

VONGOLES (2018)

Katelysia spp.



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STOCK STATUS OVERVIEW

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

CBCFZ Coffin Bay Cockle Fishing Zone (SA), PRCFZ Port River Cockle Fishing Zone (SA), WCCFZ West Coast Cockle Fishing Zone (SA), ABVF Ansons Bay Vongole Fishery (TAS), WAVF Western Australian Vongole Fishery (WA)

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 5 m [Cantin 2010]. Stock structure is unknown. However, given the short larval life span, ~16 days for *K. rhytiphora* hatchery animals [Gluis and Li 2014], it is likely that Vongole in individual bays would constitute 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 overfished. 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 per cent of the biomass estimate (at the 95 per cent confidence interval).

The 2018 estimate of biomass available to the Ansons Bay Vongole Fishery was 23.61 t (19.49–27.73 t), a level that is 11.6 per cent of the peak biomass recorded in 2001. Exploitation rates have been below the maximum of 10 per cent 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 in 2015 there was no evidence of recruitment (no pre-recruits or juveniles identified). The Ansons Bay Vongole Fishery has been closed to commercial fishing from 1 September 2015 on the basis of being recruitment impaired.

The 2018 biomass estimate was the lowest on record and 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 recruitment failure in 2015–17 [Keane and Gardner 2017]. Low abundances of juveniles were observed in the 2018 survey but are unlikely to lead to significant stock rebuilding in the short term. The above evidence indicates that spawning stock biomass is likely to have been depleted to the point where average recruitment levels are significantly impaired, primarily as a result of substantial environmental impacts.

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 Coffin Bay Cockle Fishing Zone (CBCFZ) encompasses four principal fishing grounds that are sampled on a triennial basis with at least one principal fishing ground sampled annually on a rotational basis with lower intensity sampling occurring outside the principal area. The 2017 estimate of harvestable biomass in the CBCFZ was 791.8 t and is similar to previous estimates (i.e. 867.7 t, whole weight, from fishery-wide sampling in 2015 and 730.4 t in 2016). As the TACC was 50 t, this represented a harvest rate of 6.3 per cent which is below the maximum exploitation rate of 7.5 per cent prescribed in the harvest strategy [PIRSA 2013]. There was also some evidence of recent recruitment in 2017, noting that recruitment is known to be sporadic [Dent et al. 2016], and that setting of appropriate minimum legal lengths enables a majority of Vongole to reproduce prior to being available for harvest, based on estimates of size at first maturity [Dent et al. 2012, Gorman et al. 2009]. 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 that there was low biomass in the PRCFZ [Gorman et al. 2009], 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. Even without fishing mortality, the stocks have not recovered from a depleted state. Biomass surveys in early 2016 showed lack of stock recovery, and a project to develop stock enhancement methods is underway. 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 there has been no detection of measurable improvements and that the stock has yet to recover from its recruitment impaired state despite management constraints on fishing mortality.

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 West Coast Cockle Fishing Zone (WCCFZ) encompasses Smoky Bay, Streaky Bay and Venus Bay, with the total TACC set at 16 t. Triennial surveys provide estimates of biomass for each species with each bay being sampled every third year. As a different bay is sampled each year, the weight of evidence is based on the combined sum of harvestable biomass estimates (at 80 per cent probability level) across three years [i.e. Venus Bay in 2015, Streaky Bay in 2016, and Smoky Bay in 2017]. The 2015–17 estimate of harvestable biomass in the WCCFZ was 490 t, which resulted in a low harvest fraction of 3.3 per cent, and thus, the exploitation rate was below the maximum of 7.5 per cent prescribed in the harvest strategy [PIRSA 2013]. There is evidence of recent recruitment of *K. rhytiphora* in Smoky Bay that occurred between 2015–18 and low level recruitment in Streaky Bay in 2016. Recruitment is sporadic [Dent et al. 2016], and minimum legal lengths in place enable Vongole to reproduce at least once prior to being available for harvest, based on estimates of size at first maturity [Dent et al. 2012, Gorman et al. 2009]. 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**.

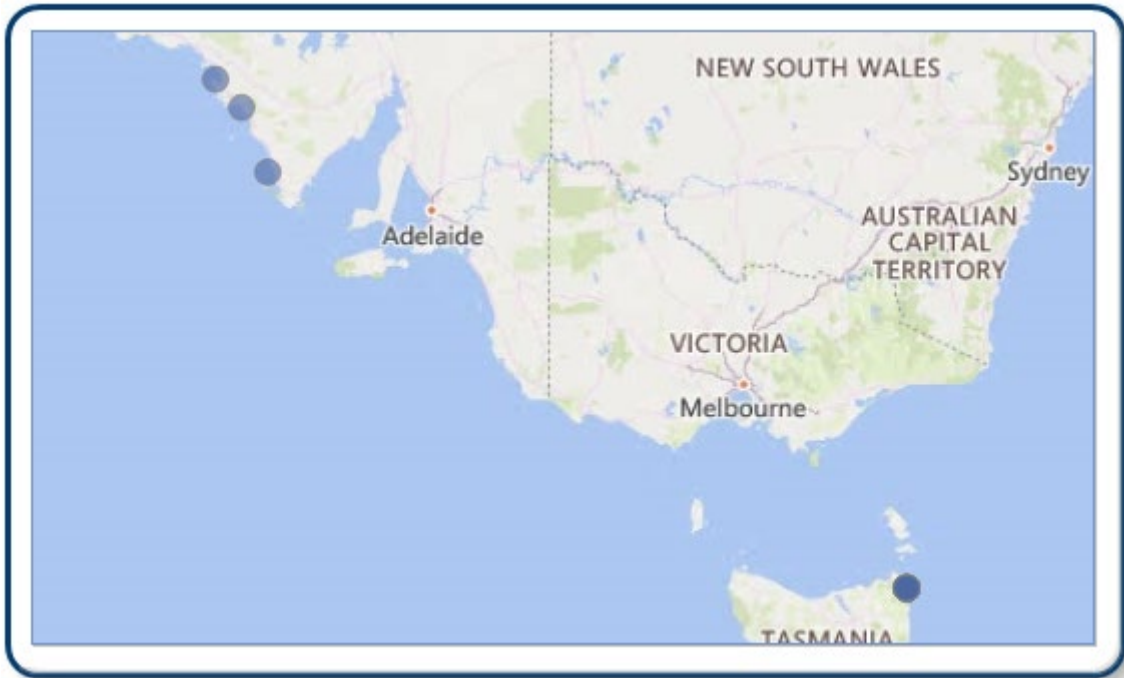
Western Australia Vongole Fishery Stock status for the Western Australia management unit is reported as Negligible due to low catches by this jurisdiction. The Western Australian harvest was 0.1 tonnes (t) or less in 2004, 2005, 2012–2014 and 2017; and zero in other years. Low levels of fishing effort and thus fishing mortality are unlikely to be having a negative impact on the stock.

