

Bluethroat Wrasse (2023)

Notolabrus tetricus



Klaas Hartmann: Institute for Marine and Antarctic Studies, University of Tasmania, **Justin Bell:** Victorian Fisheries Authority, **Katie Cresswell:** Institute for Marine and Antarctic Studies, University of Tasmania, **Michael Drew:** South Australian Research and Development Institute, **Julian Hughes:** New South Wales Department of Primary Industries

STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
New South Wales	New South Wales	Negligible	Catch
Victoria	Victoria	Sustainable	Catch, effort, catch rates
Tasmania	Tasmania	Sustainable	Catch, effort, catch rates
South Australia	South Australia	Sustainable	Catch, effort, catch rates

STOCK STRUCTURE

Bluethroat Wrasse are found on rocky reefs around south-eastern Australia, including the waters of southern New South Wales, Victoria, Tasmania, and South Australia [Edgar 1997]. There is currently no information regarding the biological stock throughout this range. The species has a planktonic larval duration ranging from 44 to 66 days [Welsford 2003]. Once settled, Bluethroat Wrasse show a high degree of site fidelity [Edgar et al. 2004]. This suggests that, despite the potential for extensive dispersal of larvae by ocean currents, exploited populations in each jurisdiction could represent different stocks. Thus, conservatively, assessment of stock status is presented at the jurisdictional level—New South Wales, Victoria, Tasmania and South Australia.

STOCK STATUS

New South Wales Stock status for the New South Wales stock is reported as **Negligible**. Historically there have been low commercial catches and the stock has generally not been subject to targeted fishing. The commercial catch in 2015–22 averaged approximately 0.6 tonnes (t) per annum. Also, the species

is not a major component of recreational landings [West et al. 2015; Murphy et al. 2020; Murphy et al. 2022]. Fishing is unlikely to be having a negative impact on the stock.

South Australia

In South Australia, the Bluethroat Wrasse is considered a tertiary species of the commercial multi-species and multi-gear Marine Scalefish Fishery (MSF). The species is also taken by recreational fishers in limited quantities [Beckmann et al. 2023]. For the commercial sector, there is a small, targeted fishery for which the captured fish are sold either as fresh ice-slurried product through the live fish market trade [Smart et al. 2023]. They are also taken as by-product in both sectors when other, more valuable species are targeted. For the commercial sector, numerous species of wrasse are reported under the single species name of Bluethroat Wrasse. Since the Bluethroat Wrasse is the largest and most abundant species, it is likely that it has historically dominated the catches. The most recent assessment for the Bluethroat Wrasse considered data up to June 2022 [Smart et al. 2023].

The primary indicators of biomass and fishing mortality for the Bluethroat Wrasse are from the commercial fishery statistics, which include time series of estimates of total catch, targeted handline effort and targeted handline CPUE [Smart et al. 2023]. Between 1997–98 and 2011–12, commercial annual catches were generally consistent at > 20 t per year. However, since 2011–12, total commercial catches have declined. This corresponded to a general decline in both handline and longline fishing effort. Through this period, the targeted handline CPUE remained relatively stable at a moderate level of approximately 50 kg fisherday⁻¹. However, in 2018–19, there were considerable declines in total catch to 6.5 t and targeted handline CPUE to 31.5 kg fisherday⁻¹. Catch has subsequently remained low and was 8.1 t in 2021–22. However, in this year targeted handline catch rate increased to 55.4 kg fisherday⁻¹. This was the greatest inter-annual change on record and breached the associated trigger reference point [Smart et al. 2023]. Whilst these values remain lower than those for the period of 1997–98 to 2011–12, they still remained higher than the low levels recorded during the 1980s and early 1990s.

The above evidence indicates that the biomass of this stock is unlikely to be depleted and recruitment is unlikely to be impaired, and 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, South Australia's Bluethroat Wrasse fishery is classified as a **sustainable stock**.

Tasmania

In Tasmania, Bluethroat Wrasse is targeted for live fish markets for human consumption and as bait for the rock lobster fishery (bait usage is likely to be under-reported). Between the late 1990s and mid 2000s, peak catches (all wrasse species combined) beyond 100 t were reported. Since 2007, catches of Bluethroat Wrasse have been differentiated to species level in commercial logbooks.

A significant catch reduction occurred in 2020 commensurate with COVID related reduced demand for live fish. Since then, catch has remained at a lower level with the total reported catch in 2021–22 at 29.7 t (approximately half the catch taken in 2018–19) [Sharples et al. 2023]. Since data first became available in 2007, commercial catch rates have been relatively stable with a slight upwards trend [Sharples et al. 2023]. Bluethroat wrasse are rarely targeted by recreational fishers, generally representing by-catch [Lyle et al. 2014]. The latest

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Bluethroat Wrasse (2023)

estimates of recreational catches (all wrasse species) were 6.4 t in 2012–13 and 9.6 t in 2017–18, representing about 10% of the total commercial catch [Lyle et al. 2019].

