

Commercial Scallop (2020)

Pecten fumatus



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth	Bass Strait Central Zone Scallop Fishery	Sustainable	Biomass surveys, size composition, catch
Victoria	Ocean Scallop Fishery	Depleted	Biomass surveys, catch
Victoria	Port Phillip Bay Dive Scallop Fishery	Sustainable	Biomass surveys, size composition, catch
Tasmania	Tasmania Scallop Fishery	Depleted	Biomass surveys, size composition, catch

STOCK STRUCTURE

There are several Commercial Scallop bed regions fished commercially in Commonwealth, Victorian and Tasmanian waters. Commercial Scallops in Port Phillip Bay (Victoria) and D'Entrecasteaux Channel (Tasmania) are genetically distinct from conspecifics in most other locations in south eastern Australia [Woodburn 1990, Semmens et al. 2015, Ovenden et al. 2016]. Beds in north eastern Bass Strait are also genetically distinct to adjacent Bass Strait beds and may not contribute to wider recruitment based on biophysical models of larval movement [Ovenden et al. 2016]. Here, assessment of stock status is reported at the management unit level—Bass Strait Central Zone Scallop Fishery (Commonwealth), Ocean Scallop Fishery (Victoria), Port Phillip Bay Dive Scallop Fishery (Victoria) and Tasmania Scallop Fishery.

STOCK STATUS

Bass Strait Commercial Scallops in the Bass Strait Central Zone Scallop Fishery were

**Central
Zone
Scallop
Fishery**

considered recruitment overfished between 1999 and 2007. Following three years of closure due to low scallop abundance and concerns about overfishing, the fishery was reopened in 2009, under a new harvest strategy [AFMA 2007]. Commercial Scallops experienced die-offs in 2010–11 and the harvest strategy was revised in 2012 [AFMA 2012], 2014 [AFMA 2014] and 2015 [AFMA 2015]. Between 2009 and 2013 the fishery operated north of Flinders Island and since 2014 it has operated around King Island.

Elements of the current Commonwealth harvest strategy include: a tiered management approach (whereby a 150 tonnes (t) TAC can be set as a 'default opening' TAC, covering the whole BSCZSF management area, to allow operators to search widely for scallop beds. Tier 1 of the harvest strategy states that if the scientific survey identifies one or more scallop bed(s) with a combined biomass of 1 500 t or more, with scallops greater than 85 mm in length and in 'high' density, and these beds are closed to commercial fishing, the TAC can be stepped up to a maximum of 2 000 t. Tier 2 of the harvest strategy states that if the scientific survey identifies one or more scallop bed(s) with a combined biomass of 3 000 t or more, and these beds are closed to commercial fishing, the TAC can be initially set to at least 2 000 t.

The 2019 biomass survey covered 9 King Island beds with an estimated combined biomass of 41 925 t, 2 Apollo Bay beds with an estimated combined biomass of 1 51 t and 1 Flinders Island bed with an estimated biomass of 1 607 t (Koopman et al. 2019).

The 2019 fishery opened on 12 July 2019 with a TAC of 3 897 t (up from 3 876 in 2018). Fishing generally focused on the same areas as the 2014, 2015, 2016, 2017 and 2018 seasons (that is, east of King Island), and operators reported scallops in good condition. The fishery closed on 31 December 2019 with 2 931 t of the 3 897 t TAC landed (3 258 in 2018).

The management of scallops is complex with a high degree of variation in recruitment from year to year. Recent survey and catch information indicates that the biomass is currently not depleted in managed areas across the fishery and that recruitment has not been impaired in these areas. It is very difficult to predict future recruitment in scallop fisheries. However, the current management arrangements are designed to maintain areas of healthy biomass and on this basis minimise the chance of the stock becoming recruitment impaired. Thus, the above evidence also 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 Bass Strait Central Zone Scallop Fishery (Commonwealth) management unit is classified as a **sustainable stock**.

**Ocean
Scallop
Fishery**

The Victorian Scallop (Ocean) Fishery extends out from the coastline to 20 nautical miles. Since the commercial fishery began in the 1970s, catches have varied greatly from year to year. Prompted by poor catches during the mid-to late-2000s, fishery independent surveys of historically fished scallop beds in 2009 [Harrington et al. 2010] and 2012 [Semmens and Jones 2012] found low scallop densities and negligible recruitment. Consequently, the TAC for the 2010–11, 2011–12 and 2012–13 fishing seasons was set at zero.

