VONGOLES (2023)

Katelysia spp.

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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	Western Australia Vongole Fishery	Negligible	
Tasmania	Ansons Bay Vongole Fishery	Depleted	Biomass estimate, recruitment
South Australia	Coffin Bay Cockle Fishing Zone	Sustainable	Harvestable biomass estimate, recruitment
South Australia	Port River Cockle Fishing Zone	Depleted	Harvestable biomass estimate, recruitment
South Australia	West Coast Cockle Fishing Zone	Sustainable	Harvestable biomass estimate, recruitment

STOCK STRUCTURE

Vongole (*Katelysia* spp.) is a species complex that inhabits southern coastal waters from Augusta in Western Australia to Port Jackson in New South Wales. They are found on sand banks in shallow bays and estuaries from the intertidal zone to a depth of five metres [Cantin 2010]. Stock structure is unknown. However, given the short larval life span, about 16 days for *K. rhytiphora* hatchery animals [Gluis and Li 2014], it is likely that Vongole populations in individual bays would be self-seeding and constitute functionally separate stocks.

Due to the potential for there to be a large number of stocks, assessment of stock status is

presented at the management unit level—Western Australian Vongole Fishery; Ansons Bay Vongole Fishery (Tasmania); Coffin Bay Cockle Fishing Zone, Port River Cockle Fishing Zone, and West Coast Cockle Fishing Zone (South Australia).

STOCK STATUS

Ansons Bay Vongole Fishery

The harvest strategy for Vongole in Tasmania in the Shellfish Fishery Policy Document [DPIW 2007] uses biomass and size-composition as performance indicators but does not define a limit reference point below which the stock would be classified as recruitment impaired. Biomass surveys of the Ansons Bay Vongole fishery are conducted every 2–3 years with total allowable commercial catches (TACCs) determined to be up to 10% of the biomass estimate (at the 95% confidence interval).

Exploitation rates have been below the maximum of 10% and minimum legal limits (32 mm shell length (SL)) are set at a size that enables the majority of Vongole to reproduce at least once prior to being available for harvest. Despite these measures, large stock declines occurred in 2014 and 2015 resulting in a fishery closure from 1 September 2015 onwards. As a result of the long term closure the licence holders have handed in their entitlements and the fishery has effectively ceased. The most recent 2021 estimate of biomass available to the Ansons Bay Vongole Fishery was 13.22 tonnes (t) (95% CI of 10.52–15.92 t), a level that is 6.5% of the peak biomass recorded in 2001. The decline of the stock from 2015 onwards is likely attributable to a combination of mortality of Vongole as a result of extreme rainfall and flood events in the north-east of Tasmania in 2014, followed by ongoing recruitment failure since that time [Keane 2021].

The above evidence indicates that the biomass of this stock is likely to be depleted and that recruitment is likely to be impaired. The above evidence indicates that current fishing mortality is constrained by management to a level that should allow the stock to recover from its recruitment impaired state; however measurable improvements are yet to be detected.

On the basis of the evidence provided above, the Ansons Bay Vongole Fishery (Tasmania) management unit is classified as a **depleted stock**.

Coffin Bay Cockle Fishing Zone

The harvest strategy for Vongole in the Coffin Bay Cockle Fishing Zone (CBCFZ) uses biomass as the performance indicator but does not define a limit reference point below which the stock would be classified as recruitment impaired [PIRSA 2013]. Biomass surveys of Coffin Bay have been conducted since 2013 with fishing mortality constrained by total allowable commercial catches (TACCs) determined to be up to 7.5% of the biomass estimate (at the 80% confidence interval). Based on data sampled consistently across time and space via fishery-independent surveys, harvestable biomass in the Coffin Bay Cockle Fishing Zone was stable during 2015 to 2016 but declined from 2016 to 2018. This was supported by decreasing densities of legal-sized and large Vongole and possible contraction of size frequency distributions resulting in a stock status classification of "depleting" in 2017–18 [Heldt and Mayfield 2020]. Recruitment of Vongole is sporadic [Dent et al. 2016], and the minimum legal lengths, based on estimates of size at first maturity [Dent et al. 2012; Gorman et al. 2010], enable Vongole to reproduce at least once prior to being available for harvest. The presence of sub-legal sized pre-recruits in 2018 suggested that, despite the declining trend in

legal sized biomass and density, recent recruitment to the fishing ground had occurred [Heldt and Mayfield 2020]. In 2021, increased harvestable biomass suggested that the Vongole stock had improved, which was supported by increased densities of legal sized individuals and the increased incidence of survey transects with large numbers of legal sized individuals [Ferguson et al. 2022]. Additionally, there was evidence of successful recruitment in 2021 that included increased densities of sub-legal sized individuals (pre-recruits) and the strong presence of sub-legal sized individuals in size frequency distributions.

