

Grey Morwong (2023)

Nemadactylus douglasii



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth, Queensland, New South Wales	Eastern Australia	Depleted	Catch, catch rates, size structure, age structure, fishing mortality, biomass depletion

STOCK STRUCTURE

Grey Morwong is distributed along the south-eastern Australian coastline from southern Queensland to central Victoria and south to Tasmania in continental shelf waters typically shallower than 100 m [Kailola et al. 1993]. The stock structure of Grey Morwong has not been formally examined through genetics. However, a single biological stock is likely, given the species' reasonably limited distribution, the prevailing influence of the East Australian Current along the east coast out to 150 m depth and an extended pelagic larval phase [Vooren 1972; Lowry and Cappo 1999].

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

STOCK STATUS

Eastern Australia

This biological stock occurs in waters administered by the jurisdictions of Queensland, New South Wales, and the Commonwealth. Little or no recorded catch comes from Queensland, and stock status is derived using data from the New South Wales- and Commonwealth-managed fisheries.

Grey Morwong caught off the south-east coast of Queensland are at the northern-most limit of their distribution [Kailola et al. 1993]. They are a non-target by-product species in the East Coast Inshore Fishery (ECIF). Catch and

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effort data for Grey Morwong in Queensland are reported as part of a mixed species category, 'Morwongs' and are therefore not considered reliable. Since 2004–05, the catch of Morwongs taken in Queensland-managed fisheries has averaged less than 1 tonne (t) per year with a maximum catch of 1.4 t and a minimum of 0.3 t in 2005–06 and 2015–16 respectively. The recreational catch of Grey Morwong in Queensland is unknown as the species is recorded in a 'Morwong and Sweetlip—unspecified' category [Teixeira et al. 2021]. Notwithstanding the poor reporting reliability, these low catch levels constitute a negligible proportion of the total annual catch taken from the stock.

In Commonwealth waters, Grey Morwong is taken as a bycatch or by-product species in the Commonwealth Trawl and Gillnet Hook and Trap sectors of the Southern and Eastern Scalefish and Shark Fishery (SESSF) (CTS and GHTS) and occasionally in the Coral Sea Fishery (CSF), with last recorded catch in 2018 (16 kg). Catches in the GHTS since 2003 have been less than 0.9 t. Catches in the CTS are down from a peak of approximately 58 t in 2005, to an average of just over 21 t over the last three years.

In New South Wales Grey Morwong is taken predominantly by trap fishers in the Ocean Trap and Line Fishery along the entire coast, and by fish trawl south of Smokey Cape. Reported landings have declined from more than 900 t per year during the early 1980s to averaging approximately 27 t per year during the last three years. Grey Morwong is an important catch for recreational fishers in ocean waters; however harvest has declined to approximately 10 t during 2019–20 [Murphy et al. 2022].

The most recent stock assessment used reconstructed harvest data for the New South Wales and Commonwealth fisheries from 1951–52 to 2021–22, with standardised catch rates from New South Wales between 1997–98 and 2021–22 [Stewart, 2023]. The assessment utilised a surplus production model and estimated that in 2021–22 the biomass of Grey Morwong relative to unfished levels was 11.5%. The biomass depleted rapidly during the 1980s and 1990s, falling below the default limit reference level of 20% in 2000. For the decade up to 2021–22 biomass has been low (around 10% of unfished levels). The substantial depletion in biomass is supported by long-term declines in the average sizes of Grey Morwong landed commercially since the 1980s, large declines in catch rates (fish trapping) since 1997–98, a substantial decline in the recreational harvest since 2000–01, and severely truncated age compositions in the landed catch. The stock is considered to be recruitment impaired.

The data compilation and stock assessment results reported by Stewart [2023] indicate that the biomass of Grey Morwong was fished down during the 1970s, 1980s and early 1990s, with landings greatly exceeding the estimated Maximum Sustainable Yield (MSY) of 356 t (95% CI 259 to 490 t), [Stewart, 2023]. There has been a substantial reduction in commercial catch and effort towards Grey Morwong since the 1990s, and corresponding declines in estimated recreational harvest; however fishing mortality has remained above that to achieve MSY [Stewart 2023] and is expected to prevent the stock from recovering from its recruitment impaired state.