A TAC of 135 t has been set since this time to allow limited exploratory fishing to take place to locate viable scallop beds and determine if there has been any stock recovery. Only a small portion of the 135 t TAC has been harvested each year during this period, although more recently in 2020–21 there have been much improved catches (by < 5 of the 91 licence holders so total is confidential) taken from a relatively concentrated area proximal to the Bass Strait Central Zone.

A further abundance survey covering the historical fishing grounds in eastern

Victoria was undertaken in late December 2017 and early January 2018 [Koopman et al. 2018]. Results from this survey have indicated a continued low level of abundance and recruitment throughout the fishery. Whilst the survey did locate a very small number of beds containing commercially available scallops, they were not at a level or density considered sufficient to provide ongoing recruitment to the fishery.

The scallop bed containing the highest abundance of adult scallops greater than the legal minimum length of 80 mm located during the survey had an estimated biomass of 386 t. The density of this bed was estimated at 0.5 individuals per m². Aligning with the Bass Strait Central Zone Commercial Scallop fishery harvest strategy [AFMA 2014] an area containing a minimum abundance estimate of 1 500 t adult spawning stock of high density (above 0.2 individuals per m²) is recognised as being sufficient to maintain ongoing recruitment in a scallop fishery.

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. Environmental factors appear to have prevented such recovery rather than the effects of fishing and a cautious approach has been implemented to support recovery. If the most recent increase in catch is followed by more years of sustained improvement in future catches across a broader range of the fishing grounds, and if future surveys show spawning stock densities to be consistently above an average of above 0.2 individuals per m², then the classification could be revised accordingly.

On the basis of the evidence provided above, the Ocean Scallop Fishery (Victoria) management unit is classified as a **depleted stock**.

**Port Phillip
Bay Dive
Scallop
Fishery**

Fishing commenced in the Port Phillip Bay Commercial Scallop dive fishery in 2014, the year after the single exclusive license was issued, and effort increased gradually over the next two years reaching a maximum in 2016 and 2017. Effort then decreased slightly in 2018. Catch has followed a similar trend, increasing from 2014 through to highs in 2016 and 2017, but decreased substantially in 2018 (as there is only one licence holder the exact amount is confidential). CPUE increased from 2014 to 2016, with nominal CPUE reaching 93 kg/hr, and remained relatively stable in 2017. In 2018, however, nominal CPUE almost halved to 54 kg/hr, as a consequence of the slight decline in effort coupled with a large decline in the total catch landed. Importantly, the standardised results were higher but followed a similar pattern, indicating that bias in the data was consistent over time and that the somewhat symmetrical pattern of increase followed by decrease reflected the actual biomass [Conron et al. 2020].

Commercial scallop abundance naturally fluctuates by several orders of magnitude, which has been well documented in Port Phillip Bay [Coleman 1998]. As a result, the decrease in CPUE observed in 2018 is not necessarily a sign of overfishing and is unlikely to be so given the very conservative landings (<60 t) within the context of the total abundance, which was estimated to be >11 000 t in 2015 [Gwyther 2015] i.e. ~0.5% of the total biomass. As a result, it is likely that the decrease in CPUE observed in 2018 is largely due to naturally lower scallop abundance, which has resulted in a decrease in fishing effort as fishers are receiving lower returns for their effort. As time progresses it will become apparent how the natural variation in scallop abundance affects the dive fishery, but at present, given the very conservative landings, it is highly unlikely that the Port Phillip Bay commercial scallop dive fishery will cause recruitment impairment and the stock can be considered as sustainable [Conron et al. 2020].

The above evidence indicates that the biomass of this stock is unlikely to be

depleted, recruitment is unlikely to be impaired, and 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 Port Phillip Bay Dive Scallop Fishery (Victoria) management unit is classified as a **sustainable stock**.