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 Coffin Bay Cockle Fishing Zone (South Australia) management unit is classified as a **sustainable stock**.

Port River Cockle Fishing Zone

The Port River Cockle Fishing Zone (PRCFZ) was historically important with significant catches reported prior to 2009. The first biomass survey conducted in 2009 estimated low biomass in the PRCFZ [Gorman et al. 2010], but the causes of this biomass decline are unclear. Due to ongoing sustainability concerns, the PRCFZ has been closed to the taking of Vongole by all fishing sectors since 2011–12. Biomass surveys in early 2016 showed lack of stock recovery, and a project to develop stock enhancement methods has recently been completed (Miller-Ezzy et al. 2021). The above evidence indicates that the biomass of this stock is likely to be depleted and that recruitment is likely to be impaired. Furthermore, the above evidence indicates that current fishing mortality has been reduced by management to a level that should allow the stock to recover from its recruitment impaired state; however, measurable improvements are yet to be detected.

On the basis of the evidence provided above, the Port River Cockle Fishing Zone (South Australia) management unit is classified as a **depleted stock**.

West Coast Cockle Fishing Zone

The harvest strategy for Vongole in the West Coast Cockle Fishing Zone (WCCFZ) uses biomass as the performance indicator but does not define a limit reference point below which the stock would be classified as recruitment impaired [PIRSA 2013]. Biomass surveys of Coffin Bay have been conducted since 2013 with fishing mortality constrained by total allowable commercial catches (TACCs) determined to be up to 7.5% of the biomass estimate (at the 80% confidence interval). The three West Coast bays, comprising the WCCFZ, have been surveyed irregularly but all were surveyed in 2015 and 2021 [Ferguson et al. 2022]. Although recent surveys of individual West Coast bays have occurred in different years there is evidence that harvestable biomass has increased in each bay during 2–3 years leading up to 2021 which is supported by stable or increasing densities of legal sized individuals. Recruitment is sporadic [Dent et al. 2016], and the minimum legal lengths, based on estimates of size at first maturity [Dent et al. 2012; Gorman et al. 2010], enable Vongole to reproduce at least once prior to being available for harvest. Increased densities of sub-legal sized Vongole suggests recent recruitment in all West Coast bays [Ferguson et al. 2022]. 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 West Coast Cockle Fishing Zone (South Australia) management unit is classified as a **sustainable stock.**

Western Australia Vongole Fishery

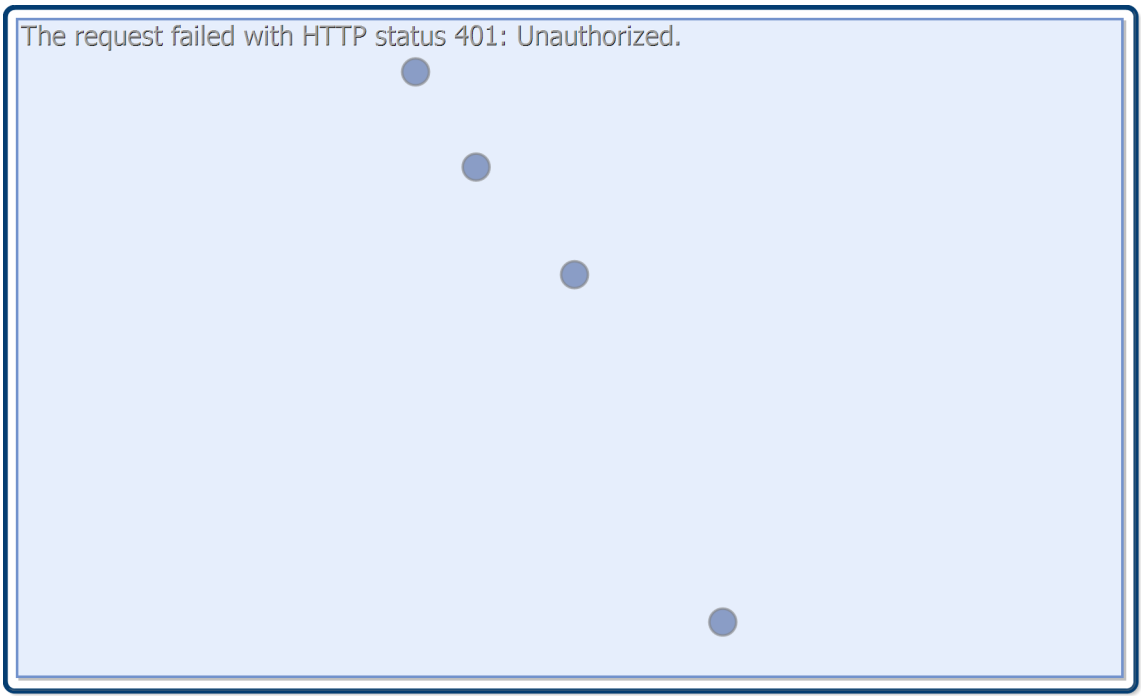
Stock status for the Western Australia Vongole Fishery management unit is reported as **Negligible** due to historically low catches and the stock has not been subject to targeted fishing. The total catch was 0.1 t or less in 2004, 2005, 2012–2014 and 2017 and zero in other years and the species is not a major component of recreational landings. Fishing is unlikely to be having a negative impact on the stock.

