Octopus Fishery – Eastern Zone
Total Allowable Commercial Catch 2024-25
Consultation Paper

Proposal: **Maintain the total allowable commercial catch (TACC) at 68.7 tonnes for the 2024-25 season, commencing 1 July 2024.**

Octopus Fishery management summary

The Octopus Fishery commenced in 2020, following on from a long history of commercial octopus harvesting in eastern Victoria. Catch and effort within the Ocean Fishery began rapidly increasing in 2015-16, with average octopus catch reaching about 10 times the annual 2006-07 levels. In response, the Victorian Fisheries Authority (VFA) removed octopus from the broader Ocean Fishery Access Licence and established a new, quota-based Octopus Fishery Licence class. Current management arrangements are described in Table 1.

Table 1: Fishery management settings

Octopus (Eastern Zone) Fishery	
Licences	11 transferable licences
Species	Pale octopus (*Octopus pallidus*) - makes up majority of catch Māori octopus (*Macroctopus maorum*) Gloomy octopus (*Octopus tetricus*)
Catch management	Annual TACC; individual transferable quota units
Gear management	Octopus shelter pots, with tiered system of limits on lines and pots/line to fish quota to reduce likelihood of interactions with threatened, endangered or protected species and other water users. Licence holders with a quota allocation ≥ 10 t are authorised to use up to 10,000 pots arranged over a maximum of 20 lines and 1000 pots/line, while those with <10 t quota allocation are limited to 2,000 pots and a maximum of 4 lines and 1000 pots/line.
Vessel monitoring system	Introduced November 2020
Compulsory logbook reporting	• Octopus-specific logbook with reporting by species, including discards • Research logbook including data on females and eggs • eCatch quota app
Research to inform future management	FRDC funded project on Victorian octopus fishery population dynamics and structure, scheduled to finish in 2024

The Octopus Fishery has three management zones. Those with an Octopus Fishery licence are authorised to take octopus from the **eastern zone,** where the majority of commercial octopus fishing in Victoria has occurred to date. The eastern zone extends approximately from Seaspray to the Victorian/NSW border, and out to 20 nautical miles offshore, except for marine reserves (Figure 1).

A limited number of temporary, exploratory octopus fishing permits are currently being issued for the central and western zones, to build information on the octopus resource. Catch and effort from these permits are not part of this assessment.

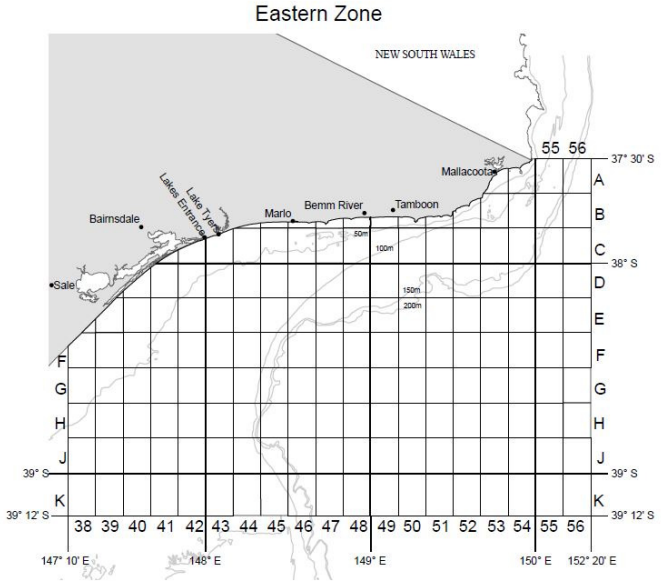

Figure 1: Eastern zone octopus fishery zones

Proposed TACC for 2024-25

The Octopus (Eastern Zone) Fishery will enter its fifth quota year on 1 July 2024. As in previous years, a weight of evidence approach has been applied in the determination to continue the TACC at 68.7 tonnes for the 2024-25 fishing season. While this continues the TACC that has been in place since the commencement of the fishery, it reflects the level of available information for the fishery, including stock status, species biology, fishery management settings and recent catch and effort data. It is noted that:

- In the 2022-23 quota year, a total of 66.5 tonnes was landed, which is consistent with the past two seasons.
- The majority of landings were initially taken in a relatively small area close to Lakes Entrance, where there were some signs of depletion. Effort in recent years has covered a larger area further west and offshore, which is a better practice considering the species biology and susceptibility to localised depletion. However, overall fishing effort is still limited to a relatively small proportion of the area available in the Eastern Zone, so there is little information about the resource within the entirety of the zone.
- At a fishery-wide scale, the standardised catch-per-unit-effort (CPUE) appears fairly stable. In 2022-23, CPUE was 0.43 kg/potlift, which is consistent with that of 2021-22 at 0.45 kg/potlift.
- The time series of catch and effort data at species level is continuing to develop after new species-by-species logbooks and research logbooks were introduced in 2020. This is important for reliable stock status assessment due to the life cycle characteristics of pale octopus, which make it vulnerable to small scale depletion without careful management.
- The short time series of fishery-dependent data does not provide evidence to support a change to the TACC at this time.

Octopus stock assessment

Pale octopus (*Octopus pallidus*) is a medium-sized octopus with rapid growth and a lifespan of 12 to 18 months. Several aspects of its life cycle are important to factor into management settings for long term sustainable harvest:

- The female octopus only reproduces once before it dies. It seeks out a sheltered structure in its sandy environment – such as an octopus pot – to lay its eggs. Pot fishing selectively removes breeding females and their eggs, making populations vulnerable to depletion without careful management.
- Young pale octopus do not disperse far from their hatching sites, therefore there is limited capacity for depleted areas to be replenished from neighbouring sources.

The species has been assessed by VFA as having a 'moderate' risk of overharvesting, considering its biology, as well as the limited reliable and long-term catch data from shelter pots for this species.

Pale octopus in Victoria was classified as 'Undefined' in the *Status of Key Australian Fish Stocks (SAFS) Report 2020* due to a lack of detailed data[1]. The VFA's scientists have been working with the Commonwealth and other relevant States to prepare the next edition of the SAFS report, which is expected to be released shortly. Accurate and comprehensive reporting by industry via the octopus catch and effort logbooks and research logbooks introduced when the Octopus Fishery commenced are continuing to provide improved information for future assessments.

Because pale octopus has a small dispersal range and is structured at fine spatial scales, avoiding local and/or serial depletion of areas within the zone is a high priority for maximising ongoing sustainable harvest.

There has been no spatial management of catch in the fishery as yet, and the TACC each year can be fished anywhere in the zone. To date, the TACC has virtually all been caught from a relatively small proportion of the zone in the Lakes Entrance region meaning there is little information about the resource across the Eastern Zone as a whole.

Catch and effort review

The Octopus Fishery commenced as a quota managed pot fishery in 2020. The TACC of 68.7 tonnes was based on the average annual octopus catch in eastern zone over 2018-19 by Ocean Fishery Access Licence holders. The TACC has been maintained at that level since inception.

Table 2: Summary of total catch and standardised CPUE

Quota Year	Quota (tonnes)	Total Catch (tonnes)	Standardised CPUE (kg/potlift)
2020-21	68.7	66.85	0.38
2021-22	68.7	65.30	0.45
2022-23	68.7	66.53	0.43
2023-24*	68.7	45.24*	-

*2023-24 data is an incomplete year and represents logbook data submitted to the VFA to 30 April 2024.

[1] See Status of Australian Fish Stocks Report 2020 at www.fish.gov.au

Fishery-wide scale

Trends in octopus CPUE are currently the best available proxy indicator for biomass. At a fishery-wide scale, the standardised octopus CPUE has been relatively stable since 2016, when octopus landings began to sharply increase within the Ocean Fishery.