**Tasmania
Scallop
Fishery**

The harvest of Commercial Scallop in Tasmania waters is regulated through a minimum size limit of 90 mm SL; animals of this size are approximately ≥ 3 years of age and have spawned at least twice [Young et al. 1989]. The Tasmania Scallop Fishery is managed under a harvest strategy where surveys are undertaken to estimate abundance and decision rules are used to open an area (or areas) to fishing with TACs based on the estimated abundance. Similar to the Commonwealth fishery, these decision rules include a minimum size limit and a maximum discard rate (which is not to exceed 20 per cent). However, unlike the Bass Strait Central Zone Scallop Fishery (Commonwealth) (BSCZSF), there is no requirement to close a proportion of the beds found during surveys. Instead, protection of scallop habitat, which may contain scallop beds, is afforded through a ban on scallop dredging in waters less than 20 m and a network of dredge-prohibited areas around the state.

Biomass in the Tasmanian Scallop Fishery (TSF) is historically overfished with recruitment and production levels now affected. In 2013, 2014 and 2015, surveys generally found low scallop densities and limited evidence of successful recent recruitment but did identify two beds (one on the north west coast and the other on the east coast) containing commercial quantities [Semmens et al. 2018]. Surveys in 2016 and again in 2017 generally only found very low levels of scallop abundance and limited evidence of successful recruitment, with no area considered to contain commercially viable quantities in either year. This includes the east and north-west coast beds fished in 2013–15, which appeared to have been fished down to a commercially unviable density, with no subsequent recruitment evident.

Fishing mortality is managed with the aim of restricting catches to beds of mature scallops near the end of their lifespan. The combination of the harvest strategy and depleted biomass has led to a history of closures due to low abundance. In recent times, the fishery was closed between 2000–02 and again between 2009 and 2010. Areas with commercial density of scallops towards the end of their lifespan were opened to fishing each year between 2013 and 2015. The fishery has subsequently been closed since 2016.

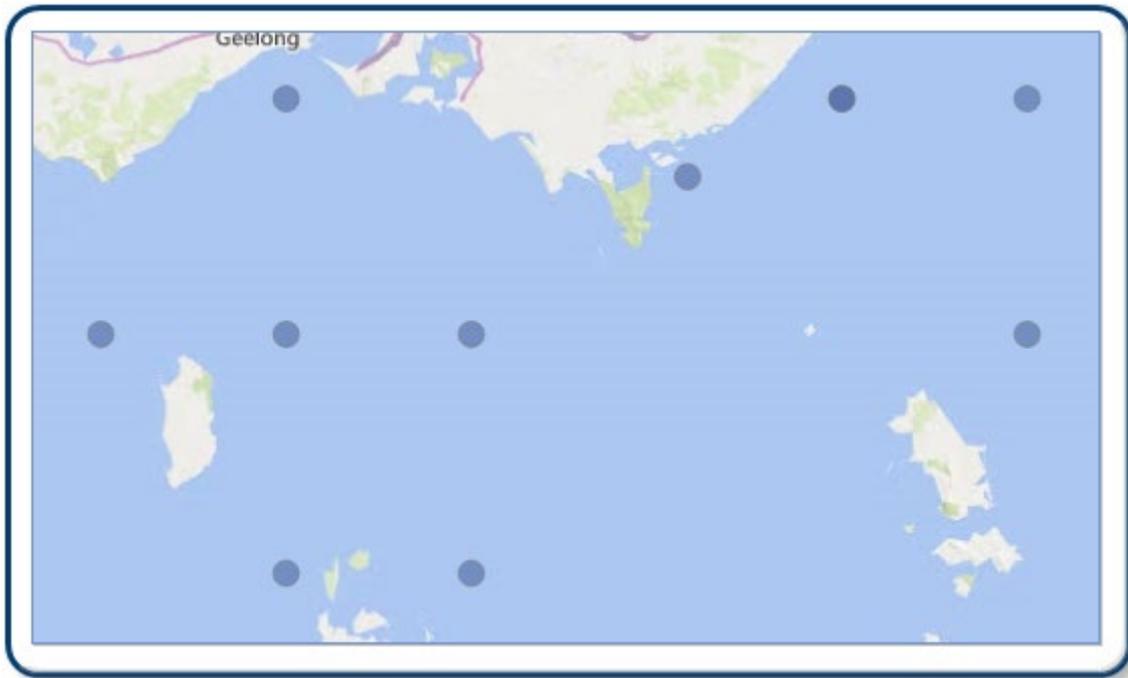
The above evidence indicates that the biomass is depleted and recruitment has been impaired. The current restrictions of fishing mortality have not yet led to evidence of recovery or recruitment. On the basis of the evidence above, the Tasmania Scallop Fishery management unit is classified as a **depleted stock**.