State-wide analyses of catch and effort are insensitive to changes at the level of individual reefs at which the fishery has been shown to impact local population abundances [Stuart-Smith et al. 2008; Walsh et al. 2017]. Thus, it is possible that marked regional shifts in effort over the years have masked localised depletions. Monitoring of such potential localised depletions should be introduced, especially in areas where effort is known to be concentrated.

Based on current evidence, the biomass of Bluethroat Wrasse in Tasmania is unlikely to be depleted and recruitment is unlikely to be impaired. Furthermore, the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired. On this basis, Bluethroat Wrasse in Tasmania is classified as a **sustainable stock**.

Victoria

Bluethroat Wrasse is the predominant species harvested by the Victorian Ocean Wrasse (OW) Fishery, primarily to supply the live fish market. This species was historically harvested commercially in Victorian waters under the general Victorian Ocean Fishery (OF) access licence, but in April 2017, a transferable Ocean Wrasse licence was created with 22 licences issued. Each licence can be operated throughout the State.

Harvests of Bluethroat Wrasse increased rapidly to around 90 t per year when a market for wrasse was established in the early 1990s [Bell et al. 2023]. However, market preference for live fish saw many OF fishers cease to target them. By 2010 the State-wide harvest had declined to current levels of 10 to 30 t per year. In 2021–22 the harvest was around 19 t, down from the average annual harvest for the previous five years of 24.5 t. This was influenced by lower live fish trade due the COVID pandemic. Recreational harvest of Bluethroat Wrasse is unknown but thought to be low relative to the current and historic commercial harvest. There is some indication of growing interest in recreational targeting of this species in Victoria.

A draft harvest strategy is in place for the Victorian wrasse fishery, which assesses the performance of standardised catch per unit effort in three management zones (west, central and east) against agreed performance measures. All three zones are currently performing similarly, fluctuating below the target, but above the trigger for management intervention.

Overall, the pattern of variation and trends in catch rate would appear to indicate relative stability, rather than clear increases or decreases, of biomass. One caveat is that the relationship between catch rate and stock-wide biomass is unclear, as catch rate for this fishery may be prone to hyper-stability due to the highly resident behaviour of wrasse on reef areas and the potential for fishers to shift their effort among reef areas to maintain acceptable catch rates. This could potentially lead to serial depletion [Bell et al. 2023].

The major reduction in effort and catch since the late 1990s, and the recent stable catches and catch rates indicate that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired. Further, the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

On the basis of the evidence provided above, Bluethroat Wrasse in Victoria is

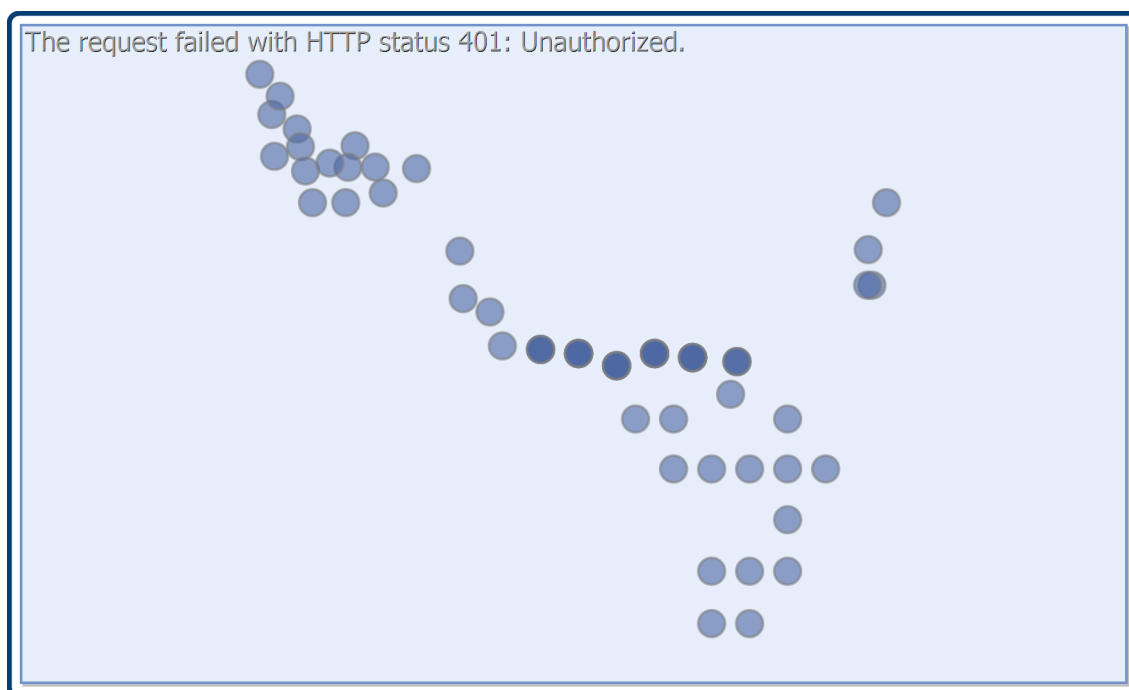
classified as a **sustainable stock**.

