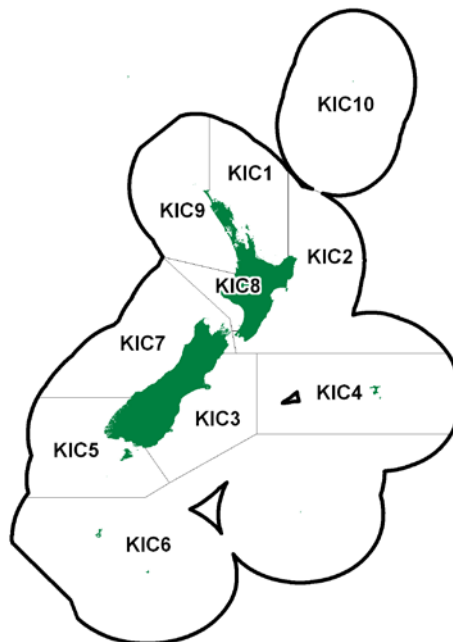


KING CRAB (KIC)

(*Lithodes murrayi*, *Neolithodes brodiei*)



1. FISHERY SUMMARY

1.1 Commercial fisheries

King crabs (*Lithodes murrayi* and *Neolithodes brodiei*) were introduced into the Quota Management System on 1 April 2004 with a combined TAC of 9 t and TACC 9 t (Table 1). 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. The two crabs are relatively distinct, and are found at different depths, but may be confused with other species of *Lithodes*.

Landings have been reported from all QMAs except KIC 7 and KIC 9, however these landings are small and are unlikely to reflect the real catch as these crabs are generally discarded at sea and remain unreported. Most of the landed catch has been reported under the aggregated code KIC, although there are a few records by species (i.e., *L. murrayi* [LMU] and *N. brodiei* [NEB]).

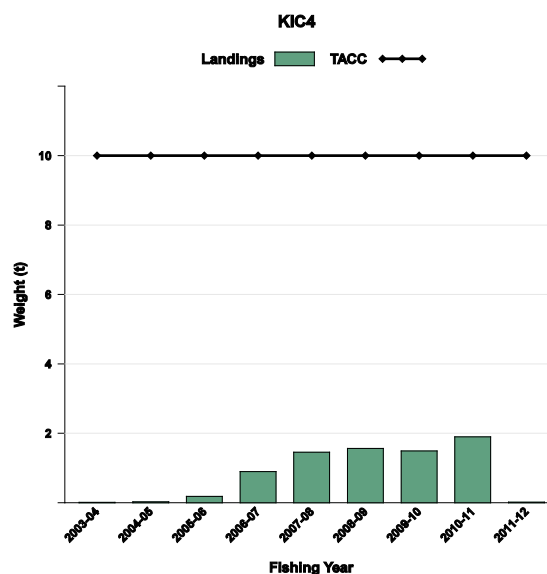


Figure 1: Historical landings and TACC for KIC4 (South East Chatham Rise). Note that this figure does not show data prior to entry into the QMS.

Most of the reported landings since 1992-93 are from KIC 6, and most of this was landed in the 1996-97 fishing year under a special permit. Between 2000 and 2002 landings were also made under a special permit (Table 1). Target fishing is by potting, although the crabs are taken as bycatch in the orange roughy fishery off the Wairarapa coast and in Queen Scallop dredging off the Otago coast. Figure 1 shows the historical landings and TACC for KIC4.

1.2 Recreational fisheries

There are no records of recreational use of these crabs, and because of their depth range recreational catch is unlikely.

1.3 Customary non-commercial fisheries

There are no known records of customary use of these crabs, and because of their depth range customary take is unlikely.

1.4 Illegal catch

There is no known illegal catch of these crabs.

1.5 Other sources of mortality

There is no quantitative information on other sources of mortality, although the crabs are sometimes taken as a bycatch in orange roughy fishing and queen scallop fishing.

Table 1: TACCs and reported landings (t) of king crab by Fishstock from 1992-93 to 2011-12 from CELR and CLR data. [Continued on next page].

