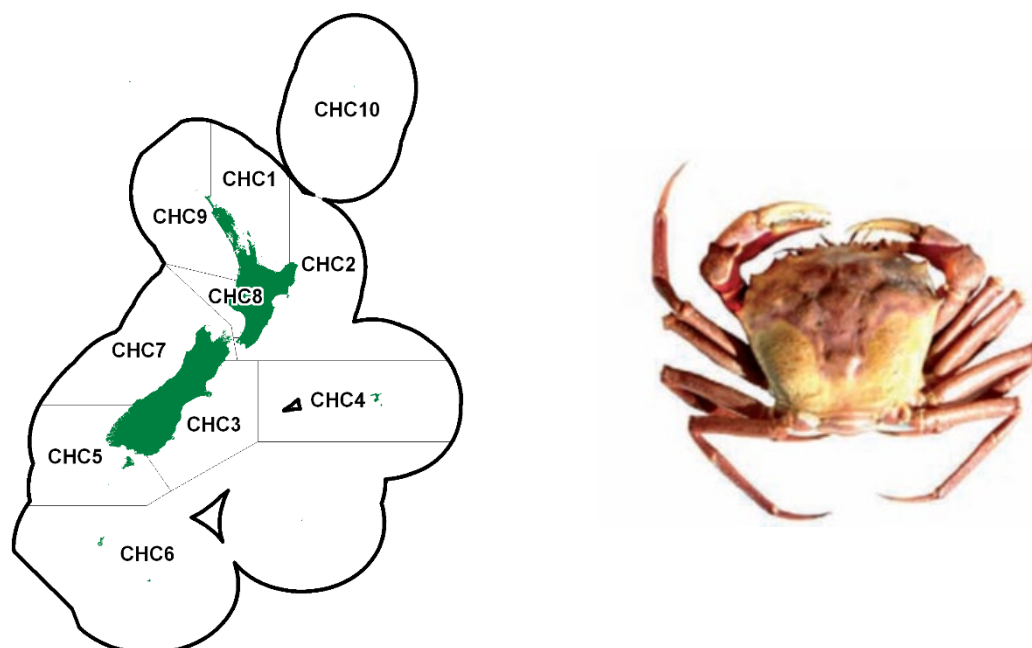


## RED CRAB (CHC)

*(Chaceon bicolor)*

## 1. FISHERY SUMMARY

## 1.1 Commercial fisheries

The red crab (*Chaceon bicolor*) was introduced into the Quota Management System on 1 April 2004 with a combined TAC and TACC of 48 t. There are no allowances for customary, recreational, or other sources of mortality.

The fishing year is from 1 April to 31 March and commercial catches are measured in greenweight. There were no reported commercial catches of this crab until 2001–02, when landings of about 1.3 t were reported. *C. bicolor*, along with several other deepwater crabs, was the focus of an exploratory fishing (potting) permit between 2000 and 2002. Exploratory fisheries have found crabs in the Bay of Plenty, east of Great Barrier Island, and east of Northland. The other region fished has been the east coast of the North Island south of East Cape, where smaller catches were periodically reported.

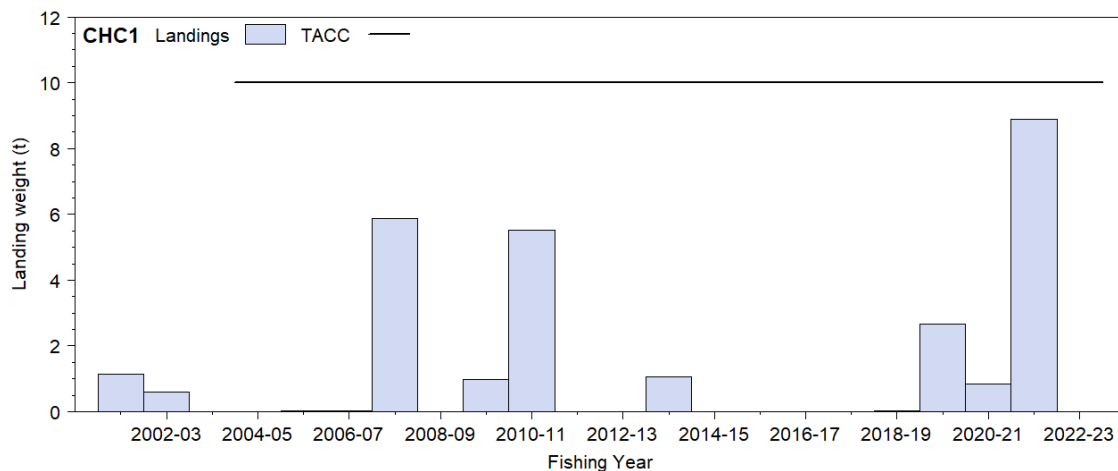
CHC 1 landings have been inconsistent since the introduction to the QMS. Landings reached over 5 t in 2007–08 and 2010–11 fishing years. Since then, captures of over 1 t have occurred during three fishing years (2013–14, 2019–20 and 2021–22). Nil or negligible captures occurred during other years. CHC 2 annual landings have been less than 0.5 t until 2019–20, when 0.85 t were reported. There has been nil or negligible catch from the CHC 3–10 stocks, so only landings for CHC 1 and CHC 2 over time are reported in Table 1. Figure 1 shows the historical landings and TACC for CHC 1. Reported landings for the 2022–23 fishing year are considered preliminary.

