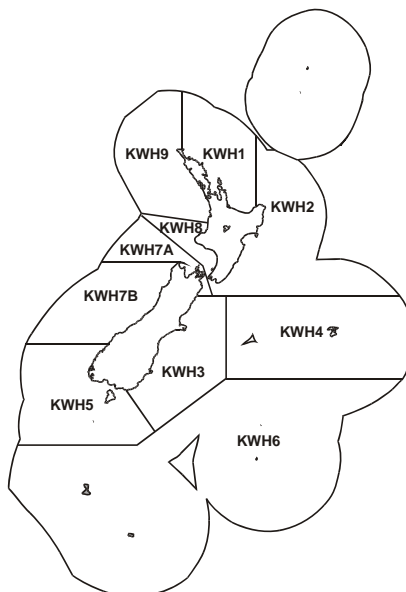


KNOBBED WHELK (KWH)

(*Austrofusus glans*)



1. FISHERY SUMMARY

(a) Commercial fisheries

Knobbed whelks (*Austrofusus glans*) were introduced into Quota Management System on 1 October 2006. The fishing year is from 1 October to 30 September and commercial catches are measured in greenweight. TACCs have been allocated in 10 QMAs (Table 1). Target fishing for knobbed whelks is by baited pots, but because economic returns for whelk fishing are poor, most of the historical catch is bycatch from oyster and scallop dredging and from bottom trawling. Because of the low value of this species it is likely that there is a high level of unreported discarded catch.

Landings shown in Table 2 were recorded under the generic code for whelks (WHE), however, the Ministry considers that in FMA 1, 2, 7, and 8, most reported landings will be of the knobbed whelk. In FMA 3, 4, 5, and 6, the Ministry considers that about a third of reported landings are of the knobbed whelk, while the remainder are the large ostrich foot shell *Struthiolaria papulosa*.

Reported landings of knobbed whelk in FMA 1, FMA 2, and FMA 8 have been relatively low and variable since the 1990s and have been bycatch. In FMA 7 in the early 1990s higher catches were reported as part of experimental fisheries in Golden and Tasman Bay to provide stock assessment information in these areas.

(b) Recreational fisheries

Knobbed whelks do not appear in records from recreational fishing surveys (Bradford, 1998; Bradford et al., 1998), and current recreational catch is likely to be very small.

(c) Maori customary fisheries

There are no estimates of current customary use of this species, although some customary take of this species occurs, especially in some parts of the North Island.

(d) Illegal catch

There is no known illegal catch of this whelk.

(e) Other sources of mortality

There is no information on other sources of mortality for this whelk.

Table 1: TACCs (t) of Knobbed whelk by Fishstock.

Fishstock	<u>KWH1</u>	<u>KWH2</u>	<u>KWH3</u>	<u>KWH4</u>	<u>KWH5</u>	<u>KWH6</u>	<u>KWH7A</u>	<u>KWH7B</u>	<u>KWH8</u>	<u>KWH9</u>
TACC	1.0	1.0	3.0	6.0	1.0	2.0	50.0	1.0	1.0	1.0

Table 2: Landings (t) of whelks (WHE) by Fishstock from 1990–91 to 2005–06 from Fisheries Information System.

