

NSW Spanner Crab Harvest Strategy

Fact Sheet



What is a Harvest Strategy?

A harvest strategy provides a transparent decision-making framework that defines agreed management objectives for a fishery or species, and actions necessary to achieve the objectives.

Why do we need a Harvest Strategy for the NSW Spanner Crab Fishery?

Harvest strategies are a best-practice approach to fisheries management, and provide an effective way to balance ecological, economic, social, and Aboriginal cultural considerations in a single framework. The NSW Spanner Crab Harvest Strategy describes how the Spanner Crab fishery will be monitored and managed, delivering transparency and certainty for stakeholders.



What species and fisheries does the NSW Spanner Crab Harvest Strategy encompass?

The NSW Spanner Crab Harvest Strategy applies to the NSW component of the Spanner Crab (*Ranina ranina*) stock, which NSW shares with Queensland. The NSW Spanner Crab stock is predominately targeted from the Qld/NSW border south to Coffs Harbour.

How was the NSW Spanner Crab Harvest Strategy developed?

The NSW Spanner Crab Harvest Strategy was developed by an expert working group that included independent, commercial and NSW DPI Fisheries members.

Public consultation was completed during the development process, inviting submissions from key stakeholders and the community on the draft harvest strategy before final review and implementation.

The Goal of the NSW Spanner Crab Harvest Strategy is:

'To contribute, in cooperation with Queensland, to maintaining a robust and sustainable Spanner Crab stock to support a profitable commercial fishery, and social, cultural and economic benefits to the community.'

What is the policy basis for the NSW Spanner Crab Harvest Strategy?

The harvest strategy has been developed under the NSW Fisheries Harvest Strategy Policy and Guidelines to further the objectives of the *Fisheries Management Act 1994* and the *Marine Estate Management Act 2014*.

What are the core elements of the NSW Spanner Crab Harvest Strategy?

The NSW Spanner Crab Harvest Strategy includes the following core elements:

Ecologically sustainable development

Ecologically Sustainable Development risk assessment ensures major risks to, and from, the fishery are considered. The NSW Spanner Crab Harvest Strategy recognises existing risk assessments and will consider any new assessments or risks identified in the future.

Defined operational objectives

The NSW Spanner Crab Harvest Strategy describes management objectives for the NSW component of the Spanner Crab stock through its goal, strategic objectives, and operational objectives.

The objectives aim to keep the Spanner Crab stock at sustainable levels by linking fishery indicators and reference points to decision rules, which define management responses to change catch levels in accordance with changes in fishery performance.

Fishery indicators

Fishery indicators track the performance of the fishery against the harvest strategy objectives. The primary indicators for the Spanner Crab fishery are the standardised commercial catch rates (sCPUE) derived from NSW catch and effort data and the catch rates of legal sized Spanner Crabs from the NSW and Qld Fishery Independent Surveys (FIS_{LEGAL}). These indicators are considered proxies for Spanner Crab abundance (biomass) and are used as the key guides to change catch levels through the harvest strategy decision rules to maintain biomass around the target reference point.



How are Spanner Crabs caught?

Spanner Crabs are caught using nets which are commonly called dillies. Dillies consist of a flat steel frame that is generally up to 1mx1.6m with a flat net fixed to the frame. A small bait bag is attached to the net to attract crabs. The number of crabs caught per dilly is used as an indicator of biomass.

Recruitment of sub-legal crabs to the fishery is monitored by assessing the catch rates of undersize male Spanner Crabs caught in the NSW FIS (nFIS_{USM}).

Secondary indicators, including economic information and estimates of non-commercial and illegal harvest (where available), are also monitored and considered when determining sustainable harvest levels under the harvest strategy.

Reference points

Reference points (or levels) are established to provide a target, trigger and limit for fishery indicators. Target and limit reference levels are determined as proxies for desirable and undesirable biomass levels, respectively.

Reference points are defined as:

1. Target: maintain Spanner Crab biomass at a level of 48% of the unfished biomass (equivalent to sCPUE of 2.190 kg per net lift and FIS_{LEGAL} of 9.117 crabs per groundline),
2. Trigger: NSW sCPUE is equal to or below 1.600 kg per net lift,

What is Unfished Biomass?

The unfished biomass is the amount of Spanner Crab that would have been in the fishery if no fishing or harvesting had been undertaken.

What is Total Allowable Catch (TAC)?

TAC is the total catch of Spanner Crab that can be taken in each annual commercial fishing period.

3. Limit: sCPUE is equal to or below 0.800 kg per net lift (as a proxy for 20% of unfished biomass), which results in the decision rule of setting the Total Allowable Catch (TAC) at zero.

Monitoring strategy

A monitoring strategy ensures that appropriate data are available to assess fishery performance against the strategy objectives, indicators and reference points.

Assessing fishery performance

Scientific assessments monitor fishery performance by analysing available data and calculating measures of fishery indicators against the defined reference levels.

Assessments present information beyond just fishery indicators and may provide considerations on the performance of the harvest strategy and uncertainty in the available data and the analyses.

Why is fisheries data important?

Fisheries data are used to monitor how fish population sizes and composition (e.g. number of adults of each sex and new recruits) changes over time in response to a range of biological, economic, social and operational variables.