BIOLOGY

Commercial Scallop biology [Young et al. 1989, Woodburn 1990, Semmens et al. 2015, Ovenden et al. 2016]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Commercial Scallop	7+ years, > 120 mm SL	2 years, 70–80 mm SL , depending on region

DISTRIBUTION



Distribution of reported commercial catch of Commercial Scallop

TABLES

Fishing methods	Commonwealth	Tasmania	Victoria
Charter			
Diving			✓
Hand held- Implement s			✓
Commercial			
Diving			✓
Dredge		✓	
Dredges	✓		✓
Recreational			
Diving		✓	✓
Hand held- Implement s			✓

Management Methods	Commonwealth	Tasmania	Victoria
Charter			
Bag and possession limits			✓
Licence			✓
Spatial			✓

closures			
Commercial			
Effort limits			✓
Gear restrictions	✓	✓	✓
Licence		✓	✓
Limited entry	✓	✓	✓
Size limit	✓	✓	✓
Spatial closures	✓	✓	✓
Temporal closures	✓	✓	
Total allowable catch	✓	✓	✓
Recreational			
Bag and possession limits			✓
Bag limits		✓	
Licence			✓
Size limit		✓	
Spatial closures		✓	✓
Temporal closures		✓	

Catch			
	Commonwealth	Tasmania	Victoria
Commercial	3253.26 t	0 t	0 t
Indigenous		Unknown	Unknown (No catch under permit)
Recreational		Unknown	Unknown

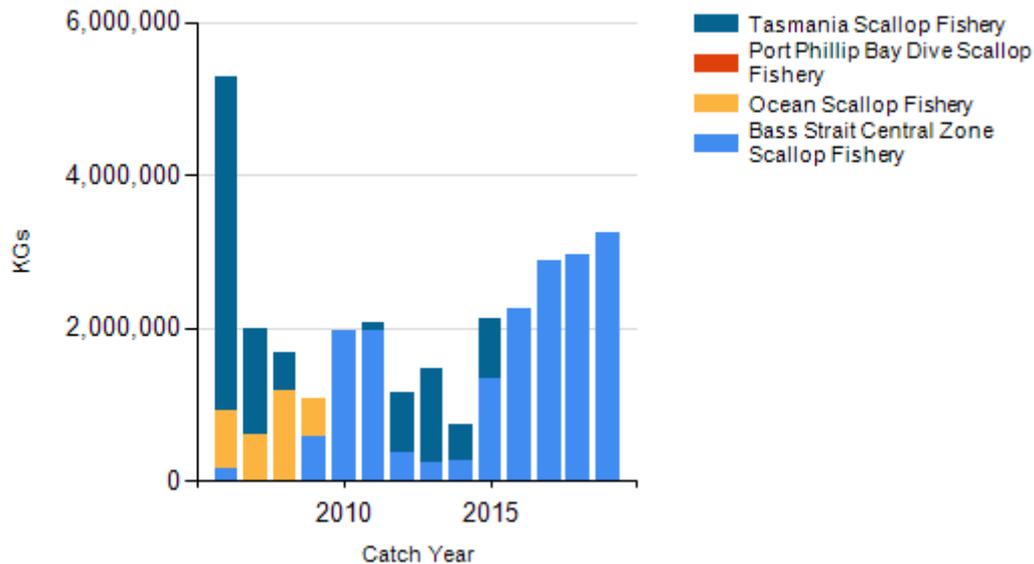
Commonwealth catch is presented for 2017.

Victoria – Commercial (catch) (a) To protect commercial confidentiality of data, the catch in the Ocean Scallop Fishery (Victoria) and Port Phillip Bay Dive Scallop Fishery (Victoria) cannot be reported because there are fewer than five licence holders; and (b) In Victoria, the reporting period is fishing season, which runs from 1 April–30 March.

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*.

CATCH CHART



Commercial catch of Commercial Scallop - note confidential catch not shown.

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