Fishstock	<u>FMA 1</u>	<u>FMA 2</u>	<u>FMA 3</u>	<u>FMA 4</u>	<u>FMA 5</u>	<u>FMA 6</u>	<u>FMA 7</u>	<u>FMA 8</u>	<u>FMA 9</u>	<u>Total</u>
1990–91	0	0	0	0	0	0	44.976	0	0	44.976
1991–92	0	0	0	0	0	0	26.935	0	0	26.935
1992–93	0.021	0	0.018	0	0	0	1.762	0	0	1.801
1993–94	0	0.135	0	0	0	0	49.278	0	0	49.413
1994–95	0	0.707	0.545	0	0	0	21.458	0.593	0	23.303
1995–96	0	0.089	0.178	0	0	0	27.596	0	0	27.863
1996–97	0.002	0.174	0.144	0	0.003	0	8.959	0	0	9.282
1997–98	0	0	0.102	0.150	0	0	0.884	0	0	1.136
1998–99	0	0	0.223	2.205	2.470	0.150	0.570	0	0	5.618
1999–00	0	0	2.286	7.953	3.250	0.790	0.080	0	0	14.359
2000–01	0	0	10.467	17.497	3.538	4.765	0.141	0	0	36.408
2001–02	0	0	1.474	3.995	0.515	1.755	0.002	0	0	7.741
2002–03	0	0	0.212	0.020	0.004	0.780	0.077	0	0	1.093
2003–04	0.035	0	0.491	0	0	0.335	4.217	0	0	5.078
2004–05	0.008	0	0.021	0	0	0.335	0.228	0	0.047	0.639

2. BIOLOGY

The knobbed whelk *A. glans*, is a widely distributed gastropod found from low tide to about 600 m. This carnivorous whelk grows up to 5cm long, and occurs throughout New Zealand where it is found on sandy/silt/mud substrate. There is very little published about the biology of this species; most references being identification notes or records of occurrence. It is a scavenger that buries in the substrate when not feeding. A wide variety of invertebrates including polychaetes, gastropods, and bivalves occur within the wide depth range of the knobbed whelk, but no specific interdependent relationships are documented. Presumably the species is part of the diet of a range of bottom-feeding fish, such as snapper and tarakihi.

3. STOCKS AND AREAS

For management purposes stock boundaries are based on QMAs, however, there is no biological information on stock structure, recruitment patterns, or other biological characteristics which might indicate stock boundaries.

4. ENVIRONMENTAL AND ECOSYSTEM CONSIDERATIONS**(a) Sea-bed disturbance**

Target fishing for knobbed whelks is done with pots and is a relatively benign method of fishing compared with trawling. Direct effects on the sea-bed may arise from the pot landing on the bottom. These are unlikely to be harmful on either hard or soft substrates, and the proportion of the habitat affected is likely to be low.

(b) Incidental catch (fish and invertebrates)

Not relevant to the knobbed whelk fishery as they are predominantly incidental catch.

(c) **Incidental Catch (seabirds and mammals)**

Not relevant to knobbed whelk fisheries.

(d) **Community and trophic structure**

Trawling and dredging associated with the incidental catch of the knobbed whelk is likely to locally reduce biodiversity.

(e) **Spawning disruption**

The effects of trawling and dredging on spawning are unknown.

(f) **Habitats of special significance**

Habitats of special significance have not been defined for this fishery.

(g) **Biodiversity**

The long-term effect of the incidental catch of knobbed whelks on the maintenance and healthy functioning of the natural marine habitat and ecosystems is unknown.

(h) **Aquaculture and enhancement**

Not relevant as knobbed whelk aquaculture or enhancement are unlikely to be economically viable at present.

5. STOCK ASSESSMENT

(a) **Estimates of fishery parameters and abundance**

There are no estimates of fishery parameters or abundance for any knobbed whelk fishstock.

(b) **Biomass estimates**

There are no biomass estimates for any knobbed whelk fishstock..

(c) **Estimation of Maximum Constant Yield (MCY)**

There are no estimates of MCY for any knobbed whelk fishstock.

(d) **Estimation of Current Annual Yield (CAY)**

There are no estimates of CAY for any knobbed whelk fishstock.

6. STATUS OF THE STOCKS

There are no estimates of reference or current biomass for any knobbed whelk fishstock. It is not known whether knobbed whelk stocks are at, above, or below a level that can produce MSY.

7. FOR FURTHER INFORMATION

Morton, J.; Miller, M. (1968). The New Zealand sea shore. Collins, Auckland. 638 p.

Powell, A.W.B. (1979). New Zealand Mollusca. Marine, land and freshwater shells. Collins, Auckland. 500 p.