

Redspot King Prawn (2020)

Melicertus longistylus



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Commonwealth	Northern Australia	Undefined	Catch
Western Australia	Western Australia	Negligible	
Queensland	East Coast Queensland	Sustainable	Catch, effort, biomass

STOCK STRUCTURE

The Redspot King Prawn has an Indo-West Pacific and tropical Australian distribution from Exmouth Gulf in the west across northern Australia to the Gulf of Carpentaria and Torres Strait and down the east coast to approximately 22°S.

Biological Stock Structure of Redspot King Prawn is uncertain. The Northern Australia stock is fished by the Northern Prawn Fishery (Commonwealth) and the Torres Strait Prawn Fishery. The East Coast Queensland stock is taken along the coast of Queensland by the East Coast Otter Trawl Fishery. The Western Australia stock is taken in very low quantities in the Exmouth and North Coast prawn fisheries.

Here, assessment of stock status is presented at the management unit level—East Coast Queensland (Queensland), Northern Australia (Commonwealth); and the jurisdictional level—Western Australia.

STOCK STATUS

East Coast Queensland	<p>The Redspot King Prawn is generally a non-target species in the Queensland East Coast Otter Trawl Fishery. Catches have been in long term decline since their peak in 2003, while nominal catch rates in the overall fishery have been variable. Catch rates from high catch grids have been steady since 2007–08. In the southern region of the fishery, where >90 per cent of the Redspot King Prawn harvest is caught, nominal catch rates have been decreasing since 2016–17 although catch rates have been highly variable [QFISH 2020]. Catches and catch rates in the northern region >16° S are in decline and equal to the historical low. There is little focus on Redspot King Prawns in the northern region. Biophysical modelling research estimates found that since the introduction of additional fishing closures in 2004, a large proportion of the Red Spot King Prawn biomass (62 per cent) within the Great Barrier Reef Marine Park (GBRMP) has become unavailable to trawling. The most recent assessment estimated Redspot King Prawn maximum sustainable yield (MSY) based on 1988–2013 data for the southern region to be 716 tonnes [t] [Wang et al. 2015]. Annual catches have not reached this level (maximum 482 t). The above evidence indicates that the biomass of this stock is unlikely to be depleted and that recruitment is unlikely to be impaired.</p> <p>Effort for Redspot King Prawn has declined since 2003 [QFISH 2020]. The most recent stock assessment (2015) estimated the south region EffortMSY at 19 530 boat-days. Effort from 2003–2019 in the south region continues to be very much below EMSY (2 206–6429 days). The 2015 stock assessment did not estimate EMSY for the north region as only minor catches occurred from 1988–2013 [Wang et al. 2015]. An ecological risk assessment of the ECOTF found that there was a low risk of Redspot King Prawn being overfished at 2009 effort levels [Pears et al. 2012]. Since 2009, total effort for Redspot King Prawns (measured as nominal effort days) in the GBRMP has fallen by 56 per cent, and in high abundance grids by 6 per cent (south region) and 44 per cent (north region). The above evidence indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.</p> <p>On the basis of the evidence provided above, Redspot King Prawn in East Coast Queensland is classified as a sustainable stock.</p>
Northern Australia	<p>Redspot King Prawns are a minor portion of catches in the Northern Prawn Fishery (NPF) and the Torres Strait Prawn Fishery (TSPF). No catch has been recorded in the NPF since 2015. Annual catches from 2010 to 2015 averaged 0.6 t. Catch in the TSPF has been variable over the last decade (2010–19), ranging from 0.2 t to 5.4 t (average 1.5 t per year). There is some uncertainty associated with the species of king prawn being caught in the TSPF. There is catch reported as Western King Prawn and also under a grouped 'king prawn' code, some of which may actually be Redspot King Prawn. Reported catch of Redspot King Prawn in the TSPF was 5.4 t in 2019, up from 0.2 t in 2018.</p> <p>There are no jurisdictional fisheries that target this species in the Northern Territory and is not caught by any fishing sector.</p> <p>No formal stock assessments have been carried out in either fishery. On the basis of the evidence provided above, the Northern assessment unit of the Redspot King Prawn is classified as undefined.</p>
Western Australia	<p>Stock status for the Western Australian jurisdictional stock is reported as Negligible due to no catches being reported historically and because the stock has generally not been subject to targeted fishing. Redspot King Prawn is caught in very low quantities along with Western King Prawn primarily in the Exmouth Gulf Prawn and North Coast Prawn fisheries in Western Australia. The two species are not separated in commercial catches. Fishery independent prawn catch composition information from Exmouth Gulf indicates that the contribution of the Redspot King Prawn to the total catch of all king prawn species is less</p>

than 1 per cent. Fishing is unlikely to be having a negative impact on the stock.

BIOLOGY

Redspot King Prawn biology [Holthuis 1980, Dredge 1990, Kailola et al. 1993]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Redspot King Prawn	2 years, 5.13 cm CL (female), 4.23 cm CL (male)	Female at 8 months, 3.3 cm CL; male time and length of maturity uncertain

DISTRIBUTION



Distribution of reported Commercial Catch of Redspot King Prawn.

