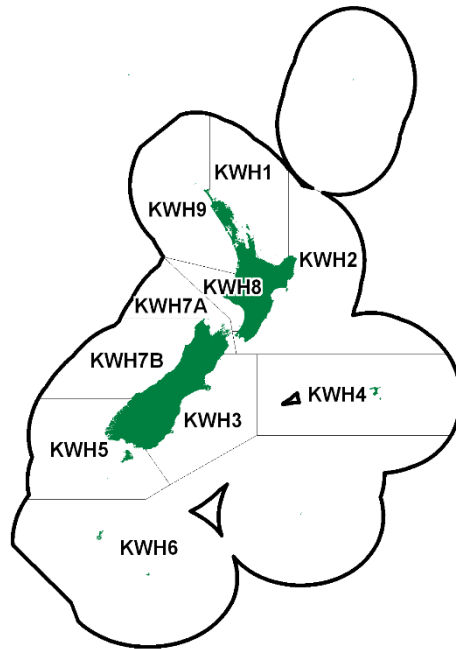


Knobbed Whelk (KWH)

Austrofusus glans



1. FISHERY SUMMARY

Knobbed whelks (*Austrofusus glans*) were introduced into the Quota Management System on 1 October 2006. The fishing year is from 1 October to 30 September and commercial catches are measured in greenweight. TACs have been allocated in 10 QMAs (Table 1). This species is managed under Schedule 6 of the Fisheries Act for all stocks, which allows for them to be returned to where they were taken (as soon as practicable after being taken) providing they are likely to survive.

Table 1: Current TAC, TACC and allowances for customary fishing, recreational fishing and other sources of mortality for *Austrofusus glans*.

| QMA | TAC (t) | TACC (t) | Customary fishing | Recreational fishing | Other sources of mortality |
|--------------|-----------|-----------|-------------------|----------------------|----------------------------|
| KWH1 | 3 | 1 | 1 | 1 | 0 |
| KWH 2 | 3 | 1 | 1 | 1 | 0 |
| KWH 3 | 5 | 3 | 1 | 1 | 0 |
| KWH 4 | 8 | 6 | 1 | 1 | 0 |
| KWH 5 | 3 | 1 | 1 | 1 | 0 |
| KWH 6 | 4 | 2 | 1 | 1 | 0 |
| KWH 7A | 53 | 50 | 1 | 1 | 1 |
| KWH 7B | 3 | 1 | 1 | 1 | 0 |
| KWH 8 | 3 | 1 | 1 | 1 | 0 |
| KWH 9 | 3 | 1 | 1 | 1 | 0 |
| Total | 88 | 67 | 10 | 10 | 1 |

1.1 Commercial fisheries

Target fishing for knobbed whelks is by baited pots. Because economic returns for whelk fishing are poor, most of the historical catch is bycatch from oyster and scallop dredging and from bottom trawling. Due to the low value of this species it is likely that there is a high level of unreported discarded catch.

Landings shown in Table 2 for the period 1990–91 to 2005–06 were recorded under the generic code for whelks (WHE), however the Ministry considers that in FMA 1, 2, 7, and 8, most reported landings were of the knobbed whelk *Austrofusus glans*. In FMA 3, 4, 5, and 6, the Ministry considers that about a third of reported landings were of the knobbed whelk, while the remainder were 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 (largely or all) accounted for as 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

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assessment information in these areas (Tables 2 and 3). Landings are split into two tables (before and after the 2006 fishing year) as reporting requirements changed when knobbed whelks entered the QMS.

Table 2: Reported landings (t) of whelks (WHE) by FMA from 1990–91 to 2005–06 from landing returns. See section 1.1 for an explanation of the proportion of WHE that are considered to be knobbed whelks.

| FMA | FMA 1 | FMA 2 | FMA 3 | FMA 4 | FMA 5 | FMA 6 | FMA 7 | FMA 8 | FMA 9 | Total |
|---------|-------|-------|--------|--------|-------|-------|--------|-------|-------|--------|
| 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 | 0.234 | 0 | 0.047 | 0.639 |
| 2005–06 | 0 | 0 | 0.163 | 0 | 0 | 0 | 0.032 | 0 | 0 | 0.195 |

Table 3: Landings of Knobbed whelk (KWH) by QMA from 2006–07 to present from monthly harvest returns (MHR).

