



TROPICAL ROCK LOBSTER HARVEST STRATEGY

An Overview

The Torres Strait Tropical Rock Lobster (TRL) Fishery is the second most valuable commercial fishery in the Torres Strait and is important for the traditional way of life and livelihoods of traditional inhabitants. The Fishery has long-term fishery survey data since 1973, logbook data from the TVH sector since 1994 and fishery wide catch data through the fish receiver system from 2017. Whilst the TRL Fishery is well understood, the TRL stock is highly variable. This is understood to be driven in part by environmental conditions. As a result, there is potential for large variations in the amount of TRL that can be sustainably taken from year to year.

The draft TRL Harvest Strategy takes into account what is known about the TRL stock and sets out the management rules to achieve agreed objectives for the TRL Fishery. The draft TRL Harvest Strategy, will provide stakeholders with certainty about how the Fishery will be managed.

Objectives

The objectives of the draft TRL Harvest Strategy are:

- a. to maintain the size of the TRL stock (on average), or return the stock to, 65 per cent of the original unfished size of the TRL spawning stock (TRL of breeding age) in 1973 (start of the Fishery).
- b. to maintain the size of the TRL stock above a lower limit of 32 per cent of the original size of the TRL spawning stock in 1973.
- c. if the size of the TRL stock falls below the lower limit two years in a row, stock rebuilding strategies are to be implemented.

Reference points

Harvest strategies will generally be based on *target* and *limit reference points*. These are generally based on the amount of fish (known as *biomass*) or the amount of fish caught (known as *fishing mortality*). Target reference points are the amount of fish that is to be kept in the water (B_{TARG}) or the amount of fish to be caught (F_{TARG}). Limit reference points (B_{LIM} and F_{LIM}) are situations to be avoided because they pose a risk to the sustainability of a stock that is unacceptably high (overfishing is occurring).

The draft TRL Harvest Strategy reference points are:

- a. $B_0 = B_{1973}$ – original unfished size of the TRL spawning stock (TRL of breeding age) in 1973 (start of the Fishery), as estimated by the stock assessment model.
- b. $B_{TARG} = 0.65 B_0$ – 65 per cent of the original unfished size of the TRL spawning stock in 1973, to be kept in the water.
- c. $B_{LIM} = 0.32 B_0$ – TRL stock levels below 32 per cent of the original unfished size of the TRL spawning stock in 1973, is to be avoided.



- d. $F_{TARG} = 0.15$ – the amount of fish to be caught estimated to maintain the TRL stock at the target.

The reference points in the draft TRL Harvest Strategy are more cautious than levels recommended in the Commonwealth Harvest Strategy Policy. This is to recognise that the resource is shared and important for the traditional way of life and livelihoods of traditional inhabitants and is biologically and economically acceptable.

Setting the total allowable catch

The draft TRL Harvest Strategy uses an empirical (data-based) harvest control rule (eHCR) to calculate a recommended biological catch (RBC) each fishing season. This is the amount of TRL that can be sustainably caught. A total allowable catch (TAC) is then calculated by taking into account any other sources of mortality (traditional and recreational catch).

The eHCR uses the last five years of data to calculate an RBC. This includes data collected through surveys, catch and effort data from the TVH and TIB sectors, and total catch from all sectors of the TRL Fishery. Extensive testing has shown that over the long-term, the eHCR should maintain the stock around the target level.

Decision rules

Rule 1: a *maximum catch limit* of 1,000 tonnes applies. This cap will be reviewed and tested three years after being implemented.

Rule 2: If the survey shows the number of recruiting lobsters (age 1+) has fallen below a value that is lower than the lowest recorded value (1.25), then the stock assessment must be undertaken for the next year.

Rule 3: If the eHCR shows that the size of the TRL stock has fallen below the lower limit level (B_{LIM}), then the stock assessment must be undertaken in March. If this reoccurs the following year, then the stock assessment must be undertaken in December (of the second year).

Rule 4: If the size of the TRL stock has fallen below the lower limit level (B_{LIM}) for two consecutive years as determined by stock assessments in those two years, then the TRL Fishery will be closed to commercial fishing. Testing of the eHCR has shown that it is extremely unlikely (<1%) the TRL Fishery to be closed under this rule based on its current performance.

Rule 5: Following a closure of the TRL Fishery under Rule 4, surveys are mandatory. The TRL Fishery can only be re-opened when a stock assessment determines the size of the TRL stock to be above the lower limit level (B_{LIM}).

In addition, the stock assessment will be undertaken every 3 years to check the eHCR is performing to achieve the harvest strategy objectives.