

# Western Blue Groper (2023)

*Achoerodus gouldii*



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## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	Western Australia	Sustainable	Catch, fishing effort, catch distribution, biology, age composition, fishing mortality, index of spawning stock biomass.
South Australia	South Australia	Negligible	

## STOCK STRUCTURE

Western Blue Groper's distribution spans the coastal waters of South Australia and southern Western Australia. Stock structure has not been studied extensively, but acoustic telemetry of tagged adults in South Australia showed a high site fidelity along a narrow strip of fringing coastal reef (~1 km by ~40 m width) throughout a 12-month period [Bryars et al. 2012]. During sub-adulthood there is a migration from inshore protected habitats to deeper (up to 20 m) waters with increasing bottom relief, but they otherwise maintain small home ranges [Shepherd and Brook 2007; Bryars et al. 2012], making them vulnerable to localised depletion from overfishing. This suggests a complex population structure among adults. Here assessments are provided at the jurisdictional stock level.

## STOCK STATUS

**South Australia** Stock status for Western Blue Groper in South Australia is reported as **Negligible** due to historically low catches in this jurisdiction and the stock has generally not been subject to targeted fishing. South Australia's commercial catch of Western Blue Groper over the past 20 years has averaged < 500 kg per annum, and the species is not a major component of recreational landings.

Fishing is unlikely to be having a negative impact on the stock.

**Western  
Australia**

In Western Australia, the large majority of Western Blue Groper are taken by the Temperate Demersal Gillnet and Demersal Longline Fisheries (TDGDLF) which predominately target sharks off the lower west and south coasts [Braccini and Watt 2023]. Catch-at-age sampling of 682 south coast Western Blue Groper individuals from this fishery in 2013 and 2014 observed reasonable numbers of older fish (greater than 35 years) [Norriss et al. 2016]. Female spawning stock ( $\pm$  95% confidence interval (CI)) was estimated to be 71% (48–97%) of the unfished state. For males it was estimated to be 48% (21–93%). Both indicated a low risk of breaching the 30% threshold that triggers a management review. Estimates ( $\pm$ 95% CI) of the rate fishing ( $F$ ) and natural ( $M$ ) mortality year<sup>[-1]</sup> were 0.023 (0.002–0.047) and 0.077 (0.059–0.097), respectively, well within the management threshold of  $F=M$ . This indicates that the stock was unlikely to have been unacceptably depleted in 2013 and 2014 when the catch-at-age sampling was carried out. From 2005 to 2014 the average annual south coast commercial catch was 30 tonnes (t), and the assessment indicated capacity for slightly higher catches. Since 2015, there was a progressive decline in south coastal fishing effort in the TDGDLF [Braccini and Watt 2023] and the average annual south coast commercial catch declined to 25 t. The recreational catch was too small to estimate with reliable precision in a boat-based recreational catch survey in 2020–21 [Ryan et al. 2022]. The above evidence indicates that the biomass of the stock is unlikely to be depleted and recruitment unlikely to be impaired. The current level of fishing is also unlikely to cause the stock to become recruitment impaired.

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

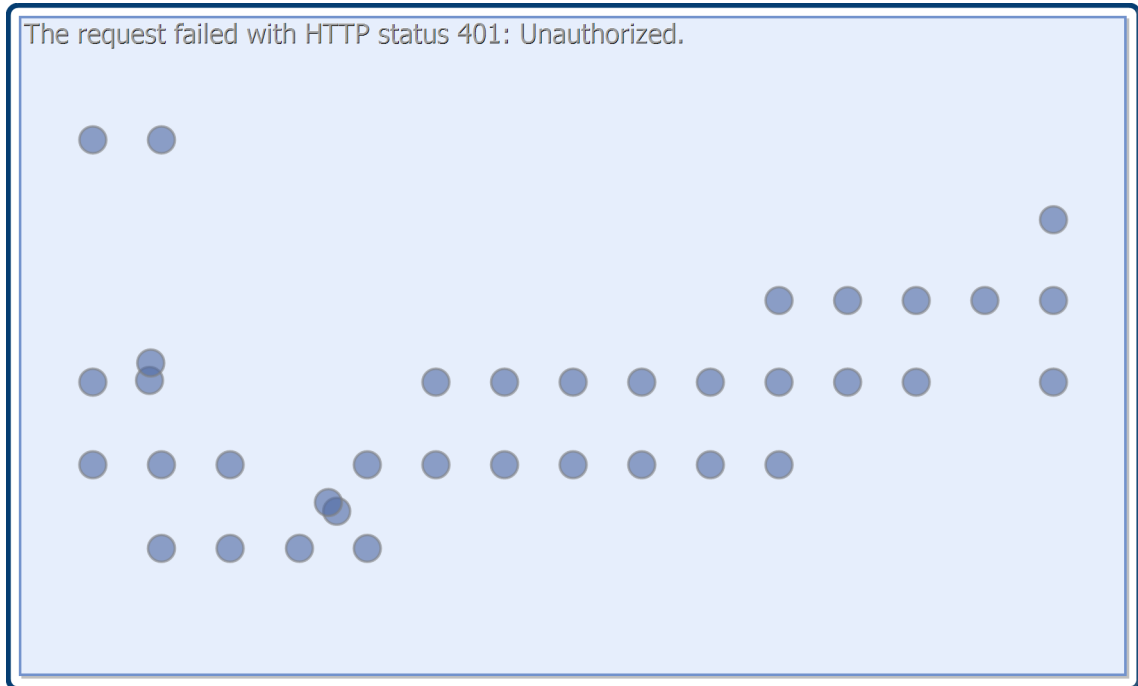
**BIOLOGY**

**Western Blue Groper biology** The Western Blue Groper is a protogynous hermaphrodite (some change sex from female to male) that can reach 40 kg, with exceptional longevity (71 years), slow growth rate, late onset of sexual maturity (17 years) at a large total length (65 cm), very late sex change (age 35 years) at a very large total length (82 cm), and highly variable inter-annual recruitment [Coulson et al. 2009; Norriss et al. 2016].