BIOLOGY

Vongole biology [Dent et al. 2010, Dent et al. 2012, Gorman et al. 2009, Riley et al. 2005]

Species	Longevity / Maximum Size	Maturity (50 per cent)
VONGOLES	29 years, 55 mm SL	4 years, 23–31 mm SL * [*Note that differences in maturity (50 per cent) occur among species and locations]

DISTRIBUTION



Distribution of reported commercial catch of VONGOLES

TABLES

Commercial Catch Methods	South Australia	Tasmania	Western Australia
Hand collection		✓	
N/A			✓
Rake	✓		

Fishing methods	South Australia	Tasmania
Commercial		
Hand collection		✓
Rake	✓	
Indigenous		
Bait Pump	✓	
Hand collection	✓	✓
Rake	✓	
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	✓	✓
Indigenous		
Bag limits	✓	✓
Size limit	✓	
Spatial closures	✓	
Recreational		
Bag and possession limits	✓	
Bag limits		✓
Size limit	✓	
Spatial closures	✓	
Active Vessels		
	South Australia	Western Australia
	8 in CBCFZ, 0 in PRCFZ, 4 in WCCFZ, 8 Licences in CBCFZ, 0 Licences in PRCFZ, 4 Licences in WCCFZ,	<3 in SCEMF,

CBCFZ Coffin Bay Cockle Fishing Zone(SA)

PRCFZ Port River Cockle Fishing Zone(SA)

WCCFZ West Coast Cockle Fishing Zone(SA)

SCEMF South Coast Estuarine Managed Fishery(WA)

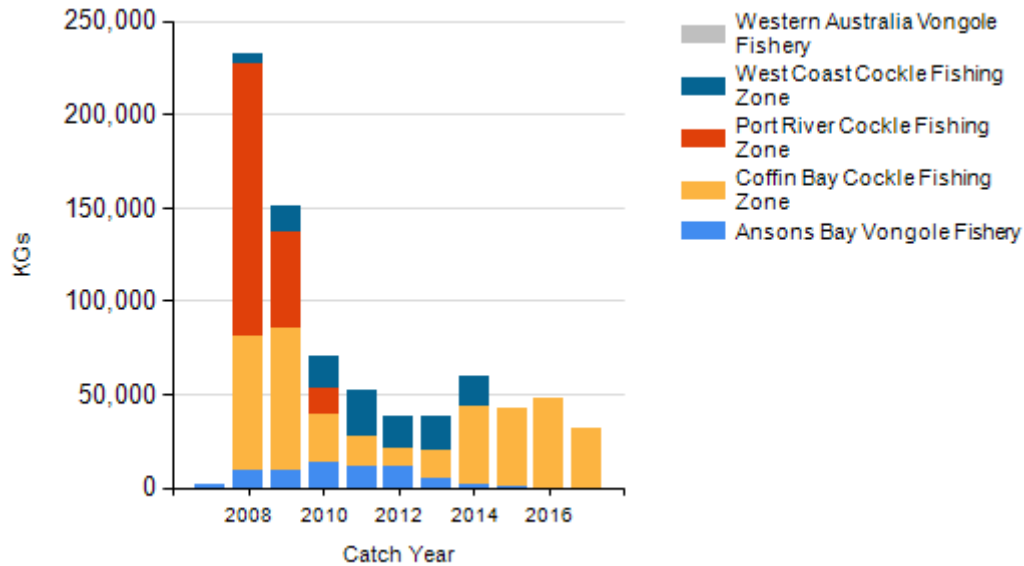
Catch			
	South Australia	Tasmania	Western Australia
Commercial	31.471t in CBCFZ,	0t in ABVF,	
Indigenous	Unknown	Unknown	
Recreational	12 805 ± 12, n = 574 individuals or 0.14 t per year	Unknown	

(2013–14)

CBCFZ Coffin Bay Cockle Fishing Zone (SA), PRCFZ Port River Cockle Fishing Zone (SA), WCCFZ West Coast Cockle Fishing Zone (SA), ABVF Ansons Bay Vongole Fishery (TAS), WAVF Western Australian Vongole Fishery (WA),

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

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

ENVIRONMENTAL EFFECTS on VONGOLES

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