BIOLOGY

Bluethroat Wrasse biology [May and Maxwell 1986; Barrett 1995; Smith et al. 2003].

Species	Longevity / Maximum Size	Maturity (50 per cent)
Bluethroat Wrasse	11 years, 400 mm TL	8 years, 300 mm TL

DISTRIBUTION



Distribution of reported commercial catch of Bluethroat Wrasse.

TABLES

Fishing methods	New South Wales	South Australia	Tasmania	Victoria
Commercial				
Fish Trap	✓			
Gillnet			✓	
Hand Line, Hand Reel or Powered Reels			✓	
Handline		✓		

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Bluethroat Wrasse (2023)

Hook and Line	✓			✓
Set longline		✓		
Squid Jigging			✓	
Traps and Pots				✓
Unspecified		✓	✓	
Recreational				
Gillnet			✓	
Handline		✓	✓	✓
Rock Lobster And Crayfish Traps And Pots			✓	
Spearfishing				✓

Management Methods			
	South Australia	Tasmania	Victoria
Commercial			
Bag and possession limits		✓	
Fishing gear and method restrictions			✓
Gear restrictions		✓	
Limited entry	✓	✓	✓
Size limit	✓	✓	✓
Spatial closures		✓	✓
Recreational			
Bag and possession limits		✓	
Bag limits	✓	✓	✓
Gear restrictions		✓	
Licence		✓	✓
Size limit	✓	✓	✓
Spatial closures			✓

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Bluethroat Wrasse (2023)

Catch	New South Wales	South Australia	Tasmania	Victoria
Commercial	0.1769 t	8.05782 t	29.6929 t	19.9253 t
Indigenous	Unknown	Unknown	Unknown	Unknown (No catch under permit)
Recreational	Unknown	Unknown	6.4 t (all wrasse species in 2012–13)	Unknown

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

New South Wales – Indigenous (Management Methods).

<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 – Commercial (Catch). A trip limit of 30 kg for landed dead Wrasse is in place unless fishers hold a Wrasse licence.

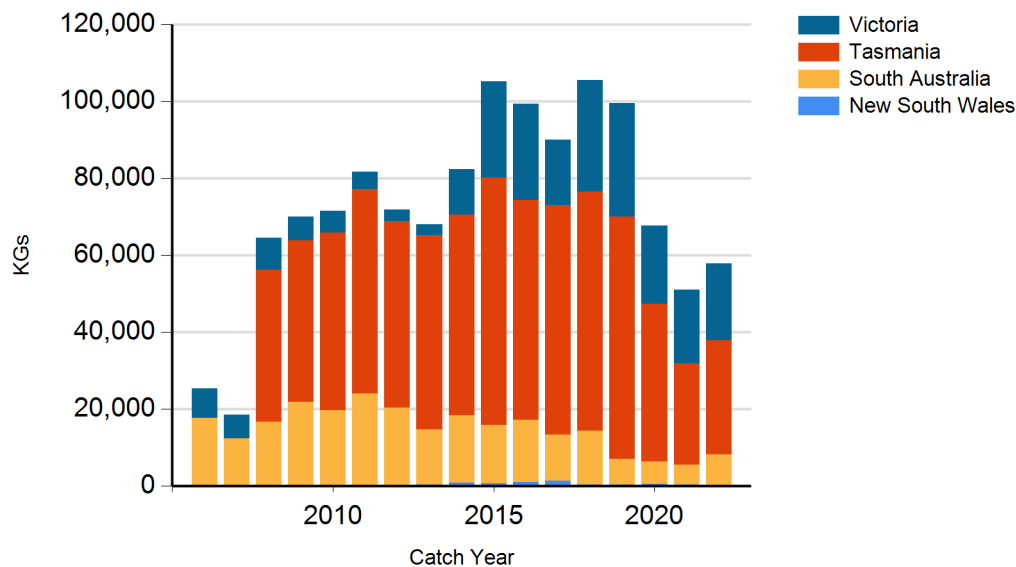
Tasmania – Recreational (Management Methods). A recreational licence is required for fishers using dropline or longline gear, along with nets, such as gillnet or beach seine. A minimum size limit of 300 mm is in place for all Wrasse species in Tasmanian waters. A bag limit of five fish and a possession limit of ten fish (all Wrasse species) are also in place.

