

Banded Morwong Fishery Total Allowable Commercial Catch 2023/24



Consultation paper

An adjustment to the total allowable commercial catch (TACC) to 2044 fish is proposed for the Victorian Banded Morwong Fishery for the 2023/24 quota period.

Background

Banded morwong were historically a by-product or discard species, however, in the early 1990's, fisheries developed in Tasmania, and later eastern Victoria, to supply the domestic live fish market. Hundreds of Ocean Fishery Access Licence holders were able to take Banded Morwong and there was a dramatic increase in effort directed at the species. The species was likely fully exploited by Ocean Fishery Access Licence holders. This is consistent with the longevity of this species (which can live up to 97 years of age) and the pattern observed in Tasmania.

Fishing for the species was subsequently closed and re-opened as a developmental fishery. In 2000, the developmental fishery was initially limited to three permit holders and soon after one permit holder exited the fishery and this was reduced to two. A decrease in catch and effort was brought about by localised depletion of stocks (fishers' observations), but fishers were able to maintain relatively high catch-per-unit-effort (CPUE) by spreading their effort throughout the extensive inshore reef systems in eastern Victoria.

Today, the banded Morwong fishery is accessible to a small-scale coastal commercial gillnet fishery consisting of only two licences that target the species using mesh nets over inshore reefs. These fishers operate exclusively out of eastern Victoria utilising highly mobile planing hull vessels. The Victorian banded morwong fishery is considered a single stock for management purposes.

The two Banded Morwong Fishery Access Licences were allocated in 2020 following creation of the new licence class under the *Fisheries Regulations 2019*, with a transferable quota management system simultaneously put in place. A temporal closure is in place for the banded morwong fishery from 1st February to 30th April each year, encompassing the species' peak spawning period. The fishery also has a slot limit, which is currently set at a minimum legal size of 40 cm and a maximum legal size of 50 cm. A maximum of 400m of mesh net is authorised under the licence.

It is worth noting that Ocean Fishery Access Licence holders and Rock Lobster Fishery Access Licence holders are also authorised to take banded morwong in marine waters, however only small quantities are landed as there is a catch limit of 2 banded morwong per day for these licences. There is also a recreational fishing daily bag limit of 5 applying to all morwong species.

Key management changes and significant events since 2000

2000	Declared a Developing Fishery
2001	One of the three original permit holders exited the developmental fishery.
2004	Marine Protected Areas were introduced in Point Hicks, Cape Howe and Beware Reef.
2013	<p>IMAS report concluded that since the mid-2000s biomass and standardised CPUE had fallen by nearly fifty per cent.</p> <p>Fisheries Victoria applied a 1.6 kg per fish conversion factor to the 2 tonnes TACC recommendation that was then implemented for the developmental fishery, which equated to 1,250 fish (i.e. 625 fish per permit)</p>
2016	<p>Following a request from permit holders and analysis of available data, Fisheries Victoria altered the conversion factor to 1.2kg per fish to better reflect the average weight. This conversion factor was applied to the two tonne TACC in September 2016 and the total number of fish that could be harvested from the fishery increased to 1,666 (i.e. 833 per permit).</p> <p>The permitted fishing area was also extended further west from Lakes Entrance to Seaspray due to permit holders request to allow them to explore new areas. This was moderately successful as permit holders determined that many of the depths are too great and the fish that were being caught were too large in many of the new areas.</p>
2017	Following a request from permit holders and analysis of available data, the TACC was increased by a further 400 fish to 2066 fish and 2.48 tonnes overall.
2018	Following a request from permit holders and analysis of available data, the TACC was increased to 2,920 fish and 3.5 tonne total
2020	<p>Banded Morwong Fishery Access Licence class established, along with the transferable quota management regime.</p> <p>VMS requirements were introduced, while prior reporting requirement was removed.</p> <p>BW1 transferred from long-standing operator to new operator/licence holder in August 2020.</p>
2021	<p>Electronic quota reporting via Vic-quota introduced, complementary to the ongoing monthly paper-based catch and effort logbooks.</p> <p>BW2 transferred from long-standing operator to new operator/licence holder in July 2021.</p>

History of TACC changes

A Total Allowable Commercial Catch (TACC) is set annually with a specified number of fish and each licence holder is allocated an equal share at the beginning of each season. Permanent and temporary quota transfers are available between licence holders since the creation of the licence class in 2020. Since 2013, the TACC (which was managed under permits at the time) has undergone a staged increase from 1250 fish to 1666 fish in 2016, to 2066 fish in 2017, and up to 2920 fish in 2018. The TACC has remained at this level since, including for the most recent 2022/23 fishing season.