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

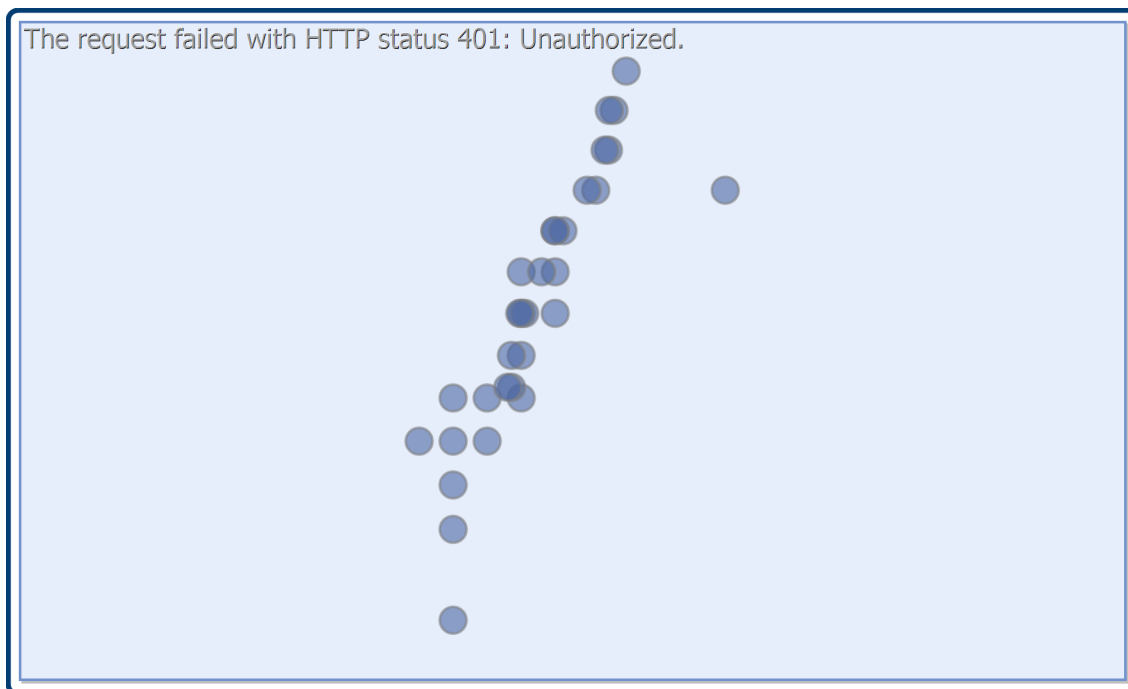
BIOLOGY

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Grey Morwong biology [Hutchins and Swainston 1999; Stewart and Hughes 2009]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Grey Morwong	22 years or longer, 810 mm TL (approximately 670 mm FL)	3 years, 240 mm FL

DISTRIBUTION



Distribution of reported commercial catch of Grey Morwong

TABLES

Fishing methods	Commonwealth	New South Wales	Queensland
Charter			
Hook and Line		✓	✓
Commercial			
Demersal Gillnet	✓		
Demersal Longline		✓	
Fish Trap		✓	
Handline (mechanised)	✓		

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Hook and Line		✓	
Line			✓
Net			✓
Otter Trawl	✓	✓	
Rock Lobster And Crayfish Traps And Pots		✓	
Various		✓	
Recreational			
Hook and Line		✓	✓
Spearfishing		✓	✓

Management Methods			
	Commonwealth	New South Wales	Queensland
Charter			
Bag/possession limits		✓	✓
Gear restrictions		✓	✓
Licence		✓	
Marine park closures		✓	
Seasonal or spatial closures			✓
Size limits		✓	✓
Spatial closures		✓	
Commercial			
Gear restrictions	✓	✓	✓
Harvest Strategy			✓
Limited entry	✓	✓	✓
Marine park closures		✓	
Seasonal or spatial closures			✓
Size limits		✓	✓

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Spatial closures	✓	✓	
Vessel restrictions		✓	✓
Recreational			
Bag/possession limits		✓	✓
Gear restrictions		✓	✓
Licence		✓	
Marine park closures		✓	
Seasonal or spatial closures			✓
Size limits		✓	✓
Spatial closures		✓	

Catch	Commonwealth	New South Wales	Queensland
Charter			Unknown
Commercial	25.344 t	26.6278 t	0.0602 t
Indigenous		Unknown	Unknown
Recreational		9.9 t (2019–20)	Unknown

Queensland – Indigenous (Management methods). For more information see: <https://www.daf.qld.gov.au/business-priorities/fisheries/traditional-fishing>

Queensland – Commercial (Catch). Queensland commercial and charter data have been sourced from the commercial fisheries logbook program. Further information available through the Queensland Fisheries Summary Report <https://www.daf.qld.gov.au/business-priorities/fisheries/monitoring-research/data/queensland-fisheries-summary-report>

New South Wales – Recreational (Catch). Murphy et al. [2022].

