NSW TOTAL ALLOWABLE FISHING COMMITTEE

OCEAN TRAP AND LINE FISHERY

- Spanner Crab

DETERMINATION FOR THE 2024/25 FISHING PERIOD

8 April 2024

Executive Summary

Preamble

The New South Wales (NSW) Total Allowable Fishing Committee (TAFC) has statutory responsibilities set out in Part 2A of the *Fisheries Management Act 1994* (the Act) to determine the Total Allowable Commercial Catch (TACC) or Total Allowable Commercial Effort (TACE) by NSW fishers holding the relevant endorsement in some commercial fisheries. Various fishing regulations under the Act also contain provisions requiring the making of fishery determinations.

The TAFC is an independent statutory body established under Schedule 2 of the Act. In making a determination on catch or effort in a commercial fishery, the TAFC must consider the ecological, economic and social issues associated with each fishery and make determinations that 'on balance' pursue the objectives of the Act.

The TAFC is not subject to the control or direction of the Minister as to any determination made. However, the Minister may direct the TAFC on the procedures to be followed and the matters to be taken into account in making a fishing determination.

A Harvest Strategy for the Spanner crab fishery was approved in August 2023. The TAFC determination is made following the decision rules in the Harvest Strategy.

This determination is for Spanner crab in the Ocean Trap and Line Fishery for the period 1 July 2024 to 30 June 2025.

Management recommendations & supporting actions

The TAFC provides the following recommendations to the Minister, NSW Fisheries and the fishing industry towards improving the management of the fishery:

1. The TAFC recommends that DPI Fisheries modify the logbook and FisherDirect portal to enable fishers to report discards of legal-size spanner crabs.

Determination

The Total Allowable Fishing Committee, pursuant to Part 2A of the *Fisheries Management Act 1994*, determines that the commercial catch of Spanner Crab in the NSW Ocean Trap and Line Fishery should be controlled and allocated through the following measure:

1. A TACC of **100 tonnes** during the fishing period 1 July 2024 to 30 June 2025.

Introduction

The NSW Ocean Trap and Line Fishery (OTL Fishery) is a share managed, multi-method, multi-species fishery. The OTL Fishery is described in Schedule 1 of the *Fisheries Management Act 1994* (the Act) as:

> a) the use of a fish trap to take fish from ocean waters;
> b) the use of a line with hooks attached to take fish from ocean waters; and
> c) the use of a spanner crab net to take spanner crabs from ocean waters that are north of a line drawn due east from Korogoro Point (Hat Head).

The overall area of the OTL Fishery extends from the NSW coastal baseline seaward to the 4,000-metre depth contour, approximately 60 to 80 nautical miles offshore.

Spanner crab is a single species fishery that occurs in ocean waters between Korogoro Point (Hat Head) and the NSW-Qld border. There is a combination of input controls (limited entry, restrictions on traps, temporal and spatial closures) and output controls (quota and minimum size limits). Access to the Spanner crab fishery is limited to those shareholders (or their nominated fishers) who hold a minimum number of shares. New shareholders need a minimum of 40 shares to be eligible for a fishing endorsement. Two management zones exist in the fishery – northern zone (northern breakwall at Yamba to NSW/Qld border) and southern zone (southern breakwall at Yamba and north of Korogoro Point) with 19 shareholders currently endorsed in the northern zone and 6 shareholders in the southern zone. The taking of female crabs is prohibited from 21 October in any year to 20 January in the following year and a minimum size limit of 9.3 cm applies to all crabs[1].

The TAFC met on-line with a number of shareholders in the Spanner crab fishery on 22 March 2024 to discuss fishery biology, catch and associated management issues. Written submissions by shareholders on the stock status for the fishery and other fishery management issues were provided to the Committee by the Department for Regional NSW (DPI Fisheries). A current stock assessment report on the fishery was also provided to the TAFC by DPI Fisheries[2].

Biological considerations

Spanner crab (*Ranina ranina*) is considered a single genetic stock extending from southern Queensland to northern NSW. The bulk of this stock and catch occurs in Queensland and there is thought to be regular southwards movement of crab larvae from Queensland into northern NSW. Settled crabs remain resident with no evidence of longshore migration between QLD and NSW, as supported by historical fishery independent surveys (FIS) in the two states, that show different trends in abundance driven by different exploitation rates in the two states.