Status of Australian Fish Stocks Assessment (2020)

The Victorian banded morwong fishery management unit is classified as an 'undefined stock' in the most recent assessment included in the Fisheries Research and Development Corporation *Status of Key Australian Fish Stocks (SAFS 2020)*. The available evidence indicated that the commercial Banded Morwong fishery in eastern Victoria was unlikely to be recruitment impaired. However, given the limited number of operators, the use of CPUE as a proxy for biomass may be unreliable across the breadth of the fishery. The SAFS 2020 assessment noted that declines in CPUE to below the reference period average in the previous two years (2017/18 and 2018/19) were associated with increasing fishing effort and that it would be important to monitor how this fishery performs in the following years.

Catch and effort review (undertaken in February 2023)

2022/23 fishing season catch summary

The total catch from the commercial banded morwong fishery in 2022/23 fishing season (whereby the fishery is open from 1 May to 31 January) increased marginally from the year prior. With the exception of one single trip by one of the licence holders in the 2022/23 fishing season, all other fishing activity in the fishery was undertaken by the second licence holder. Post-landing quota reporting demonstrates that 1873 out of the allowed 2920 banded morwong were landed in total during the 2022/23 fishing season, which represents 64.1% of the TACC for that season. This resulted in a TACC under-catch of 35.9% (1047 fish). It is noted there was also an under-catch of the TACC in the 2020/21 and 2021/22 season of 41.6% and 31.5%, respectively, predominantly due to the impacts of Covid on the live fish market and reduced activity of operators.

The reported commercial catch of banded morwong retained outside of the targeted fishery (e.g. landed by Ocean Fishery Access Licences or Rock Lobster licences) during the 2022/23 banded morwong season (1 April to 31 March) was negligible. Recreational catch is unknown but is expected to be well below the catch retained by the commercial fishery in East Gippsland and low for the reefs that were targeted by commercial operators in 2022/23.

2021/22 Stock assessment summary

The following analysis relates to data since the implementation of the developmental fishery in Victoria and, unless indicated otherwise, incorporates data from fishing between 1 June 2000 and extending to 30 June 2022 as reported by catch and effort returns and entered into the VFA's Catch and Effort database. Fishing is only undertaken by mesh netting within the fishery, so this gear is used to calculate CPUE and is likely to be the most reliable proxy for abundance of the species under current management. Key findings:

- Total catch (number of fish) reported via catch and effort returns during the 2021/22 assessment period (financial year) decreased slightly from 2020/21 (see Figure 1).
- Total effort (hours fished) reported via catch and effort returns during the 2021/22 assessment period (financial year) nearly doubled, increasing significantly from 2020/21 (see Figure 1).
- The fishery's CPUE is expressed as the number of fish retained per hour (a proxy for the relative abundance of banded morwong in the fishery). Standardised CPUE (as shown in Figure 3) decreased significantly in 2021/22 by 37.7% from 2020/21. **The standardised CPUE in 2021/22 was 6.34 fish per hour** and is a historic low, with the CPUE from the last four financial years being less than the reference period low. This decrease continues what is now a declining trend over six financial years since the significant peak in annual CPUE in the 2015/16 fishing season.
- The voluntary fishery-dependent data collection program has been in place since at least 2014 and provides information on size composition to better inform Banded Morwong assessments. While there are limitations in the use of this dataset due to the selectivity of fishing gear (i.e it may result in smaller fish being underrepresented in a sample), the available information supports the conclusion that the fishery is unlikely to be recruitment impaired.
- With <50 days of fishing effort influencing the trend in some recent assessment periods, CPUE may not be a reliable indicator of biomass across the breadth of the fishery. Furthermore, this is confounded by the transfer of both licences from the two long-term operators to new operators in 2020 and 2021 with limited to no experience in the fishery and likely attributing to lower CPUE in their commencement in the fishery.

The available evidence indicates that the commercial banded morwong fishery in eastern Victoria is declining but is unlikely to be recruitment impaired.

