

# Discussion draft

## Harvest Strategy Attachment 1: Blue swimmer crab total allowable catch

- A complex stock assessment for the blue swimmer crab fishery was completed in 2020. A copy of the stock assessment is available here: <http://era.daf.qld.gov.au/id/eprint/7427/>
- The 2020 stock assessment used a length-structured model with a monthly time step. Data inputs included total harvests, standardised catch rates, and carapace width size compositions. The data inputs were structured for Inshore Region (smaller crab) and Offshore Region (larger crab) size selectivity.
- A previous stock assessment for the southern component of the north eastern Australian (Queensland) biological stock was published in 2015. Results estimated exploitable (legal-sized male crab) biomass between 25 and 50% of virgin unfished exploitable biomass.
- Model analyses from the 2020 stock assessment suggested the exploitable biomass fell to around **33%** of unfished biomass in 2018–19. Maximum sustainable yield (MSY) was estimated at 631–843 t per year and the yield consistent with maintaining a biomass ratio of 60% was estimated at 415–557 t.
- Using the hockey stick harvest control rule, the 2020 stock assessment recommended a TAC (all sectors) of 129 t will rebuild exploitable biomass to the Sustainable Fisheries Strategy target levels of 60% unfished biomass within 3 to 4 years. However, this would require significant reductions for all sectors (commercial pot, commercial trawl, and recreational).
- It is proposed to cap the maximum allowable harvest to 350t (all sectors) for the first three years of the harvest strategy as stock assessment modelling suggests that this would rebuild stock to the 60% biomass but over a longer timeframe (around 10 years). Given existing management controls in place for blue swimmer crabs (minimum legal size limit and protection of females), using a higher allowable harvest than recommended still allows the stock to rebuild, without the significant social and economic impacts.
- The trawl fishery catch target is based on maintaining around 10% of the total commercial harvest (i.e. commercial pot and commercial trawl). This range will constrain the trawl harvest to their historical harvest levels of between 7 to 12% since 2000.
- The recreational proportion of the TAC has been calculated at 15% using an evidence based approach by using harvest from the 2013 state wide recreational phone survey against the most recent commercial harvest in 2018. The recreational proportion will be used for the first 3 years of the harvest strategy until an additional stock assessment becomes available in 2020.
- The combined commercial pot, trawl, and recreational total allowable catch equates to 350 t.

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Species	Current exploitable biomass (relative to unfished) 2018–2019	5 Year average (2014 - 2018)	2018 catch	Proposed TACCs	Current rec limit
Blue swimmer crab	33%	Comm pot: 339t Comm trawl: 38t Pot, trawl, rec: 416t (rec estimate used 36t all years from 2013 survey)	Comm pot: 189t Comm trawl: 26t Rec: 36t (2013 rec survey)	Comm pot: 263t Comm trawl: 35t (10% of total commercial catch) Rec: 52t (15% of total catch)	20