---

[1] McKinnon, F. (2024) Ocean Trap and Line Fishery Management Report – Total Allowable catch Determination 2024-25: Spanner crab (*Ranina ranina*) 28 pp

[2] Johnson, D.D. (2024) Stock assessment report - Spanner Crab (*Ranina ranina*) 2023/24 – Ocean Trap and Line Fishery. Department for Regional NSW. DPI Fisheries, Port Stephens Fisheries Institute: 52 pp.

Recorded catches of Spanner crab by the NSW fishery increased rapidly from 149 tonnes at the start of the fishery in 1984/85 to a historical maximum of 488 tonnes in 1987/88, then decreased to 209 tonnes in 1989 before increasing again to a peak of 444 tonnes in 1994. Recorded catches then decreased to remain around 218 tonnes per year over 1999/00 – 2003/04, then decreased again to an average of 114 tonnes over 2005/06 – 2019/20, and exceeding 140 tonnes in 2013/14 and in each year over 2015/16 – 2017/18. The last four years reported landings have been below 100 tonnes, well below the TACC.

The NSW component of the Spanner crab stock is assessed annually using a number of fishery dependent and fishery-independent indicators, including commercial logbook catch per unit of effort (CPUE), fishery independent survey (FIS) CPUE and proportions of undersized crabs in FIS surveys. CPUE provides an index of abundance for the exploitable stock, while the proportion undersize provides leading indicator of recruitment into the fishery.

Effort in the fishery as measured by FisherDays has been constant over the past six years. Effort as measured by Net Lifts, has trended up from a historical low in 2016 to the second highest year on record in 2020 (by approximately 20,000 Net Lifts), but in the past two years has declined to fluctuate around the long-term average. Historically, nominal commercial CPUE increased rapidly from below 100 kg/fisher day in 1984/85 to 189 kg/fisher day in 1995/96. As effort increased to a peak in the late 1990's, CPUE declined to a low of 107 kg/fisher day in 2006/07. Commercial CPUE has tended to bounce around the long-term average. In the past four years it has been below the long-term average.

The CPUE from the FIS survey, for legal and sublegal sizes has increased to at or near the long-term average in each region. Length frequencies continue to show undersize crabs are available to enter the fishery. Pooled survey indices between QLD and NSW indicate that the stock in total is continuing to decline.

Industry and scientists continued to emphasise the possibility that the relationship between CPUE and stock may be affected by water temperature. Attempts to measure temperature and consider it in the stock assessment and CPUE standardisation are reassuring and supported, but the Committee notes that such changes to the CPUE series and subsequently the harvest strategy, are likely to progress slowly.

This is the first year of the NSW Spanner Crab Harvest Strategy. The standardised CPUE being at or below the trigger reference point of 1.6 kg/net lift with the current 2-year average hovering around 1.6kg/net lift. Under Rules 6 and 7 the prescribed 'no change to TAC' is supported by the Committee.

Economic considerations

Details of the economic characteristics of the spanner crab fishery, namely catch, price, gross value of production (GVP) are provided in the most recent management report (McKinnon 2024). Information on productivity factors directly affecting the economic performance of the fishery, namely catch, effort and catch rate for the fishery is provided in the recent assessment of Spanner Crab Stocks in NSW

(Johnson 2024). The estimated GVP of the Spanner crab fishery during the 2022/23 fishing period is approximately $1.89m. In some parts of NSW (e.g., Ballina) access by fishers to the spanner crab fishing grounds is influenced by the condition of surf on the port bars on a given day.

Most spanner crabs in the NSW fishery are sold domestically (mostly as live product) through the Sydney Fish Market (SFM). Although prices vary from year to year, based on Sydney Fish Market prices there has been a long-term price increase from $7.99 per kg in 2009/10 to $21.50 per kg in 2022/23. However, BDO EconSearch (2023) report a lower price of $17.93 per kg. This difference may be due to the inclusion of sales outside of the SFM. Prices for NSW spanner crabs are influenced by the activity and harvesting patterns of the Queensland Spanner Crab Fishery, which operates under a much higher TACC than the NSW fishery. Given the relative differences in the size of the TACC in NSW compared to Queensland, small changes in the NSW TACC are unlikely to significantly impact overall market supply of spanner crabs or price.

