

ADVICE TO: PIRSA FISHERIES AND AQUACULTURE (PROF. GAVIN BEGG – EXECUTIVE DIRECTOR)

FROM: DR. LACHLAN MCLEAY (SARDI AQUATIC SCIENCES)

SUBJECT: GIANT CRAB FISHERY - MAXIMUM QUOTA CARRY-OVER

DATE: 24 APRIL 2020

KEY ISSUES

- The outbreak of COVID-19 has resulted in recent declines in export demand for Giant Crab supplied by the Giant Crab Fishery (GCF).
- PIRSA Fisheries and Aquaculture have requested advice on the potential impacts to the sustainability of the Giant Crab stock in carrying-over uncaught quota from 2019/20 to 2020/21.
- In 2019/20, the Total Allowable Commercial Catch (TACC) (quota) was 22.1 tonnes (t). Of this TACC, 95% (21 t) was allocated to quota holders within the Southern Zone (SZ; 8.3 t) and Northern Zone (NZ; 12.7 t) management areas.
- As of 22 April 2020, the maximum amount of uncaught quota in the GCF that could be carried over to 2020/21 is 7.8 tonnes (SZ: 4.7t, NZ: 3.1 t).
- Since 2013/14, the primary performance indicator, 5-year average commercial CPUE, has been stable above the Trigger Reference Point and at 81.2–90.1% of the Target Reference Point, and the status of the Giant Crab stock has been classified as 'sustainable' since 2016/17.
- Giant Crab are a long-lived species with slow growth and low levels of natural mortality. If uncaught quota is carried over in 2020/21, stock biomass reduction due to natural mortality is likely to be offset by growth of uncaught male crabs, and greater egg production by uncaught female crabs.
- The likely level of risk to Giant Crab stock sustainability when considering a TACC carry-over to 2020/21 is considered to be 'low' under any potential percentage TACC carry-over.

BACKGROUND

The Giant Crab Fishery (GCF) is comprised of licence holders within the Miscellaneous Fishery and South Australian Rock Lobster Fishery. This fishery is managed across two zones, the Southern Zone and Northern Zone, which are consistent with those designated for the South Australian Rock Lobster Fishery (SARLF).

In 2019/20, the Total Allowable Commercial Catch (TACC) (quota) was 22.1 tonnes (t). Of this TACC, 95% (21 t) was allocated to GCF quota holders within the Southern Zone (SZ; 8.3 t) and Northern Zone (NZ; 12.7 t), and 5% (1.1 t) was allocated for Giant Crab by-product in the SARLF (PIRSA 2018).

The COVID-19 pandemic has resulted in declines in Giant Crab exports from Australia to Asia. PIRSA Fisheries and Aquaculture have requested advice on the potential impacts to the sustainability of the Giant Crab stock in carrying-over some, or all, of the uncaught quota from

2019/20 to 2020/21. In particular, advice on the maximum amount of uncaught quota that could be carried over in each management zone is requested.

RESULTS/DISCUSSION

As of 22 April 2020, for the SZ, 3.6 t had been harvested (43% of the 8.3 t TACC), with 4.7 t of the TACC remaining uncaught. For the NZ by the same date, 9.6 t had been harvested (76% of the 12.7 t TACC), with 3.1 t of the TACC remaining uncaught.

The most recent and complete stock status information for Giant Crab is McLeay (2020). Due to the low number of dedicated Giant Crab fishers in the fishery (e.g. 1 licence in the Miscellaneous Fishery since 2013/14), the fishery has a recent history of not reaching its TACC, with catches comprising 73–83% of the TACC in each fishing season since 2013/14 (Figure 1).

Since 2013/14, the primary performance indicator, 5-year average commercial CPUE, has been relatively stable, above the Trigger Reference Point, and at 81.2–90.1% of the Target Reference Point ($RP_{\text{targ}} = 2.60$ kg/potlift) (Figure 2). Consequently, the status of the Giant Crab stock has been classified as 'sustainable' since 2016/17.

Giant Crab are a long-lived species with slow growth and low estimated levels (5%) of annual natural mortality (Gardner et al. 2007). If uncaught quota is carried over in 2020/21, it is reasonable to assume that stock biomass reduction due to natural mortality would be offset by growth of uncaught male crabs, and greater egg production by uncaught female crabs.

The likely level of risk to Giant Crab stock sustainability when considering a 'one-off' TACC carry-over in 2020/21 is considered to be 'low' under any potential percentage TACC carry-over.

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REFERENCES

Gardner, C., M. Haddon, D. Hobday, and R. McGarvey (2007). Development of the tools for long term management of the giant crab resource: data collection methodology, stock assessment and harvest strategy evaluation. Hobart, Tasmanian Aquaculture and Fisheries Institute, University of Tasmania, FRDC Final Report No. 2001/042: 151pp.

McLeay, L. (2020). Stock Status Report for the South Australian Giant Crab (*Pseudocarcinus gigas*) Fishery in 2018/19. Fishery Status Report to PIRSA Fisheries and Aquaculture. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication No. F2011/000332-9. SARDI Research Report Series No. 1050. 19pp.

PIRSA (2018). Management Policy for the South Australian Commercial Giant Crab Fishery. Primary Industries and Regions South Australia. Adelaide, Australia.