Species	Longevity / Maximum Size	Maturity (50 per cent)
Western Blue Groper	71 years, 116 cm total length	17 years, 623-693 mm TL

**DISTRIBUTION**

STATUS OF AUSTRALIAN FISH STOCKS REPORT  
Western Blue Groper (2023)



**TABLES**

<b>Fishing methods</b>	<b>South Australia</b>	<b>Western Australia</b>
<b>Charter</b>		
Hook and Line		✓
Rod and reel		✓
<b>Commercial</b>		
Gillnet		✓
Hand Line, Hand Reel or Powered Reels		✓
Longline (Unspecified)		✓
Unspecified	✓	
<b>Recreational</b>		
Hook and Line		✓
Rod and reel		✓
Spearfishing		✓

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<b>Management Methods</b>	
	<b>Western Australia</b>
<b>Charter</b>	
Bag limits	✓
Gear restrictions	✓
License	✓
Limited entry	✓
Seasonal closures	✓
Spatial closures	✓
<b>Commercial</b>	
Effort limits	✓
Effort limits (individual transferable effort)	✓
Gear restrictions	✓
License	✓
Limited entry	✓
Marine park closures	✓
Size limit	✓
Spatial closures	✓
Spatial zoning	✓
<b>Recreational</b>	
Bag limits	✓
Gear restrictions	✓
Licence (Recreational Fishing from Boat License)	✓
Possession limit	✓
Size limit	✓
Spatial closures	✓

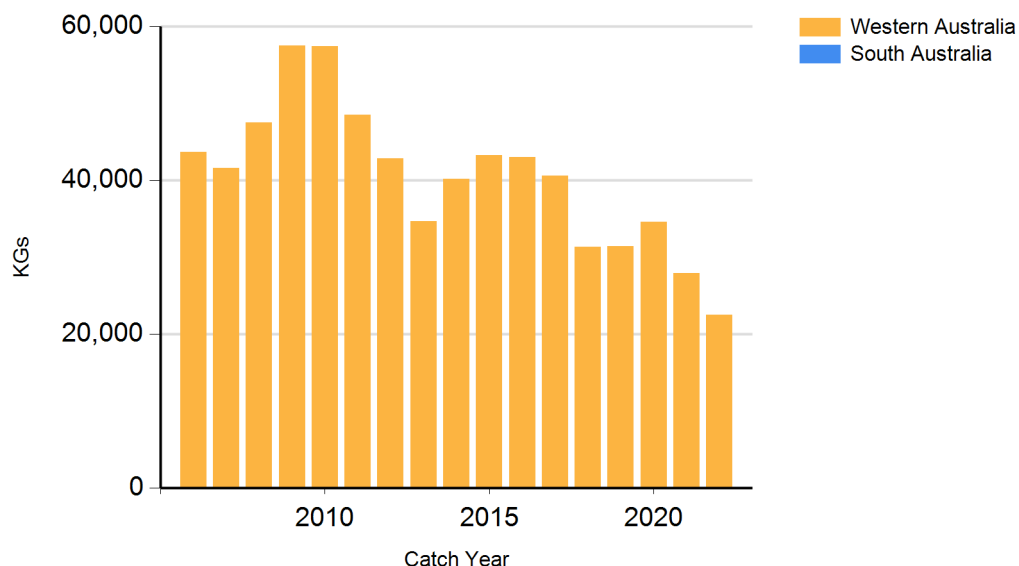
Temporal closures	✓
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Catch		
	South Australia	Western Australia
Charter		< 0.5 t
Commercial	0 t	22.5475 t
Recreational	Unknown	4.8 t ± 1.8 (se) (Boat based)

**Western Australia – Recreational (Management Methods).** A Recreational Fishing from Boat License is required for use of a powered boat to fish or to transport catch or fishing gear to or from a land-based fishing location. Seasonal closures apply to taking of demersal finfish in the West Coast Bioregion, including Western Blue Groper.

**Western Australia – Commercial (Management Methods).** The TDGDLF is managed via input controls, primarily in the form of Individually Transferrable Effort units of time and gear. A network of gillnet exclusion zones were implemented in south coastal waters of the TDGDLF in 2018 to prevent interactions with Australian Sea Lions.

### CATCH CHART



STATUS OF AUSTRALIAN FISH STOCKS REPORT  
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<b>References</b>	
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Shepherd and Brook 2007	Shepherd, SA and Brook, JB 2007, Distribution and ontogenetic shifts in habitat and abundance of the temperate western blue groper, <i>Achoerodus gouldii</i> (Richardson). <i>Journal of Fish Biology</i> , 71: 1457-1478. <a href="https://doi.org/10.1111/j.1095-8649.2007.01616.x">https://doi.org/10.1111/j.1095-8649.2007.01616.x</a>
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