| QMA | 1 | 2 | 3 | 4 | 5 | 6 | 7A | 7B | 8 | 9 | Total |
|---------|-------|-------|-------|---|-------|-------|--------|-------|-------|---|--------|
| 2006–07 | 0.080 | 0 | 0.010 | 0 | 0 | 0 | 0.046 | 0 | 0 | 0 | 0.136 |
| 2007–08 | 0.077 | 0 | 0.006 | 0 | 0 | 0 | 9.174 | 0.104 | 0 | 0 | 9.361 |
| 2008–09 | 0.103 | 0 | 0.121 | 0 | 0 | 0.001 | 0.226 | 0.008 | 0 | 0 | 0.459 |
| 2009–10 | 0.088 | 0 | 0.053 | 0 | 0 | 0 | 18.50 | 0 | 0 | 0 | 18.614 |
| 2010–11 | 0.473 | 0.036 | 0 | 0 | 0 | 0 | 16.033 | 0 | 0 | 0 | 16.542 |
| 2011–12 | 0.721 | 0.07 | 0.088 | 0 | 0 | 0 | 0 | 0.008 | 0 | 0 | 0.887 |
| 2012–13 | 0.551 | 0 | 0.003 | 0 | 0.001 | 0 | 0 | 0.014 | 0 | 0 | 0.569 |
| 2013–14 | 0.116 | 0 | 0.159 | 0 | 0.002 | 0 | 0 | 0 | 0 | 0 | 0.277 |
| 2014–15 | 0.039 | 0 | 0.02 | 0 | 0 | 0 | 0 | 0 | 0.108 | 0 | 0.167 |

1.2 Recreational fisheries

There are no estimates of recreational catch.

1.3 Customary non-commercial fisheries

There are no estimates of current customary catch.

1.4 Illegal catch

There is no known illegal catch of this whelk.

1.5 Other sources of mortality

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

2. BIOLOGY

The knobbed whelk *A. glans*, is a widely distributed gastropod found from low tide to about 600 m (Powell 1979). This carnivorous whelk grows up to 5 cm 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 are 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 interdependent relationships are documented with *A. glans*.

3. STOCKS AND AREAS

For management purposes stock boundaries are based on FMAs. There is no biological information on stock structure, recruitment patterns, or other biological characteristics which might indicate alternative stock boundaries.

4. STOCK ASSESSMENT

4.1 Estimates of fishery parameters and abundance

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

4.2 Biomass estimates

There are no biomass estimates for any knobbed whelk fishstock.

4.3 Yield estimates and projections

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

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

5. STATUS OF THE STOCKS

- **KWH 7A** - *Austrofusus glans*

| Stock Status | |
|--|--|
| Year of Most Recent Assessment | No formal assessment done of any of the stocks |
| Assessment Runs Presented | - |
| Reference Points | Target: None Soft Limit: None Hard Limit: None Overfishing threshold: - |
| Status in relation to Target | - |
| Status in relation to Limits | - |
| Status in relation to Overfishing | |
| Historical Stock Status Trajectory and Current Status | |
| Unknown | |

| Fishery and Stock Trends | |
|--|--|
| Recent Trend in Biomass or Proxy | Unknown |
| Recent Trend in Fishing Mortality or Proxy | In 1990–96 the landings for KWH 7 averaged 28.7 t. However since that time landings have declined in this area to less than 10 t per year. Landings in all other Fishstocks have been variable but total catch across all Fishstocks has been less than 10 t per year since 2001–02. |
| Other Abundance Indices | - |
| Trends in Other Relevant Indicators or Variables | - |

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| Projections and Prognosis | |
|---|--|
| Stock Projections or Prognosis | - |
| Probability of Current Catch or TACC causing Biomass to remain below or to decline below Limits | Soft Limit: Unknown Hard Limit: Unknown It is unknown what effect fishing to date has had on <i>Austrofusus glans</i> stocks |
| Probability of Current Catch or TACC causing Overfishing to continue or to commence | - |

| Assessment Methodology | | |
|--|----------------------|--------------------|
| Assessment Type | - | |
| Assessment Method | - | |
| Assessment Dates | Latest assessment: - | Next assessment: - |
| Overall assessment quality rank | - | |
| Main data inputs (rank) | - | |
| Data not used (rank) | - | |
| Changes to Model Structure and Assumptions | - | |
| Major Sources of Uncertainty | - | |

| Qualifying Comments |
|----------------------------|
| - |

| Fishery Interactions |
|-----------------------------|
| - |

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.