APPENDIX

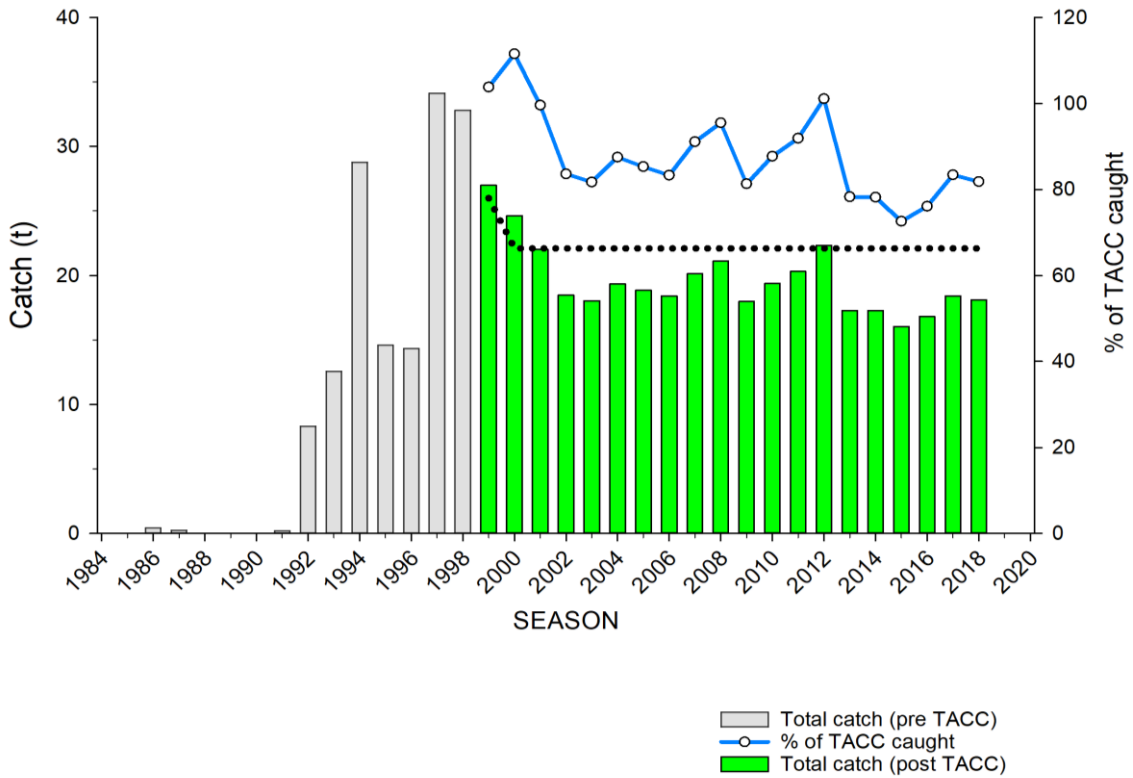


Figure 1. Total catch of Giant Crab and percentage of Giant Crab TACC caught in the GCF between 1986 and 2018.

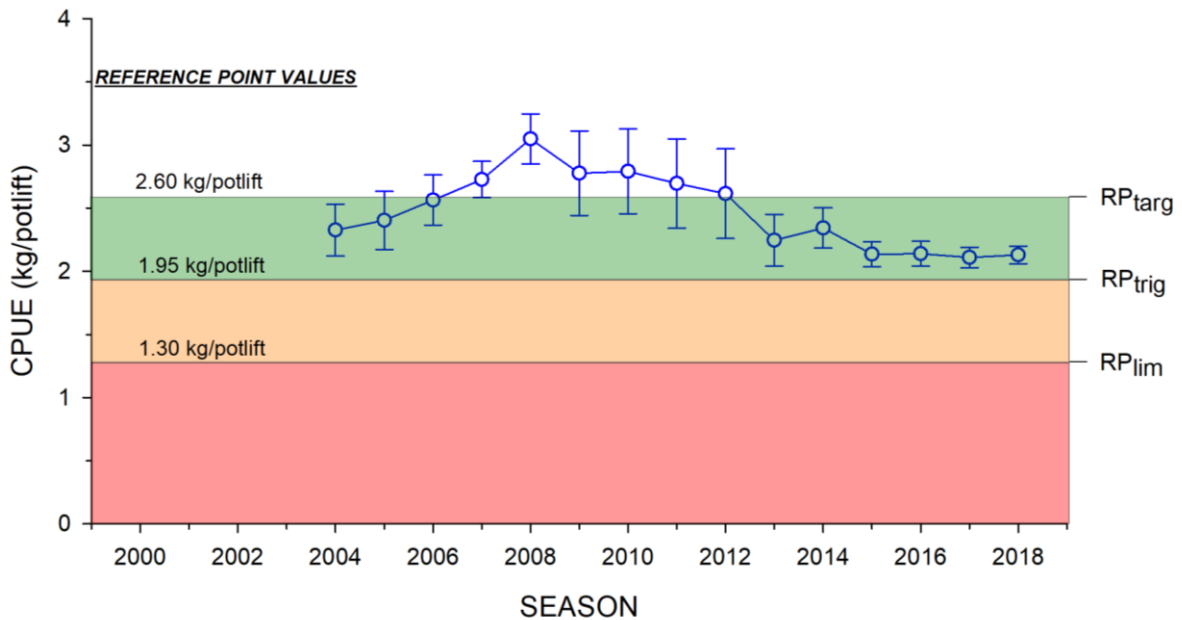


Figure 2. Commercial CPUE of legal-size Giant Crab caught in the GCF between 2004 and 2018. Values represent 5-year moving average \pm SE. Target Reference Point = RP_{targ} ; Trigger Reference Point = RP_{trig} ; Limit Reference Point = RP_{lim} .