Additional information

It is important to note that each of the current licences were transferred to new operators in 2020 and 2021, with no previous experience in this niche fishery. The licences were transferred from operators who had extensive experience (>20 years) in the fishery, including since its inception as a developmental fishery in 2000. While the standardisation attempts to account for this, a near complete transition of active fishers in this short timeframe difficult to account for. This, along with other factors, may be a contributing factor towards the low CPUE in 2021/22 and the year prior. Fishers have also reported that unusually cold water temperatures occurred in the 2022/23 fishing season that they believe resulted in poor catches due to limited movement by banded morwong. Predation by seals has also been reported as a contributing factor.

The current standardisation process accounts for Area Code, operator (PFN), month, and the PFN:Area Code interaction (suggesting not all operators are equal with regard to fishing success when fishing the same Area Code).

The VFA notes, however, that regardless of the low catch rates experienced since the licence transfers in 2020 and 2021, standardised CPUE declined year-on-year between 2015/16 to 2019/20 with the previous experienced operators.

Determining the 2023/24 TACC

A weight of evidence approach has been used in determining the proposed TACC of **2044 fish (banded morwong)** for the 2022/23 fishing season. This includes consideration of factors such as biological characteristics of the species, SAFS stock status, the latest VFA stock assessment for 2021/22 detailed above, existing fishery management arrangements (including 3-month closed season and slot limit), latest catch and effort information and stakeholder views. The following points are also noted:

- 1) There is not currently a reliable biomass estimate for the Victorian banded morwong fishery.
- 2) There was a significant undercatch of the TACC in 2022/23 fishing season and a significant increase in fishing effort, with a historic low standardised CPUE for the fishery of 6.34 fish/hour in 2021/22
- 3) The fishery's annual standardised catch-per-unit-effort (CPUE) has declined year-on-year over 6 financial years since 2015/16..
- 4) A TACC of 2044 fish would apply a precautionary approach to management of this data-limited fishery and potentially vulnerable long-lived species by reducing the current TACC of 2920 fish by 30%.
- 5) While the 6-year declining trend in the fishery's standardised CPUE (which is used as a proxy of relative abundance) is of concern, it is recognised that:
 - a. total catch over the last three fishing seasons (2019/20 to 2021/22) has been well below the TACC of 2920 fish leaving large numbers of fish in the water. It is understood that this was predominantly due to the impacts of Covid on the live fish market in 2020 and 2021, and the activity of new operators involved. In effect, a total of 1214 fish, 920 fish and 1047 fish were not harvested from the fishery resulting in an under-catch of the TACC of 41.6%, 31.5%, and 35.9 % for the 2020/21, 2021/22 and 2022/23 fishing seasons, respectively.
 - b. the historic low CPUE for the fishery of 6.34 fish/hour in the 2021/22 financial year may be related to the new operators with limited to no prior experience, particularly when comparing catch rates to previous long-term operators with over 20 years of experience in the niche banded morwong fishery;
 - c. the limited number of operators and fishing days creates some uncertainty in the reliability of CPUE as a proxy for biomass the breadth of the fishery.
 - d. 15 of the 25 area codes have been fished by the current licences over the last 3 fishing financial years, with 76% of the fish retained during this time resulting from fishing at only 5

of these area codes (indicating clear opportunity to focus fishing effort on other reefs and area codes in future).

While acknowledging there are uncertainties and limited data for this fishery, the fishery will need to be carefully monitored and the VFA strongly recommends action to be taken by current operators to better spread fishing effort to reefs in the western part of the fishery. Improved spread of effort may potentially increase fishing efficiency and mitigate risk of localised depletion of banded morwong within the 40-50cm slot limit in eastern areas of the fishery closer to Mallacoota.

It is recommended that in early 2024 a further comprehensive analysis be undertaken and a workshop held with key stakeholders to adequately inform the TACC ahead of the 2024/25 fishing season.

Appendix: catch and effort data

*Note: graphs are by financial year (1 July to 30 June) and align with the Status of Australian Fish Stocks reporting assessment period. These incorporate data from catch and effort returns in the VFA's Catch and Effort database and incorporate all returns up to the end of 2021/22 financial year.