Fishstock	KIC 1		KIC 2		KIC 3		KIC 4		KIC 5	
	Landings	TACC	Landings	TACC	Landings	TACC	Landings	TACC	Landings	TACC
1993-94	0	-	0.119	-	0.064	-	0	-	0	-
1994-95	0	-	0	-	0	-	0	-	0	-
1995-96	0	-	0	-	0.055	-	0	-	0	-
1996-97	0	-	0.08	-	0	-	0	-	0	-
1997-98	0	-	0	-	0	-	0	-	0	-
1998-99	0	-	0	-	0	-	0	-	0	-
1999-00	0	-	0	-	0.021	-	0	-	0	-
2000-01	0	-	0	-	0	-	0	-	0	-
2001-02	0.135	-	0.26	-	0	-	0	-	0	-
2002-03	0.01	-	0.005	-	0	-	0	-	0.032	-
2003-04	0	10	0	10	0.009	10	0.012	10	0	10
2004-05	0	10	0.073	10	0.133	10	0.025	10	0.013	10
2005-06	0	10	0.211	10	0.118	10	0.181	10	0.028	10
2006-07	0	10	0.041	10	0.24	10	0.896	10	0.126	10
2007-08	0.078	10	0.408	10	0.206	10	1.455	10	0.068	10
2008-09	0.010	10	0.185	10	0.244	10	1.566	10	0.073	10
2009-10	0	10	.197	10	0.352	10	1.493	10	0.030	10
2010-11	0.018	10	0.183	10	0.253	10	1.898	10	0.143	10
2011-12	0	10	2.476	10	0.066	10	0.016	10	0.037	10

2. BIOLOGY

King crabs belong to the infra order *Anomura*, and differ from true crabs (*Brachyura*) in that the last pair of walking legs is reduced and folded inside the carapace.

L. murrayi is a large, pear-shaped, dark purplish-red or brick red crab that has been found at depths between 120 m and 700 m. from the east coast of Northland to southern parts of the Campbell Plateau. It is a circumpolar, Southern Ocean species growing so large that the distance between the tips of the second legs can reach 1.25 m. The carapace width in males of this species may exceed 200 mm. Females are smaller.

N. brodiei is also pear-shaped, and typically a uniform brick to bright red colour. It is widely distributed from the Three Kings Islands to the Campbell Plateau, where it occurs on soft and rocky bottoms between about 800 and 1100 m. Carapace width in this species is up to about 180 mm.

KING CRAB (KIC)

Table 1 [Continued].

Fishstock	KIC 6		KIC 7		KIC 8		KIC 9		KIC ET	
	Landings	TACC	Landings	TACC	Landings	TACC	Landings	TACC	Landings	TACC
1993-94	0	-	0	-	0	-	0	-	0	-
1994-95	0	-	0	-	0	-	0	-	0	-
1995-96	0	-	0	-	0	-	0	-	0	-
1996-97	4	-	0	-	0	-	0	-	0	-
1997-98	0	-	0	-	0	-	0	-	0	-
1998-99	0.026	-	0	-	0	-	0	-	0	-
1999-00	0.035	-	0	-	0.072	-	0	-	0	-
2000-01	0.055	-	0	-	0	-	0	-	0	-
2001-02	0.029	-	0	-	0	-	0	-	0	-
2002-03	0.045	-	0	-	0	-	0	-	0	-
2003-04	0.456	10	0	10	0	10	0	10	0	-
2004-05	0.698	10	0	10	0	10	0	10	0	-
2005-06	0.505	10	0	10	0	10	0	10	0.02	-
2006-07	0.308	10	0	10	0	10	0	10	0.004	-
2007-08	0.492	10	0.080	10	0	10	0.019	10	0	-
2008-09	0.424	10	0.063	10	0	10	0	10	0	-
2009-10	0.337	10	0	10	0	10	0.057	10	0	-
2010-11	1.037	10	0	10	0.204	10	0	10	0	-
2011-12	0.343	10	0	10	0	10	0.026	10	0	-

Fishstock	TOTAL*	
	Landings	TACC
1993-94	0.119	-
1994-95	0	-
1995-96	0.102	-
1996-97	4.104	-
1997-98	0	-
1998-99	0.011	-
1999-00	0.119	-
2000-01	0.035	-
2001-02	0.45	-
2002-03	0.063	-
2003-04	0.482	90
2004-05	0.942	90
2005-06	1.063	90
2006-07	1.615	90
2007-08	2.806	90
2008-09	0.487	90
2009-10	2.466	90
2010-11	3.736	90
2011-12	2.964	90

*In 1995-96 and 1998-99, 47 kg and 1 kg of LMU were landed respectively, but no FMA was assigned to the landings. In 1996-97 24 kg of NEB was landed but no FMA was assigned to this landing. These reported landings by species are included in the total landings for KIC in those years.