BIOLOGY

Vongole biology [Riley et al. 2005; Gorman et al. 2010; Dent et al. 2012] *Note that differences in maturity (50 per cent) occur among species and locations

Species	Longevity / Maximum Size	Maturity (50 per cent)
VONGOLES	29 years, 55 mm SL	4 years, 23–31 mm SL *

DISTRIBUTION



Distribution of reported commercial catch of VONGOLES

TABLES

Fishing methods		
	South Australia	Tasmania
Commercial		
Rake	✓	
Unspecified		✓
Recreational		
Bait Pump	✓	
Hand collection	✓	✓
Rake	✓	

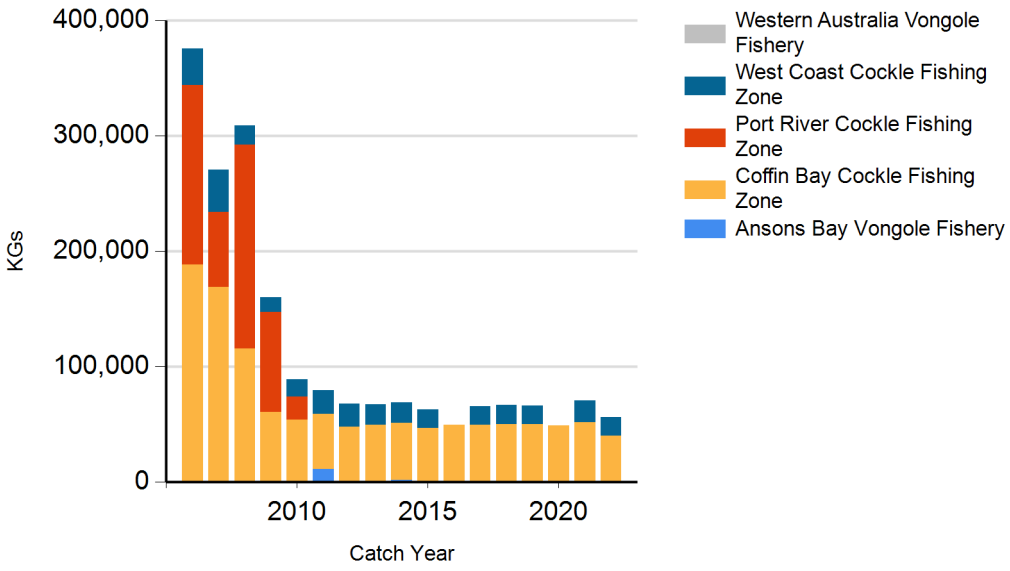
Management Methods		
	South Australia	Tasmania
Commercial		
Gear restrictions	✓	✓
Limited entry	✓	✓
Size limit	✓	✓
Spatial closures	✓	✓
Temporal closures		✓
Total allowable catch	✓	✓
Recreational		
Bag and possession limits	✓	
Bag limits		✓
Size limit	✓	
Spatial closures	✓	

Catch			
	South Australia	Tasmania	Western Australia
Commercial	56.1921 t	0 t	0 t
Indigenous	Unknown	Unknown	

Recreational	12,805 ± 12, n = 574 individuals or 0.14 t per year (2013–14)	Unknown	

Active Vessels. Vongole can be collected from beaches and bay on foot therefore, 'vessels' are not always used. Hence, numbers of licences and fishers are presented here instead of vessel numbers. Licences refer to the number of licence holders with an endorsement to take Vongole for sale.

CATCH CHART



Commercial catch of VONGOLES - note confidential catch not shown

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