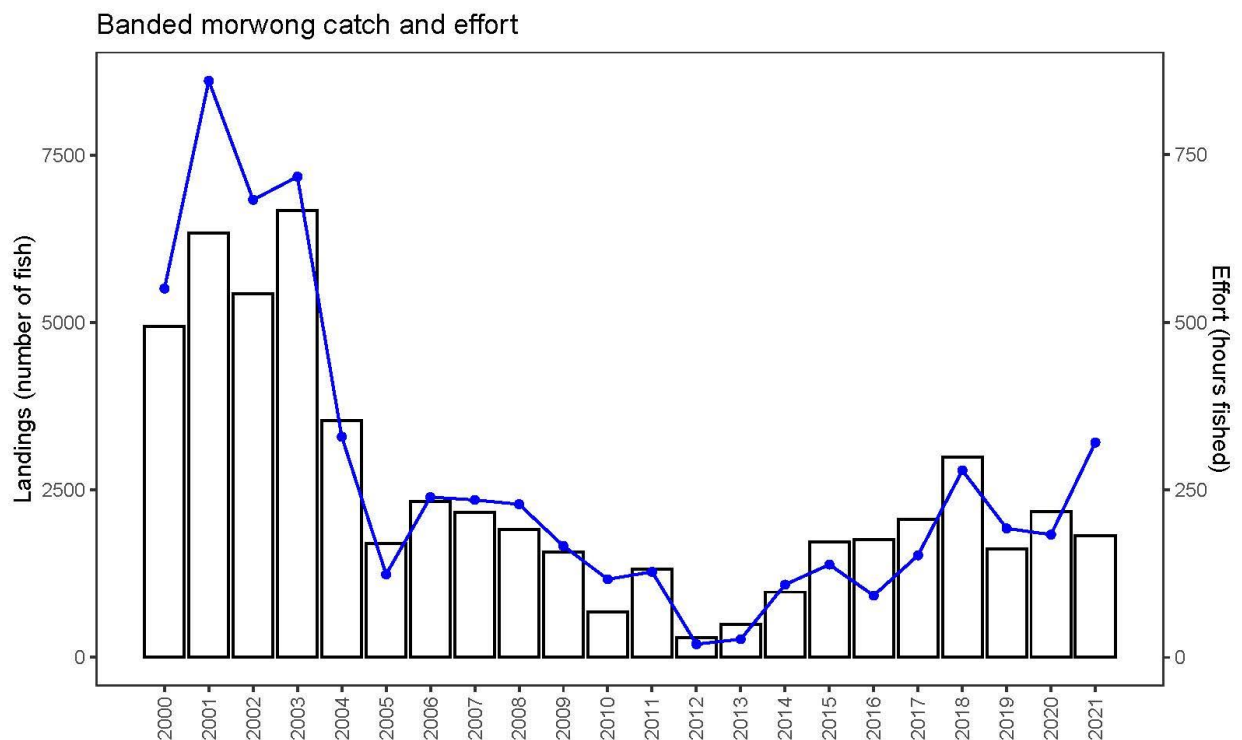


Figure 1. Nominal catch (primary y-axis) and effort (secondary axis) 2000/01 –2021/22 financial years
Catch (number of fish) is shown by the bars, while effort (hours fished) is shown as the connected blue points.

