

Venus Clam (2023)

Venerupis largillierti



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Tasmania	Georges Bay Venus Clam Fishery	Depleted	Biomass surveys, CPUE, catch

STOCK STRUCTURE

Venerupis largillierti (commonly known as ‘Venus Clams’) is endemic to New Zealand, but its range extended to Tasmania (probably following accidental introduction) in 1963, where it remains genetically indistinguishable from New Zealand populations based on allozyme analysis [Maguire and Ward 2005; Tarbath and Gardner 2014]. It is found sub-tidally in both muddy and sandy substrates in shallow estuarine waters [Gabriel and Macpherson 1962] on parts of Tasmania’s east and south-east coasts [Grove 2011]. There is limited information on stock structure; however, given the relatively short larval life span, it is expected that the ‘Venus Clams’ in individual bays would constitute separate stocks. The only commercial fishery for this species in Tasmania is at Georges Bay, St Helens, where it forms beds on intertidal sandbars and in deeper channels.

Here, assessment of stock status is presented at the management unit level—Georges Bay Venus Clam Fishery (Tasmania).

STOCK STATUS

Georges Bay Venus Clam Fishery The harvest strategy for ‘Venus Clams’ in Tasmania in the Shellfish Fishery Policy Document [DPIPWE 2007] uses estimated total biomass and size structure as performance indicators but does not identify levels or limit reference points below which the stock would be classified as recruitment overfished. A commercial fishery has operated for the ‘Venus Clams’ in Georges Bay since around 1985 and until 2007 the fishery was managed principally through the

allocation of half yearly or yearly permits. From 2007 a formal total allowable commercial catch (TACC) structure was introduced, splitting Georges Bay into two zones with two associated commercial licences in the northern zone and one in the southern zone [DPIPWE 2007]. The recreational catch is considered negligible compared to the commercial catch.

In the southern zone of the fishery, due to a significant biomass reduction there has been a fishery closure in place since 2013 and fishing has now ceased with the licence having lapsed. The sudden decline in biomass was attributed to prolonged rainfall in the bay's catchment during 2011 [Tarbath and Gardner 2013], which led to low salinity levels and extensive mortality of the 'Venus Clams' population. A survey conducted in 2013 indicated there was no fishable stock, although a juvenile cohort (mode 15–19 mm) was present, which was expected to grow to legal size within two years [Tarbath and Gardner 2013]. However, there has been no indication of any stock recovery to date which may be linked to the environmental changes within the bay accentuated by the extensive development of seagrass beds on the previously productive sand spits.

In the northern zone of the fishery, surveys have been conducted irregularly (every 2–5 years) since 2007, with TACCs determined from the biomass estimate up to a maximum harvest fraction of 10% [TAFI 2009; Tarbath and Gardner 2012, 2013, 2014]. Biomass estimates were at their peak level in 2012 and 2014 with 537 and 467 tonnes (t) [Tarbath and Gardner 2014]. Following this, severe reductions in CPUE were observed in 2015 resulting in a reduction of the TACC from 46.3t to 3t in 2016. A subsequent biomass survey in 2017 estimated a 85% biomass reduction to 76.2 t (95% C.I. 54.7 to 97.6 t), with 65% (49.4 t) of the biomass was above the legal size limit of 40 mm [Keane and Gardner 2017].

Despite a prolonged period of only negligible catches, the most recent 2022 biomass estimate showed a further decline to 10 t (95% C.I. 4.2 t to 12.6 t), which is less than 5% of the peak value. The decline in biomass is likely attributed to ecological change in the estuary; recent harvest volumes in this fishery have been low. Observed changes include a doubling of native oyster (*O. angasi*) biomass between 2016 (4.7 kg/m²; Jones and Gardner, 2016) and 2021 (10.0 kg/m²; Keane, 2021), as well as increase in seagrass densities over key Venus Clam beds. If high abundances of native oyster and seagrass persist in the estuary, there will be continued negative pressure on Venus Clam stocks. The above evidence indicates that the biomass of the stock is likely to be depleted and that recruitment is likely to be impaired.

Northern zone TACCs have been set on the basis of the biomass estimate with a maximum harvest fraction of 10%. Since the significant biomass and CPUE decline in 2015 the TACC has remained below 5 t and significantly under caught with catches of less than 3 t. In the last three years catches have been below 1 t. This level of low fishing mortality over an extended period is expected to allow the stock to recover from its recruitment impaired state; however measurable improvements in biomass are yet to be detected, likely due to the aforementioned ecological factors.