Since 2016, when there is sufficient pot/trap fishing effort to reliably analyse catch rates, standardised CPUE has been relatively stable, ranging between 0.32 and 0.44 kg/potlift (Table 2 and Figure 2) and appears to be at an appropriate level based on our best available information at this stage of the fishery.

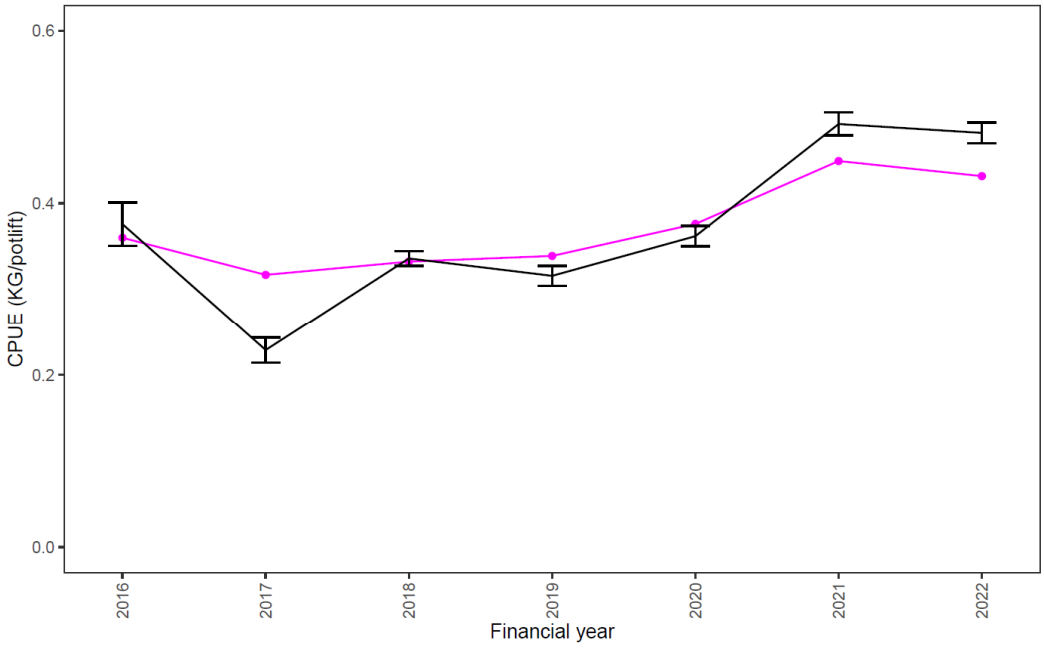

Figure 1: Trends in total octopus CPUE by the Octopus Fishery at fishery-wide scale. (The pink line represents standardised CPUE).

Local stock scale

As noted earlier, pale octopus do not disperse a great distance from their site of hatching. This means that an important risk to sustainable long-term harvest from the eastern zone Octopus Fishery is 'serial depletion' – that is overharvesting octopus from one area in the zone and then moving on to another.

Due to its life history, pale octopus biomass is unlikely to rebuild quickly in even relatively small areas if they become depleted there and their reproductive capacity is reduced. However, their reproductive strategy involves producing relatively large, developed, offspring that are likely to have increased survival when compared to broadcast spawning species. This means their populations are likely to be more stable and less prone to 'boom and bust' periods, assuming a sufficient spawning biomass is retained, and environmental conditions are suitable.

Optimising spatial spread of octopus catch across the eastern zone is therefore a key factor in avoiding localised or serial depletion within the zone. In turn, this maximises long term sustainable harvest.

When octopus catch rapidly increased in the eastern zone in 2015-16, it was initially focused on a small number of coastal grid cells near Lakes Entrance. Fishing effort over 2018-20 suggested that octopus catch by Ocean/Octopus Fishery licence holders was spreading out further across the zone. While fishing was still focused on the Lakes Entrance 'region' of the zone, catch was reported from approximately twice as many grid cells. From 2020 onwards, effort has continued to spread further west, and further offshore (Figure 3).