Decision rules

Decision rules specify pre-agreed management actions (primarily changing TAC) to be taken in accordance with current levels of fishery performance.

Decision rules aim to maintain biomass around target levels by changing TAC as indicators used to assess current biomass levels increase or decrease.

How do the reference points and decision rules work together?

Reference points and decision rules work together to determine the strength of management action to be undertaken as fishery performance changes against performance levels defined in the operational objectives of the harvest strategy (See Figure 1).

The decision rules determine changes to TAC, with the strength of change determined by how far above or below current fishery performance is in relation to the indicator reference levels.

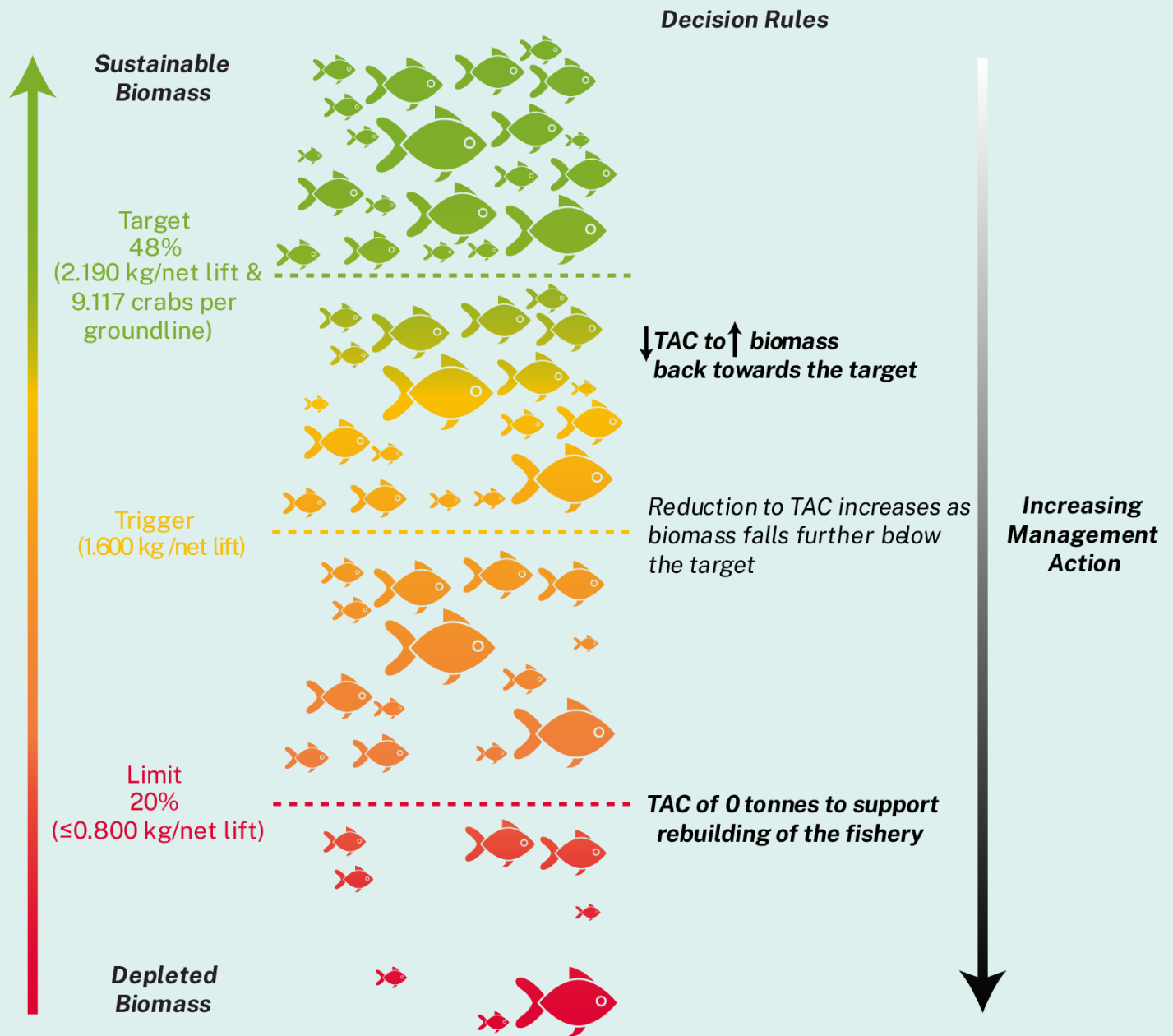
Changes to TAC aim to ensure that fishery performance will be maintained around the target reference point, hence maintaining Spanner Crab biomass at the desired level.

TAC will be reduced (to reduce catch and increase biomass) if indicators are below target reference levels, and may increase if indicators are above target levels (i.e., allow increased catch).

Should indicators fall below the limit reference point due to fishing or other factors, the TAC will be set at 0 to support the rebuilding of the fishery. Fisheries surveys may be completed to inform when the TAC should increase.



Figure 1: Harvest Strategy reference points and decision rule summary



Where can I find more information on Harvest Strategies?

You can find more information about this and other Harvest Strategies on the DPI website using the web address below.

www.dpi.nsw.gov.au/fishing/harvest-strategies

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