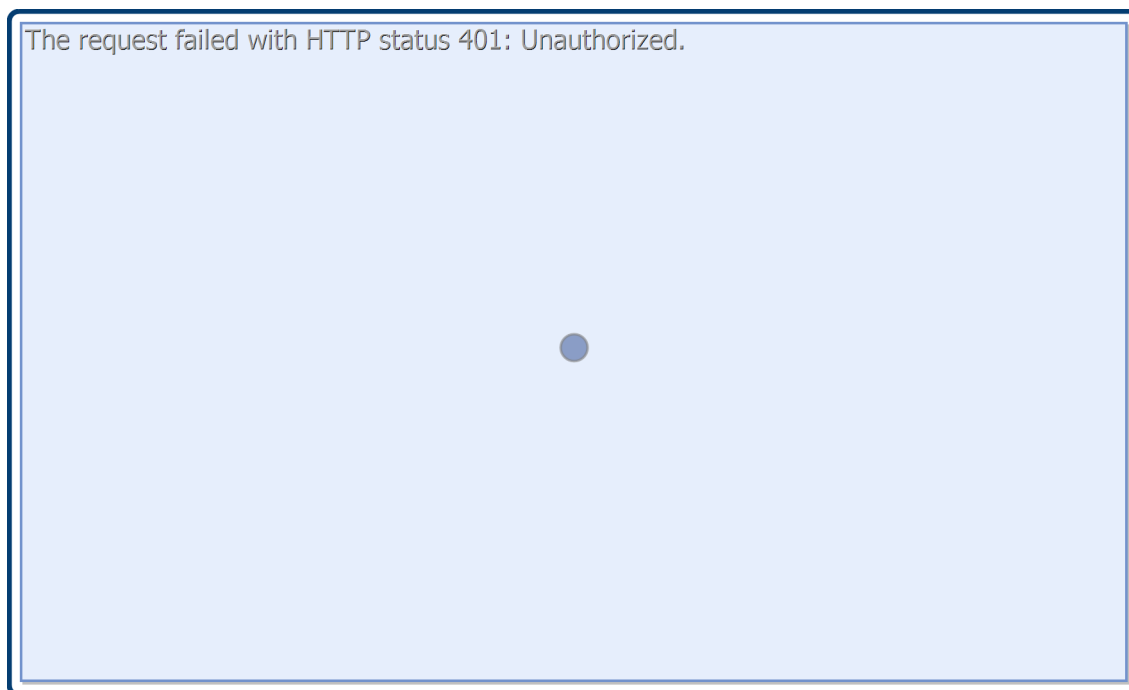
On the basis of the evidence provided above, the Georges Bay Venus Clam Fishery (Tasmania) management unit is classified as a **depleted stock**.

BIOLOGY

Venus Clams biology [Kent et al. 1999; Tarbath and Gardner 2014]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Venus Clam	70 mm	less than 27 mm

DISTRIBUTION



Distribution of reported commercial catch of Venus Clams

TABLES

Fishing methods	Tasmania
Commercial	
Diving	✓
Recreational	
Hand collection	✓

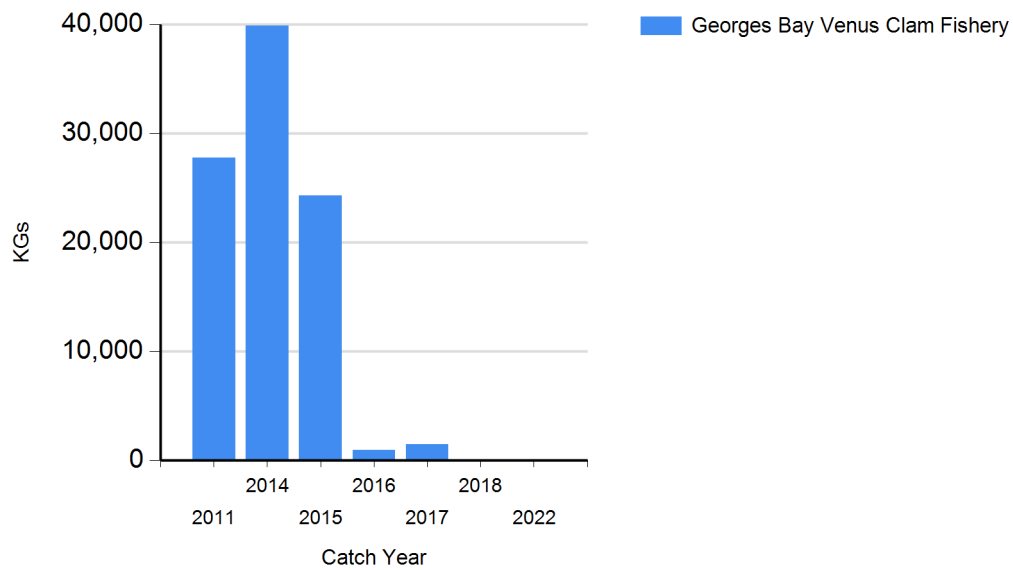
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Management Methods	
	Tasmania
Commercial	
Gear restrictions	✓
Limited entry	✓
Size limit	✓
Spatial closures	✓
Total allowable catch	✓
Recreational	
Bag limits	✓
Gear restrictions	✓
Size limit	✓

Catch	
	Tasmania
Commercial	0 t
Recreational	100 per day

CATCH CHART

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Commercial catch of Venus Clam - note confidential catch not shown

References

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