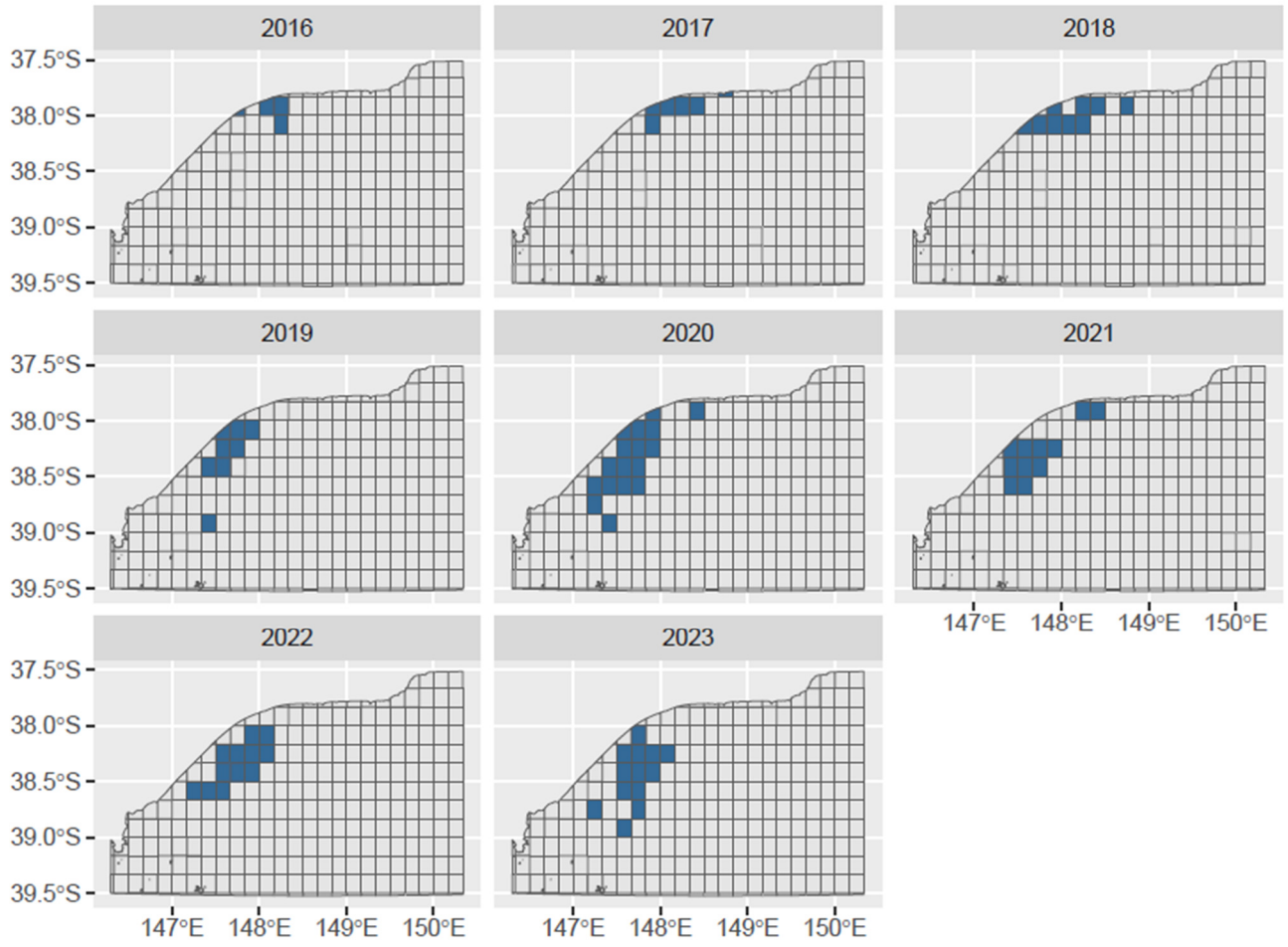

Figure 3: Spread of octopus fishing effort