

Management advice Spanner crab fishery 2020

Harvest strategy overview

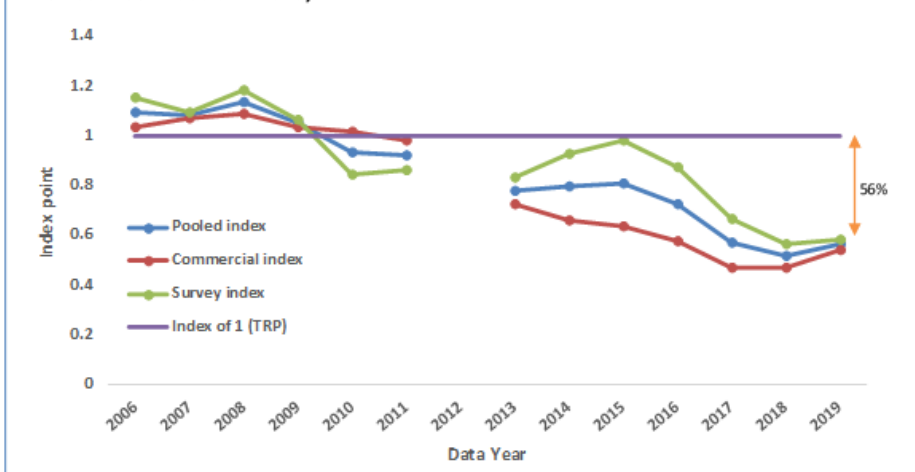
The spanner crab fishery is one of the first fisheries to have an approved harvest strategy under the *Queensland Sustainable Fisheries Strategy: 2017–2027*. The harvest strategy sets out decision rules to determine appropriate levels of harvest based on the status of spanner crab stocks.

Because there is no spanner crab stock assessment, commercial fisher catch per unit effort (CPUE) and fishery independent survey (FIS) data are used to infer the status of stocks. The decision rules are set based on evaluation testing and modelling, and are consistent with the approach taken in many other fisheries for which a stock assessment is not possible.

Harvest strategy decision rule 1.1 states that the total allowable commercial catch (TACC) is adjusted up when the pooled index has reached the target reference point of one and is above the previous year index (positive trend).

Likewise, rule 2.1 states that the TACC is adjusted down when the pooled index is below the target reference point of one and is trending below the previous year's index.

Figure 1. Performance of the commercial index, survey index and pooled index over time. The purple line represents the target reference point (95% of the survey and commercial index between 2006 and 2010).



Harvest strategy targets

The targets in the harvest strategy are based on data from the reference period of 2006 to 2010. The harvest strategy aims to return spanner crab biomass to the level experienced during this reference period. This period represents a time when spanner crab stocks were assumed to be at 60% biomass, meeting the target in the *Queensland Sustainable Fisheries Strategy: 2017–2027*.

Spanner crab targets (2019 data)	FIS	CPUE
95% of 2006-2010 average catch rate	10.4918	1.3359

Performance indicators

The harvest strategy uses averages of the CPUE and FIS from two years, and converts them into the 'stock index' (by dividing them by the respective target), which is then averaged into a 'pooled index'. This is used to inform the TACC in decision years.

	FIS	CPUE
2017	6.3171	0.5928
2018	5.5394	0.6551
2019	6.6732	0.7957
2017–18 average	5.92824	0.62396
2018–19 average	6.10632	0.72543
2017–18 stock index	0.56503	0.46708
2018–19 stock index	0.58201	0.54304
2019 pooled index	0.516055472	
2020 pooled index	0.562524171	

In 2019, the pooled index was 0.56 (average of the commercial index 0.54 and the survey index 0.58). A pooled index of 0.56 means that the fishery is at **56% of its target**.

Indicator one: commercial index

The standardised commercial catch rate (sCPUE) increased from 0.65 to 0.79 kg per dilly lift in 2019. The catch rate standardisation takes into account all regions, seasons and other effects (like the number of active fishers and the number of dillies used by each operator), and is considered a reliable indicator of the status of spanner crab stocks.

While the trend is positive, it has not yet reached the target reference point, and at 0.79 is still closer to the limit reference point (0.5kg per dilly lift) than the target.

Indicator two: survey index

The standardised fisheries independent survey (sFIS) is the longest running fishery independent data set for a Queensland commercial fishery. The survey has run every year since 2000 (except 2004 and 2012).

The sFIS increased from 5.56 to 6.67 legal-sized crabs per ground line in 2019. The sFIS trend is positive, but is still a way off the target reference point.

Figure 2. Performance of the sCPUE over time compared to the target reference (green line) and limit reference (red line).

