Recreational (Catch). New South Wales Recreational catch estimate of Negligible is based on zero catches of Jackass morwong recorded during the 2019–20 survey of the catch of NSW 1–3 year recreational licence holders [Murphy et al. 2022].

New South Wales – Indigenous (Management Methods). Cultural Fishing Management Arrangements. See <https://www.dpi.nsw.gov.au/fishing/aboriginal-fishing>

Victoria – Indigenous (Management Methods). A person who identifies as Aboriginal or Torres Strait Islander is exempt from the need to obtain a Victorian recreational fishing licence, provided they comply with all other rules that apply to recreational fishers, including rules on equipment, catch limits, size limits and restricted areas. Traditional (non-commercial) fishing activities that are carried out by members of a traditional owner group entity under an agreement pursuant to Victoria's *Traditional Owner Settlement Act 2010* are also exempt from the need to hold a recreational fishing licence, subject to any conditions outlined in the agreement. Native title holders are also exempt from the need to obtain a recreational fishing licence under the provisions of the Commonwealth's *Native Title Act 1993*.

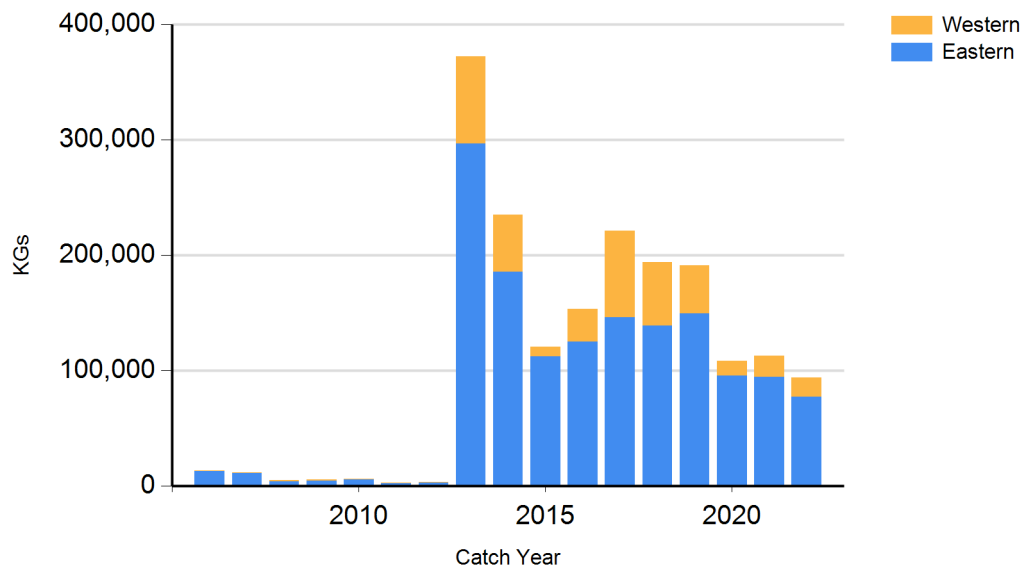
Tasmania – Commercial (Catch). Catches reported for the Tasmanian Scalefish Fishery are for the period 1 July to 30 June the following year. The most recent assessment available is for 2021–22.

Tasmania – Recreational (Management Methods). In Tasmania, a recreational licence is required for fishers using dropline or longline gear, along with nets, such as gillnet or beach seine. A bag limit of 10 individuals and possession limit of 20 individuals (all Morwong species combined excluding Banded Morwong) is in place for recreational fishers.

Tasmania - Indigenous (Management Methods). In Tasmania, Indigenous persons engaged in traditional fishing activities in marine waters are exempt from holding recreational fishing licences, but must comply with all other fisheries rules as if they were licensed. For details, see the policy document 'Recognition of Aboriginal Fishing Activities" (<https://fishing.tas.gov.au/Documents/Policy%20for%20Aboriginal%20tags%20and%20alloting%20an%20UIC.pdf>).

CATCH CHART

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Commercial catch of Jackass Morwong - note confidential catch not shown

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