While information on GVP and spanner crab price in NSW is available, profitability in the fishery cannot be calculated, as there is no information on the costs of fishing. Economic information has been collected for the Queensland Spanner Crab Fishery, but it cannot be directly applied to the NSW fishery, principally due to the much longer transit times to most of the Queensland spanner crab fishing grounds. However, by way of background, for the Queensland Spanner Crab Fishery in 2018/19, total variable costs were estimated to be $101,623 per fishing business and total fixed costs were $66,558 per fishing business. Overall, the Queensland Spanner Crab Fishery generated a positive rate of return on total working capital of 4.7%. BDO EconSearch (2023) have collected information on the cost structure of the NSW Spanner Crab Fishery which reports a positive rate of return on total working capital of 2.4%. However, this is derived from businesses that report a relatively small volume of catch and as such may not be representative of the fishery in NSW as a whole.

In the 2022/23 fishing period, 170 OTL – Spanner crab northern zone shares and 40 OTL – Spanner crab southern zone shares were transferred. As of February 2024, 120 OTL – Spanner crab northern zone shares and nine OTL – Spanner crab southern zone shares have been transferred in the 2023/24 incomplete fishing period, however reliable price information for these transfers is unavailable. For the 2023/24 fishing period, 11 quota transfers were transferred totalling ~11% of the TAC. This is similar to the 2022/23 fishing period where 11 quota transfers were made totalling ~14% of the TAC. It is unclear from available information if transfers are largely from related parties with separate business entities (e.g., between family members).

As of 28 February 2024, 17 Fishing Businesses (FBs) have reported a total of 60.5 % of the 100 tonne TAC. Eight shareholders that were allocated quota have not reported any quota usage. Of the 16 FBs that reported catch of Spanner crab in the 2022/23 fishing period, five FBs took approximately 72% of the total reported catch.

This is a similar proportion to the 2021/2022 financial year, where five FBs took approximately 68% of the total reported catch.

From 2014/15, the annual Spanner crab quota has not been fully caught. The percentage of quota caught has ranged from 61.2% of the 140 tonne TACC in 2022/23 to 93.5% of the 164.1 tonne TACC in 2016/17. The 2023/24 TACC of 100 tonnes is above the catch of 85.7 tonnes in 2022/23. The reasons for the under catch of quota include availability of legal sized crab, ability to access Spanner crab grounds, product price, profitability in other fisheries for multi-endorsed fishers, and an inability of fishers to access any unused quota. Anecdotally, some fishers have reported an inability to access quota from those holding it, but not catching it. In any quota managed fishery, individual businesses have various options as to how to manage and utilise their quota holdings. In the case of the NSW Spanner crab, the available information demonstrates that a volume of quota is held, but not used by fishers or not transferred (leased) each year. Provided there is actual demand for the unused quota, this represents forgone income for those retaining quota, as they will not be generating an annual income from the asset.

Fishery management considerations

The NSW Spanner crab fishery is managed through a suite of input and output controls that include a minimum size limit, gear restrictions, spatial and temporal closures, and a TACC. The fishery has two management zones, Yamba to the Queensland Border (Northern) and Yamba to Hat Head (Southern) that extend 60-80 nm seaward (approximating the 4000m depth contour). Each zone requires a separate fishing endorsement and most of the catch is taken in the northern zone.

There is a single genetic Spanner crab stock for Queensland and NSW. The Spanner crab fishery in southern QLD is significantly larger, with a TAC in 2023/24 of 847 tonnes. The NSW fishery typically harvests <15% of the total catch and while the NSW fishery is managed separately, it relies on the southern QLD Spanner crab stock for most of its recruitment. As such, the NSW fishery is highly dependent on the stock and management settings in QLD. The TAFC continues to encourage NSW DPI Fisheries to work with QLD to harmonise the Harvest Strategy and management for this single stock, to avoid overfishing and ensure long term viability of the NSW fishery.

