

# Crystal Crab (2023)

*Chaceon albus*



**Simon de Lestang:** Department of Primary Industries and Regional Development, Western Australia

## STOCK STATUS OVERVIEW

Jurisdiction	Stock	Stock status	Indicators
Western Australia	West Coast	Sustainable	Catch, catch rate, spatial extent

## STOCK STRUCTURE

There is currently no information on the stock structure of crystal crab. A larval duration of 39 days reported for a congeneric Atlantic Ocean species [Perkins 1973] and preliminary movement information [Melville-Smith et al. 2007] suggest little potential mixing. However, as the majority of the catch (> 95%) comes from a small geographic area, it is considered a single stock for the purpose of this assessment. A research project has commenced to examine the genetic stock structure of crystal crabs from the west and south coasts of Western Australia. Here the assessment is presented at the biological stock level—West Coast (Western Australia).

## STOCK STATUS

**West Coast** The stock status for Crystal Crab (*Chaceon albus*) is based on a weight of evidence approach using a range of empirical and modelled estimates of catch, catch rate and biomass in both the West Coast Deep Sea Crab Managed Fishery (WCDSC) and South Coast Crustacean Managed Fishery (SCC). Annual assessments for the WCDSC are have been reviewed by the Marine Stewardship Council (MSC) since 2015.

Catches of Crystal Crab in both of fisheries are limited by individual transferrable quotas. For the WCDSC, an integrated population model has been developed that estimates percentage depletion from virgin levels for the Crystal Crab across the 10 latitudinal bands that span the active fishery. The combination of

STATUS OF AUSTRALIAN FISH STOCKS REPORT  
Crystal Crab (2023)

latitudinal assessments indicate that the mature biomass is above the provisional target, 60% of virgin biomass (B60) level with a high degree of certainty. The west coast component of the stock is certified to the Marine Stewardship Council (MSC) and has been assessed as sustainable. In the SCC Crystal Crab is assessed on a zonal basis, with most of the catch being taken from Zone 2. This component of the stock is assessed using a biomass dynamics model which indicates that it is likely that the level of stock depletion is adequate, noting that the stock has improved due to sustained low catches of < 5 t over the last four seasons. Projected catches of crystal crab in Zone 2 at current TACs are considered sustainable in the long-term based on current model predictions.

The above evidence also indicates that the current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

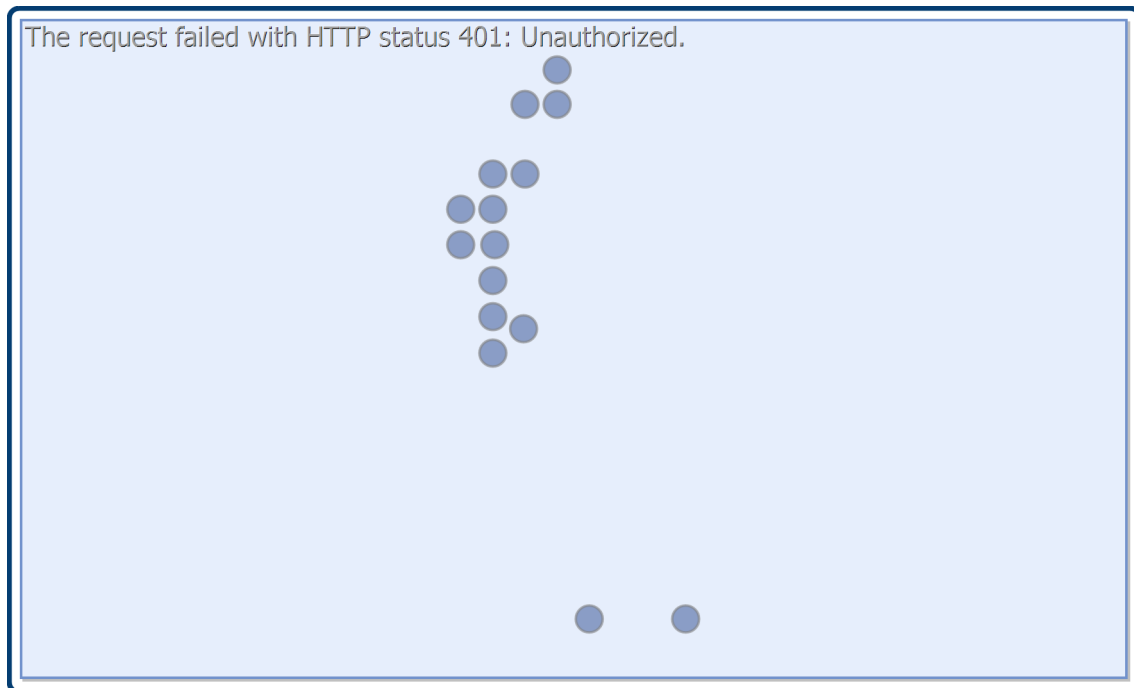
On the basis of the evidence provided above, the West Coast Crystal Crab is classified as a **sustainable stock**.