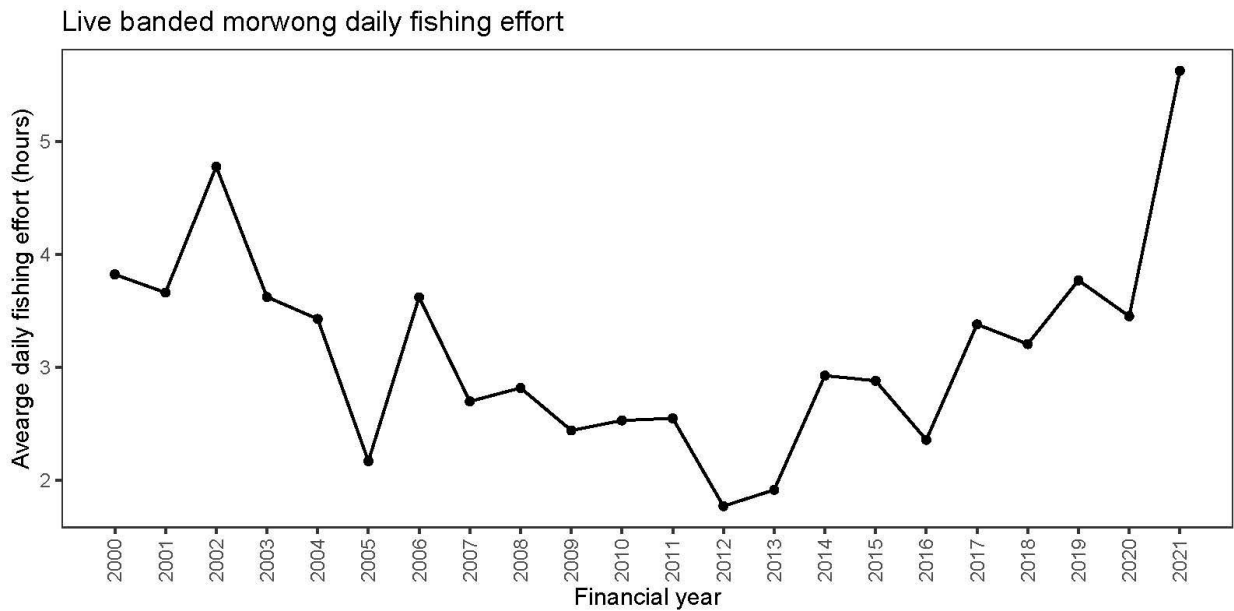


Figure 2. Average daily fishing effort during 2000/01 –2021/22 financial years

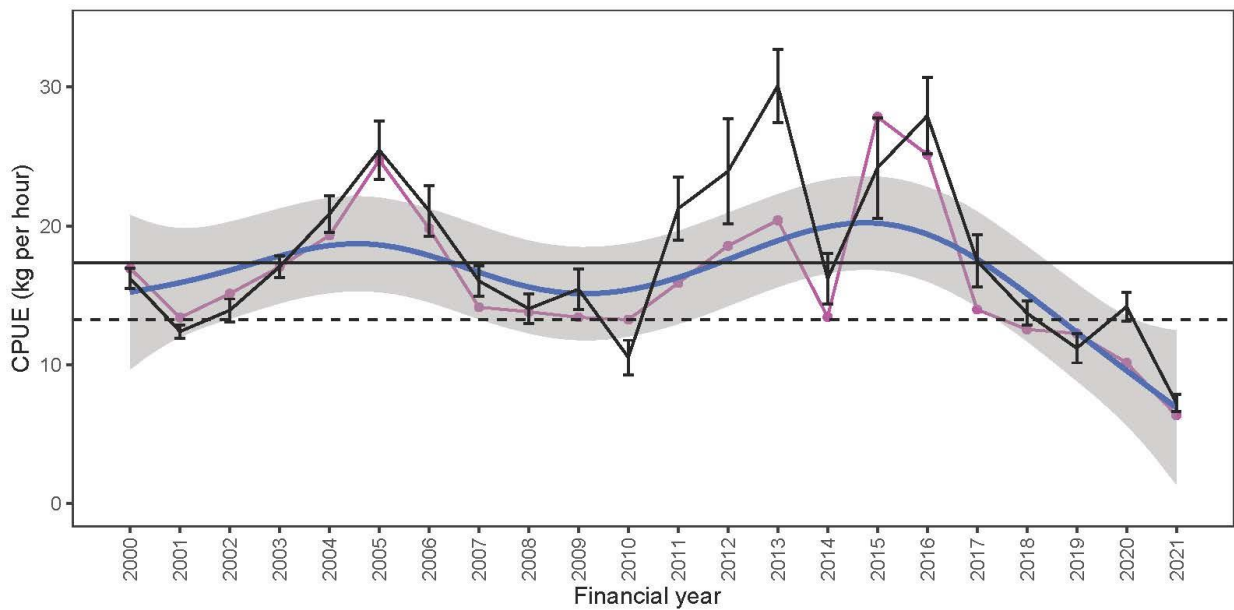


Figure 3. Catch-per-unit-effort (CPUE) of landed banded morwong by mesh net in the banded morwong fishery during 2000/01 –2021/22 financial year

Black line is nominal CPUE (\pm SE), magenta line is standardised CPUE, blue line is a generalised additive model (GAM) which is a smoother trend of the standardised CPUE trend with the shaded grey area representing the 95% confidence interval of the GAM. Horizontal black line is the mean standardised CPUE during the reference period (2000–2015) and the dashed black line is the minimum standardised CPUE within the reference period.