There are two species of *Chaceon* known from New Zealand waters. *C. yaldwyni* is almost indistinguishable from *C. bicolor*, but is a very rarely caught species from the eastern Chatham Rise (fewer than five specimens have ever been caught).

**Table 1: TACCs and reported landings (t) of red crab for CHC 1 and CHC 2 from 2001-02 to present from CELR and CLR data. There has been nil or negligible catch from the CHC3–10 stocks, so these are not tabulated; CHC 3–9 have TACCs of 4 t each. The fishing year is from 1 April to 31 March. Reported landings for the 2022–23 fishing year are considered preliminary.**

Fishstock	CHC 1		CHC 2		Total	
	Landings	TACC	Landings	TACC	Landings	TACC
2001–02	1.13	–	0.07	–	1.27*	–
2002–03	0.60	–	0	–	0.60	–
2003–04	0	–	0.01	–	0.01	–
2004–05	0	10	0.22	10	0.22	48
2005–06	0.02	10	0	10	0.02	48
2006–07	0.02	10	0	10	0.02	48
2007–08	5.87	10	0.08	10	5.95	48
2008–09	0	10	0.07	10	0.07	48
2009–10	0.99	10	0.07	10	1.06	48
2010–11	5.53	10	0.42	10	5.97	48
2011–12	0	10	0.01	10	0.04	48
2012–13	0	10	0.01	10	0.01	48
2013–14	1.05	10	0.06	10	1.14	48
2014–15	0	10	0.11	10	0.11	48
2015–16	0	10	0.06	10	0.06	48
2016–17	0	10	0.06	10	0.06	48
2017–18	0	10	0	10	0.01	48
2018–19	0.02	10	0.02	10	0.04	48
2019–20	2.66	10	0.85	10	3.25	48
2020–21	0.84	10	0.01	10	0.85	48
2021–22	8.89	10	0	10	8.89	48
2022–23	0	10	< 0.01	10	< 0.01	48

\*In 2001–02 77.5 kg were reportedly landed, but the FMA was not recorded. This amount is included in the total landings for that year.



**Figure 1: Reported commercial landings and TACC for CHC 1 (Auckland East) from 2001–02 to present.**

**1.2 Recreational fisheries**

There are no known records of recreational catch of this crab.

**1.3 Customary non-commercial fisheries**

There are no known records of customary catch of this crab.

**1.4 Illegal catch**

There is no known illegal catch of this crab.

**1.5 Other sources of mortality**

There is no quantitative information on other sources of mortality, although very small quantities of this crab is sometimes taken as a bycatch of fisheries such as orange roughy.

## 2. BIOLOGY

*C. bicolor* is a very large, purple and tan to yellowy tan coloured crab that reaches at least 192 mm carapace width. It is found on and north of the Chatham Rise, and particularly along the east coast north of Hawke Bay to North Cape. It has been found on both hard and soft substrates, but is considered to be a burrowing crab, living in soft sediments. It has been recorded from depths between 800 m and 1100 m around New Zealand, and between 275 m and 1620 m elsewhere in the Pacific.

*C. bicolor* was previously referred to as *C.* (sometimes *Geryon*) *quinquedens* and belongs to the family Geryonidae which has an almost worldwide distribution. There is no information on its reproduction, age, growth, or natural mortality in New Zealand waters, which may or may not be similar to *Chaceon* species elsewhere.

Geryonid crabs such as *C. bicolor* tend to show partial sex segregation, females being in shallower water than males. Small crabs are usually found in deeper water than the adults, as a result of juvenile settlement in deep water. There can be both seasonal and ontogenetic movements between depth zones.

Females carry a single clutch of eggs during the winter, which hatch the following summer. Clutch size increases with female size, and egg numbers are of the order of 100 000 to 400 000. The eggs are small (0.5–0.6 mm diameter), suggesting a relatively long larval life, probably resulting in widespread dispersal. Off Western Australia, however, *C. bicolor* females may be ovigerous at any time of the year. One study off Western Australia found that the lengths at 50% maturity were 90.5 mm and 94 mm carapace length for females and males respectively.

Pot catches usually yield a very biased sex ratio favouring males, which may be due to the fact that ovigerous females remain buried in the substrate during incubation.

## 3. STOCKS AND AREAS

For management purposes, stock boundaries are based on FMAs. There is currently no biological or fishery information that could be used to identify biological stock boundaries.

## 4. STOCK ASSESSMENT

### 4.1 Estimates of fishery parameters and abundance

There are no estimates of fishery parameters or abundance for any red crab fishstock.

### 4.2 Biomass estimates

There are no biomass estimates for any red crab fishstock.

### 4.3 Yield estimates and projections

There are no estimates of *MCY* for any red crab fishstock.

There are no estimates of *CAY* for any red crab fishstock.

## 5. STATUS OF THE STOCKS

For all red crab stocks there is insufficient information to estimate current stock status

## 6. FOR FURTHER INFORMATION

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