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

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Bluethroat Wrasse (2023)



Commercial catch of Bluethroat Wrasse - note confidential catch not shown.

References

Barrett 1995	Barrett, NS 1995, Aspects of the biology and ecology of six temperate reef fishes (families: Labridae and Monacanthidae). PhD thesis, University of Tasmania.
Edgar 1997	Edgar, G 1997, Australian Marine Life: the plants and animals of temperate waters. Reed Books, Melbourne.
Edgar et al. 2004	Edgar, GJ, Barrett, NS and Morton, AJ 2004, Patterns of fish movement on eastern Tasmanian rocky reefs, Environmental Biology of Fishes, 70: 273–284.
Lyle et al. 2014	Lyle, JM, Stark, KE and Tracey, SR 2014, 2012–13 survey of recreational fishing in Tasmania. Institute for Marine and Antarctic Studies, Hobart.
May and Maxwell 1986	May, JL and Maxwell, JGH 1986, Trawl fish from temperate waters of Australia. CSIRO Division of Fisheries Research, Tasmania. 492 p.
Smith et al. 2003	Smith, DC, Montgomery, I, Sivkumaran, KP, Krusic Golub, K, Smith, K and Hodge, R 2003, The fisheries biology of Bluethroat Wrasse (<i>Notolabrus tetricus</i>) in Victorian Waters. Fisheries Research and Development Corporation project 97/128, Fisheries Research and Development Corporation and Department of Primary Industries, Victoria.
Welsford 2003	Welsford, DC 2003, Early life-history settlement dynamics and growth of the temperate wrasse, <i>Notolabrus furicola</i> (Richardson 1840), on the east coast of Tasmania. PhD thesis, University of Tasmania, Hobart.
West et al. 2015	West, LD, Stark, KE, Murphy, JJ, Lyle, JM and Ochwada-Doyle, FA 2015, Survey of recreational fishing in New South Wales and the ACT, 2013–14, Fisheries final report series 149, NSW Department of Primary Industries, Wollongong.
Bell et al. 2023	Bell, JD, Ingram, BA, Gorfine, HK and Conron, SD 2020, Review of key Victorian fish stocks — 2022, Victorian Fisheries Authority Science Report Series No. 38, First Edition, November 2023. VFA: Queenscliff. 176pp
VFA 2019	Victorian Fisheries Authority Commercial Fish Production Information Bulletin 2019. Victorian Fisheries Authority, Queenscliff, Victoria, Australia.
Lyle et al. 2019	Lyle, JM, Stark, KE, Ewing, GP and Tracey, SR 2019, 2017-18 Survey of recreational fishing in Tasmania. Institute for Marine and Antarctic Studies, Hobart, Tasmania.
Stuart-Smith et al. 2008	Stuart-Smith, RD, Barrett, NS, Crawford, CM, Frusher, SD, Stevenson, DG and Edgar, GJ 2008, Spatial patterns in impacts of fishing on temperate rocky reefs: Are fish abundance and mean size related to proximity to fisher access points? Journal of Experimental Marine Biology and Ecology 365:116–125.
Walsh et al. 2017	Walsh, AT, Barrett, N and Hill, N 2017, Efficacy of baited remote underwater video systems and bait type in the cool-temperature zone for monitoring 'no-take' marine reserves, Marine and Freshwater Research, 68: 568–580.

STATUS OF AUSTRALIAN FISH STOCKS REPORT
Bluethroat Wrasse (2023)

Murphy et al. 2020	Murphy, JJ, Ochwada-Doyle, FA, West, LD, Stark, KE and Hughes, JM 2020, The Recreational Fisheries Monitoring Program, Survey of recreational fishing in 2017–18, Fisheries final report series 158, NSW Department of Primary Industries, Wollongong.
Sharples et. al. 2023	Sharples, R, Cresswell, K, Hartmann, K and Krueck, N 2023, Tasmanian Scalefish Fishery Assessment 2021/22. Institute for Marine and Antarctic Studies, University of Tasmania.
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. NSW Department of Primary Industries, Nelson Bay, Fisheries Final Report Series No. 161. 80p.
Smart et al. 2023	Smart, JJ, McGarvey, R, Feenstra, J, Drew, MJ, Earl, J, Durante, L, Beckmann, CL, Matthews, D, Matthews, JM, Mark, K, Bussell, J, Davey, J, Tsohos, A and Noell, C 2023, Assessment of the South Australian Marine Scalefish Fishery in 2021–22, Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2017/000427-6. SARDI Research Report Series No. 1184. 259pp.
Beckmann et al. 2023	Beckmann, CL, Durante, LM, Graba-Landry, A, Stark, KE and Tracey, SR 2023, Survey of recreational fishing in South Australia 2021–22, Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2022/000385-1. SARDI Research Report Series No. 1161. 185pp.