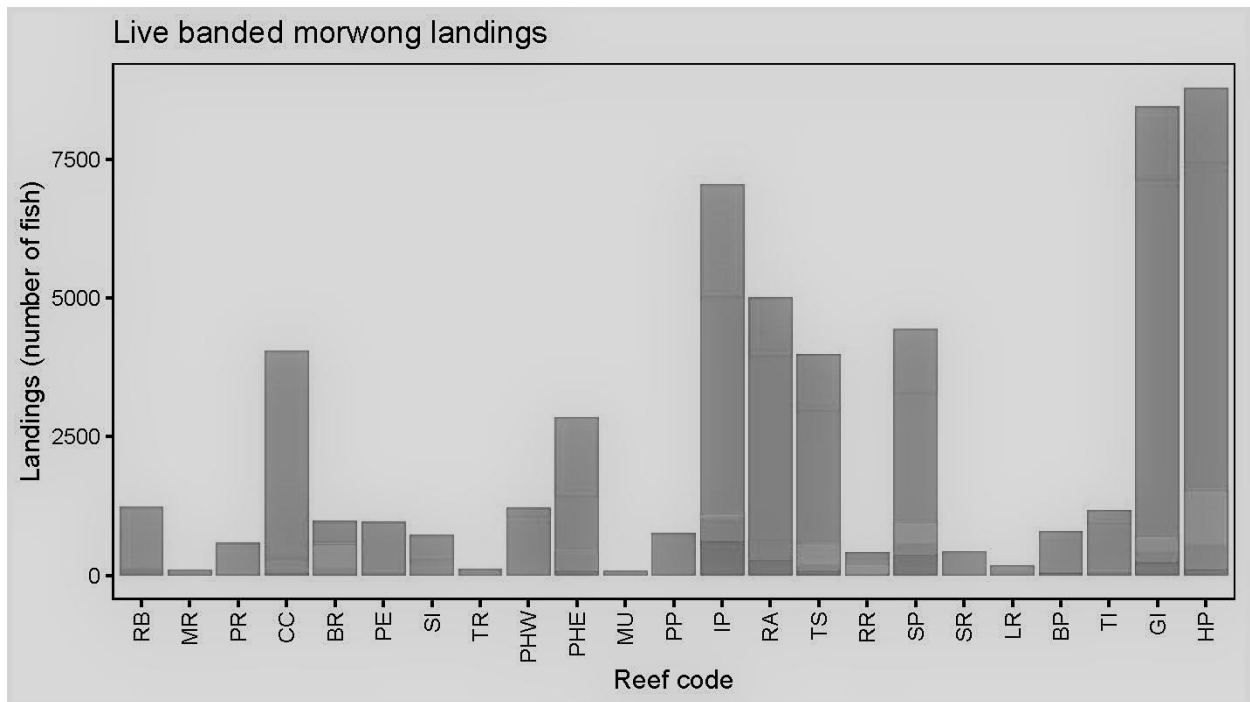


Figure 4. Total landings (number of fish) by reef code since commencement of the fishery in 2000 up until 30 June 2022.

Area codes are ordered from west (left on x-axis) to east (right on x-axis).

AREA CODES

NMB	Ninety Mile Beach
RB	Red Bluff (L. Tyers)
MR	Marlo Reef (French Narrows)
PR	Point Ricardo
CC	Cape Conran - Yeerung Reefs
BR	Beware Reef
PE	Pearl Point
SI	Sydenham Inlet

TR	Tamboon Reef
CR	Clinton Rocks
PHW	Point Hicks - West of Honeymoon Bay
PHE	Point Hicks - East of Honeymoon Bay
MU	Mueller Reef
PP	Petrel Point

IP	Island Point
RA	Big Rame

TS	The Skerries
RR	Reef between The Skerries and Sandpatch Pt
SP	SandpatchPoint
SR	Secret Reef
LR	Little Rame Head to Aerodrome
BP	Bastion Point
	Tullaberga
TI	Island
GI	Gabo Island
HP	Cape Howe & Iron Prince Reefs