TABLES

Fishing methods	Commonwealth	Queensland
Commercial		
Otter Trawl	✓	✓
Recreational		
Cast Net		✓

Management Methods	Commonwealth	Queensland
Commercial		
Area closures	✓	

Effort limits	✓	✓
Fishery spatial closures	✓	
Gear restrictions	✓	✓
Limited entry (licensing)	✓	✓
Marine park closures		✓
Seasonal closures	✓	
Spatial closures		✓
Temporal closures		✓
Vessel restrictions		✓
Recreational		
Possession limit		✓

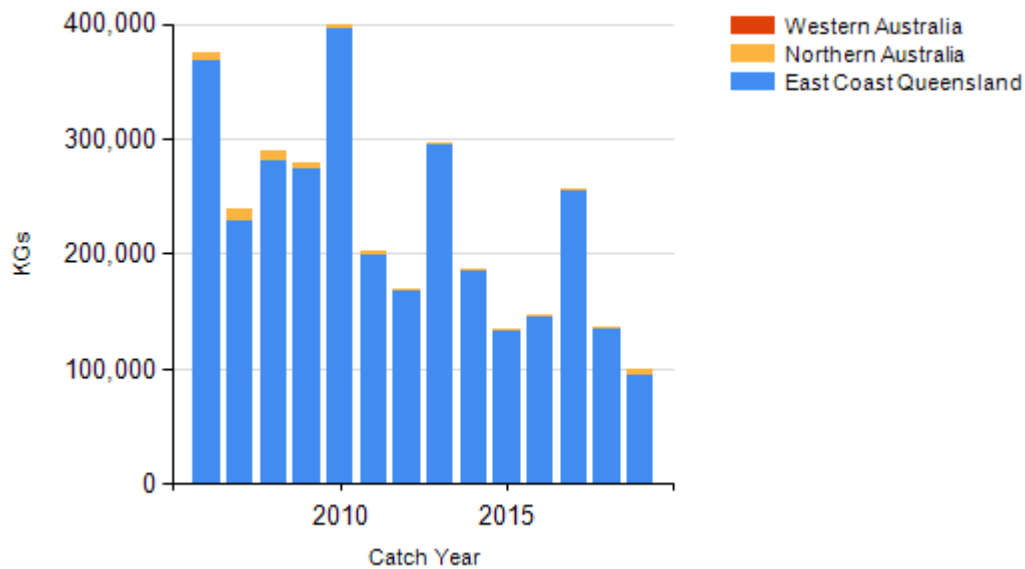
Catch			
	Commonwealth	Queensland	Western Australia
Commercial	5.473 t	94.8165 t	0 t
Indigenous		Unknown	
Recreational		Unknown	

Commonwealth – Indigenous (management methods) The Commonwealth Government does not manage non-commercial Indigenous fishing (with the exception of the Torres Strait). In general, non-commercial Indigenous fishing in Commonwealth waters is managed by the states or territory immediately adjacent to those waters. In the Torres Strait both commercial and non-commercial Indigenous fishing is managed by the Torres Strait Protected Zone Joint Authority (PZJA) through the Australian Fisheries Management Authority (Commonwealth), Department of Agriculture Fisheries and Forestry (Queensland) and the Torres Strait Regional Authority. The PZJA also manages non-Indigenous commercial fishing in the Torres Strait.

Commonwealth – Recreational (fishing methods) The Commonwealth Government does not manage recreational fishing. Recreational fishing in Commonwealth waters is managed by the states or territory immediately adjacent to those waters, under their management regulations.

Queensland – Indigenous (management methods) for more information see <https://www.daf.qld.gov.au/business-priorities/fisheries/traditional-fishing>

CATCH CHART



Commercial catch of Redspot King Prawn - note confidential catch not shown

References	
QFISH 2020	QFish, Department of Agriculture and Fisheries, www.qfish.gov.au
Wang et al. 2015	Wang, N, Wang, Y-G, Courtney, AJ & O'Neill, M, 2015, Application of a weekly delay-difference model to commercial catch and effort data for tiger prawns in the Queensland East Coast Trawl Fishery, PhD Thesis, University of Queensland and Queensland Government Department of Agriculture, Fisheries and Forestry.
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Dredge 1990	Dredge, MCL, 1990, Movement, Growth and Natural Mortality Rate of the Red Spot King Prawn, <i>Penaeus longistylus</i> Kubo , from the Great Barrier Reef Lagoon. <i>Aust. J. Mar. Freshwater Res.</i> , 41, 399-410
Holthuis 1980	Holthuis, L.B. 1980 <i>FAO Species Catalogue. Vol. 1. Shrimps and prawns of the world. An annotated catalogue of species of interest to fisheries. FAO Fish. Synop. 125(1):271 p. Rome: FAO.</i>
Kailola et al. 1993	Kailola, PJ, Williams, MJ, Stewart, PC, Reichelt, RE, McNee, A & Grieve, C, 1993, <i>Australian Fisheries Resources. Bureau of Resource Sciences and the Fisheries Research and Development Corporation.</i>