**BIOLOGY**

[Smith et al. 2004; Melville-Smith et al. 2007]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Crystal Crab	25–30 years	90.5 mm carapace length (females)

**DISTRIBUTION**



Distribution of reported commercial catch of Crystal Crab

**TABLES**

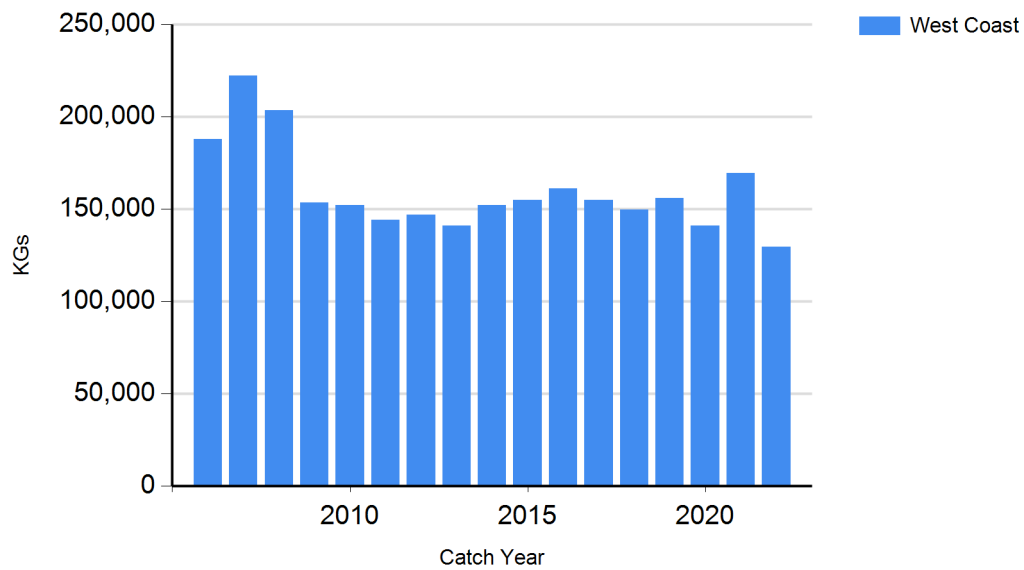
<b>Fishing methods</b>	
	<b>Western Australia</b>
<b>Commercial</b>	
Octopus Traps And Pots	✓
Traps and Pots	✓

<b>Management Methods</b>	
	<b>Western Australia</b>
<b>Commercial</b>	
Area closures	✓
Egg bearing females protected	✓
Gear restrictions	✓
Limited entry	✓
Size limit	✓
Total allowable catch	✓

<b>Catch</b>	
	<b>Western Australia</b>
<b>Commercial</b>	129.565 t

**CATCH CHART**

STATUS OF AUSTRALIAN FISH STOCKS REPORT  
Crystal Crab (2023)



Commercial catch of Crystal Crab

**References**

Perkins (1973)	Perkins, H.C., 1973. The larval stages of the deep sea red crab, <i>Geryon quinque-dens</i> Smith, reared under laboratory conditions (Decapoda: Brachy-rhyncha). <i>Fisheries Bulletin</i> , 71:69-82.
Melville-Smith et al. [2007]	Melville-Smith, R., Norton, S.M.G. and Thomson, A.W. (2007). Biological and Fisheries Data for Managing Deep Sea Crabs in Western Australia Final report to Fisheries Research and Development Corporation on Project No. 2001/055. Fisheries Research Report No. 165, Department of Fisheries, Western Australia, 248p.
Methot and Wetzel [2013]	Methot, R.D. and Wetzel, C.R. (2013). Stock Synthesis: A biological and statistical framework for fish stock assessment and fishery management. <i>Fisheries Research</i> , 142: 86-99.
Smith et al. [2004]	Smith, KD, Potter, IC, Hesp, SA (2004). Comparisons between the reproductive biology of females of two species of deep sea crabs that live in different water depths. <i>Journal of Shellfish Research</i> 23:887-896