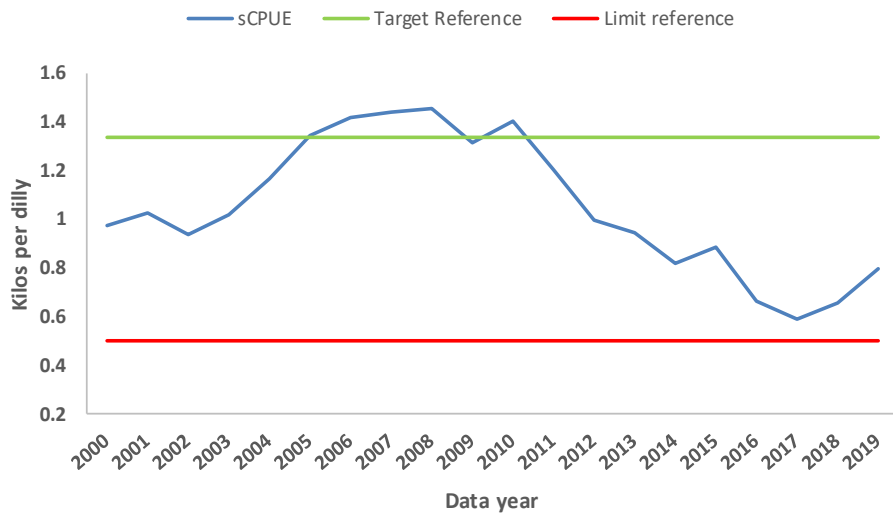
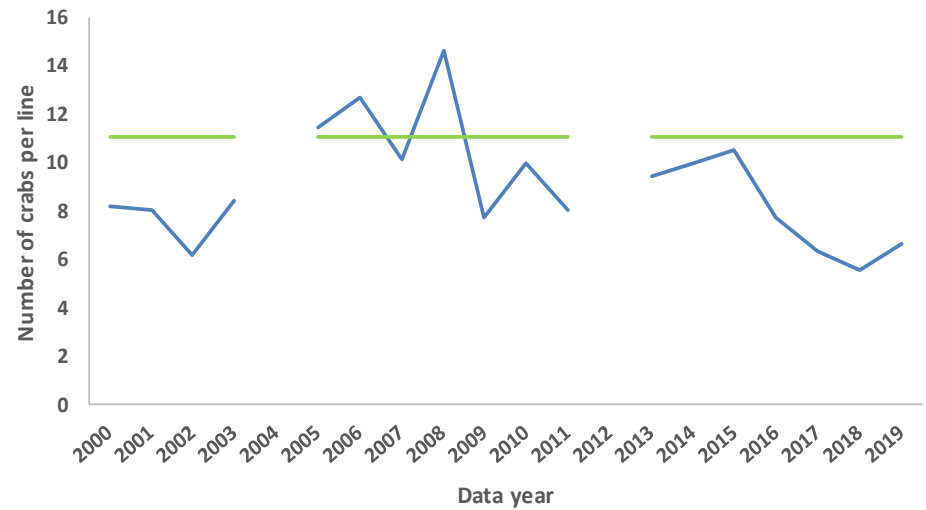


Figure 3. Performance of the sFIS over time compared to the target reference (green line)



Setting the TACC

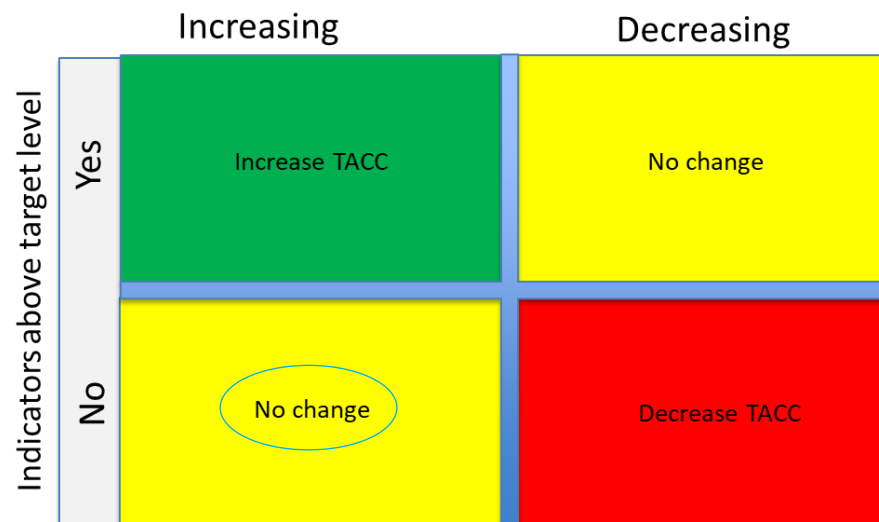
Assessing the fishery performance against the harvest strategy decision rules informs the TACC for the 2020–21 season. The following table provides a summary of the assessment.

Decision rules to set the TACC

Rule	Description	Assessment
Rule 3.1	The TACC will reduce to zero if the average sCPUE is less than 0.5 kg per dilly lift	X
Rule 1.1	The TACC is increased when the pooled index is greater than 1 and the current index is above the previous year index	X
Rule 2.1	The TACC is decreased when the pooled index is less than 1 and the current index is below the previous year index	X
Rule 4.1	TACC remains unchanged if rules 1.1, 2.1 and 3.1 are not met	✓

Review triggers

Rule	Description	Assessment
Rule 5.1	If the pooled index has either increased or decreased consecutively over each of the three most recent years and no change to the TACC has occurred, the TACC for the forthcoming year must be adjusted by 50 tonnes to reflect the recent trend. OR	X
Rule 5.2	If the commercial index in any monitoring region is 40% or more below the previous year's index, it must be determined why the decline occurred and whether further management intervention is required to reduce the risk of localised depletion. OR	X
Rule 5.3	If any new information becomes available indicating that the assessment and TACC-setting arrangements are not consistent with the sustainable management of the fishery, the decision rules must be reviewed and, if appropriate, the reference points must be adjusted.	X



Note: For more information on how the decision rules work in the spanner crab fishery harvest strategy, see the diagram on the following page with the applicable decision rules for 2020 outlined in green.

More information

📞 13 25 23

✉️ fisheriesmanagers@daf.qld.gov.au

🌐 fisheries.qld.gov.au

Spanner crab harvest strategy decision rules