King crabs are thought to aggregate for protection during breeding and moulting. Migrations between shallow and deep waters also probably occur in response to moulting and mating, at least in near-shore populations. They occur mainly on soft substrates but have also been found on rocky bottoms. They are probably omnivorous, although animal food (sessile, sedentary, and mobile invertebrates, and small fish), including dead material, is their predominant food. Their principal predators are fish and seals.

Sexes are separate in all species of king crabs and they appear to be seasonal spawners, probably spawning in summer or autumn.

3. STOCKS AND AREAS

For management purposes stock boundaries are based on QMAs, however, there is currently no biological or fishery information which could be used to identify stock boundaries.

4. STOCK ASSESSMENT

4.1 Estimates of fishery parameters and abundance

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

4.2 Biomass estimates

There are no biomass estimates for any king crab fishstock.

4.3 Yield estimates and projections

There are no estimates of *MCY* and *CAY* for any king crab fishstock.

5. STATUS OF THE STOCKS

There are no estimates of reference or current biomass for any king crab fishstock.

6. FOR FURTHER INFORMATION

- Arnaud P.M., Do-Chi T. 1977. Donnees biologiques et biometriques sur les lithodes *Lithodes murrayi* (Crustacea: Decapoda: Anomura) des Iles Crozet (SW Ocean Indien). *Marine Biology* 39: 147-159.
- Clark M.R., King K.J. 1989. Deepwater fish resources off the North Island, New Zealand: results of a trawl survey, May 1985 to June 1986. New Zealand Fisheries Technical Report No. 11.
- Dawson E.W. 1989. King crabs of the world (Crustacea: Lithodidae) and their fisheries. A comprehensive bibliography. New Zealand Oceanographic Institute Miscellaneous Publication 101.
- FAO 1985. Southern Ocean CCAMLR Convention area, fishing areas 48, 58 and 88. p. 89-92. FAO species identification sheets for fishery purposes. Vol. 1.
- McClay C.L. 1988. Brachyura and crab-like Anomura of New Zealand. *Leigh Laboratory Bulletin* No. 22.
- Macpherson E. (2001). New species and new records of lithodid crabs (Crustacea, Decapoda) from the southwestern and central Pacific Ocean. *Zoosystema*. Paris 23: 797-805.
- Melville-Smith R. 1982. A brief exploitation of the stone crab *Lithodes murrayi* (Henderson) off South West Africa, 1979/80. *Fisheries Bulletin of South Africa* 16: 45-55.
- Naylor J.R., Webber W.R., Booth J.D. 2005. A guide to common offshore crabs in New Zealand waters. New Zealand Aquatic Environment and Biodiversity Report No. 2. 47 p.
- Miquel J.C., Arnaud P.M. 1987. Aspects de la biologie de *Lithodes murrayi* (Crustacea : Decapoda) aux Iles Crozet, Ocean Indien Subantarctique. *CNFRA* 57: 81-89.
- Miquel J.C., Arnaud P.M., Do-Chi T. 1985. Population structure and migration of the stone crab *Lithodes murrayi* in the Crozet Islands, Subantarctic Indian Ocean. *Marine Biology* 89: 263-269.
- O'Driscoll R.L., Booth J.D., Bagley N.W., Anderson O.F., Griggs L.H., Stevenson M.L., Francis M.P. 2001. Areas of importance for spawning, pupping or egg-laying, and juveniles of New Zealand deepwater fish, pelagic fish, and invertebrates. Final Research Report for Ministry of Fisheries Research Project ENV2000/04. Objectives 1, 2, & 3.
- Webb B.F. 1972. Report on the investigations of the 'Lloret Lopez II' - 8 January to 2 April 1970. Section 3 Crab survey - 18 February to 27 February 1970. Fisheries Technical Report No. 97.
- Webber R. 1997. The royal family: king crabs at home and abroad. *Seafood New Zealand* May: 81-84.