Catches in the NSW fishery have declined from around 150 tonnes per year in 2015/16 – 2017/18, to less than 100 tonnes per year over the past four seasons. These catches have largely followed reductions in the TACC, of which 60-75% has been harvested each year since 2018/19. Anecdotal information from industry suggests that this recurrent undercatch of the TACC is not a direct reflection of stock abundance, instead it is a result of a number of operators habitually not utilising their quota (either through fishing or leasing).

Catches of Spanner crab by the recreational and Aboriginal sectors are unknown, but are estimated to be small, based on limited qualitative evidence. IUU catch is also regarded as low risk and likely to be low in volume.

Seasonal weather conditions such as floods, storms, water temperature, ocean currents and sea conditions can impact both catch and catch rate. These matters are important when interpreting fishery dependent data (including in stock assessments) and calculating the standardised catch rate, which is used as a sustainability indicator in the fishery. Noting the increased variability in weather and climatic conditions occurring due to climate change, improved understanding of the influence of these factors is increasingly important.

In response to declining indicators of stock abundance, the TACC was reduced from 140 tonnes in 2022/23 to 100 tonnes in 2023/24. Updated indicators from fishery dependent and independent data show some stabilisation and a return of catch rates for undersized and legal sized crabs in the FIS to levels closer to the average. However, the pooled figures using data from QLD and NSW still remain below average.

A Harvest Strategy for the NSW Spanner Crab was endorsed in August 2023, which guides the TAFC's decision on a TACC for the coming season. The TAFC welcomes the finalisation of the Harvest Strategy and in accordance with Rules 6 and 7 determine that no change to the TACC is required. The TACC will therefore remain at 100 tonnes for the 2024/25 season.

Industry have advised that the decrease in the TACC in 2023 triggered an increase in the discarding of legal-size crabs and that this change in behaviour may be undermining the CPUE indicators. Noting the importance of the CPUE indicators to estimates of stock abundance, the TAFC recommends that DPI Fisheries modify the logbook and FisherDirect portal to enable fishers to report discards of legal-size spanner crabs.

Recommendation

- The TAFC recommends that DPI Fisheries modify the logbook and FisherDirect portal to enable fishers to report discards of legal-size spanner crabs.

Departmental responses regarding progress against TAFC recommendations made in 2023

1. If data are available, the TAFC recommend an investigation into environmental effects on the CPUE standardisation in the stock assessment.

With the assistance of three commercial fishers, DPI Fisheries trialled the collection of high resolution data using existing data loggers (i.e. no cost to industry) fitted to Spanner crab gear during normal fishing operations. However, the loggers proved difficult for industry members to extract data from and were only fished for a short period of time and limited data was collected. The objective of the trial was to compare surface and bottom temperatures across seasons and areas fished to potentially validate the use of available sea surface temperature in CPUE standardisations.

2. Further management dialogue between NSW and QLD is urgently required to harmonise their harvest strategies for this single stock to avoid overfishing.

The Queensland Department of Agriculture and Fisheries participated in the NSW Spanner crab HSWG to support developing collaborative arrangements. The Queensland Spanner Crab Harvest Strategy is in place until 2025, with review anticipated during 2024/25. NSW and Queensland will continue to engage on management and harvest strategy issues, including cross representation for harvest strategy working groups which is expected to continue.

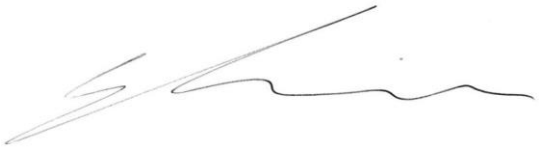
Determination

The Total Allowable Fishing Committee, pursuant to Part 2A of the *Fisheries Management Act 1994*, determines that the commercial catch of Spanner crab in the Ocean Trap and Line Fishery should be controlled and allocated through the following measure:

1. A TACC of **100 tonnes** during the fishing period 1 July 2024 to 30 June 2025.

Species	Catch Limit 2023/24 (tonnes)
Spanner crab (*Ranina ranina*)	100

Signed (for and on behalf of the TAFC)



William Zacharin
Chair, TAFC

8 April 2024

Alice McDonald – Fisheries Management member

Daryl McPhee – Natural Resource Economist member

Rich Little – Scientific member