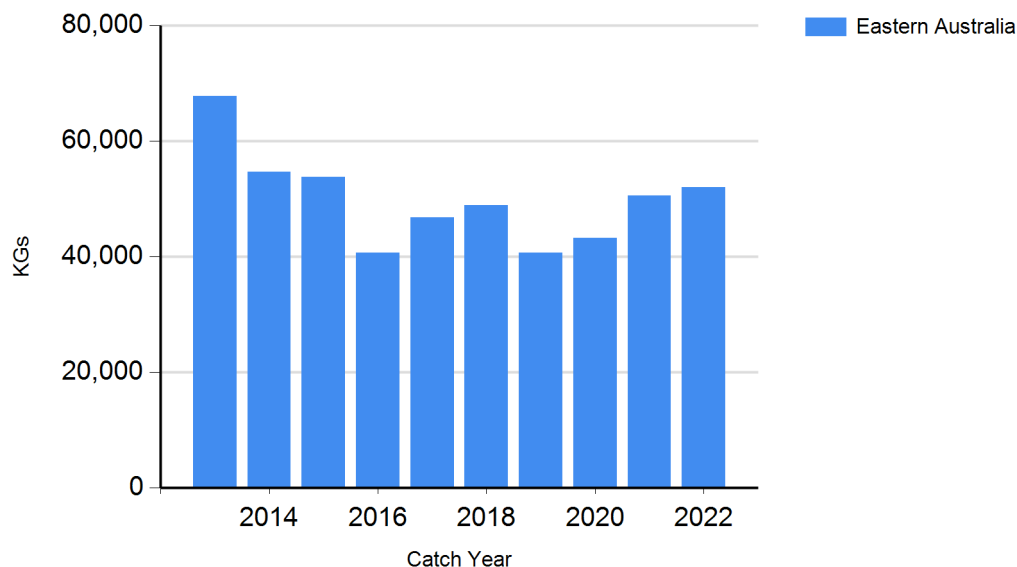
New South Wales – Indigenous (Management methods). (<https://www.dpi.nsw.gov.au/fishing/aboriginal-fishing>)

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.

CATCH CHART



Commercial catch of Grey Morwong - note confidential catch not shown

References	
Gray and Kennelly 2017	Gray, CA and Kennelly, SJ 2017, Recreational charter fishery attributes and variation in key species catches and discards: resource management considerations. Fisheries Management and Ecology 24, 403–415.
Hutchins and Swainston 1999	Hutchins, B and Swainston, R 1999, Sea Fishes of Southern Australia, 2nd edition. Swainston Publishing, New South Wales, Australia, pp. 180.

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Kailola et al. 1993	Kailola, PJ, Williams, MJ, Stewart, PC, Reichelt, RE, McNee, A and Grieve, C 1993, Australian Fisheries Resources. Bureau of Resource Sciences, Department of Primary Industry and Energy, and the Fisheries Research and Development Corporation, Canberra, Australia, 422 pp.
Lowry and Cappo 1999	Lowry, MB and Cappo, M 1999, Morwongs. In: Andrew, N. (Ed.), Under Southern Seas: The Ecology of Australia's Rocky Reefs. University of New South Wales Press Ltd, Sydney, Australia, pp. 172–179.
Stewart and Hughes 2009	Stewart, J and Hughes, JM 2009, Biological and fishery characteristics of rubberlip morwong <i>Nemadactylus douglasii</i> (Hector, 1875) in eastern Australia. Fisheries Research, 96 (2-3) 267–274.
Vooren 1972	Vooren, CM 1972, Postlarvae and juveniles of the tarakihi (Teleostei: Cheilodactylidae) in New Zealand. New Zealand Journal of Marine and Freshwater Research 6, 602–618.
Murphy et al. 2022	Murphy, JJ, Ochwada-Doyle, FA, West, LD, Stark, KE, Hughes, JM and Taylor, MD 2022. Survey of recreational fishing in NSW, 2019/20 – Key Results. NSW DPI – Fisheries Final Report Series No. 161. ISSN 2204-8669.
Stewart 2023	Stewart, J 2023, Stock assessment report 2023. Grey Morwong (<i>Nemadactylus douglasii</i>). NSW Department of Primary Industries—Fisheries: 30 pp.
Teixeira et al. 2021	Teixeira, D, Janes, R, and Webley, J 2021, 2019–20 Statewide Recreational Fishing Survey Key Results. Project Report. State of Queensland, Brisbane.
Sporcic et al. 2021	Sporcic, M, Bulman, CM, Fuller, M 2021, Ecological Risk Assessment for the Effects of Fishing. Report for Southern and Eastern Scalefish and Shark Fishery (Commonwealth Trawl Sector): Otter trawl Sub-fishery 2012- 2016. Report for the Australian Fisheries Management Authority. 277 p.