

Ngai Tahu Sea Fisheries Report

09 Profile of Modern Fisheries in the Ngai Tahu Region

9.1 The National Industry

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9.1.1 Modern New Zealand fisheries constitute a large, high-earning industry. In 1990 more than 578,000 tonnes of fish and shellfish were caught and earnings from this catch amounted to approximately \$1 billion with nearly \$750 million of that coming from export receipts. {FNREF|0-86472-103-X|9.1.1|1} More than 8000 people are employed in the catching and processing sectors of the industry and many hundreds of millions of dollars are currently invested in quota holdings and fishing plants (Z18:11). {FNREF|0-86472-103-X|9.1.1|2} Commercial fisheries have developed into one of New Zealand's leading export industries and they are managed under one of the most advanced, albeit controversial, management regimes in the world. {FNREF|0-86472-103-X|9.1.1|3}

Its location

9.1.2 Stretched over more than 30 degrees of latitude in the southern Pacific ocean, New Zealand is surrounded by one of the the world's largest fishing zones, the 200 mile Exclusive Economic Zone (EEZ)(refer to map 6.1). This area covers more than three million hectares and contains a substantial range of fisheries resources. The modern commercial fishing industry is based on approximately 80 species out of the many thousands which occur in the EEZ, and operates in two distinct zones, inshore fisheries and offshore (T4(a):212).

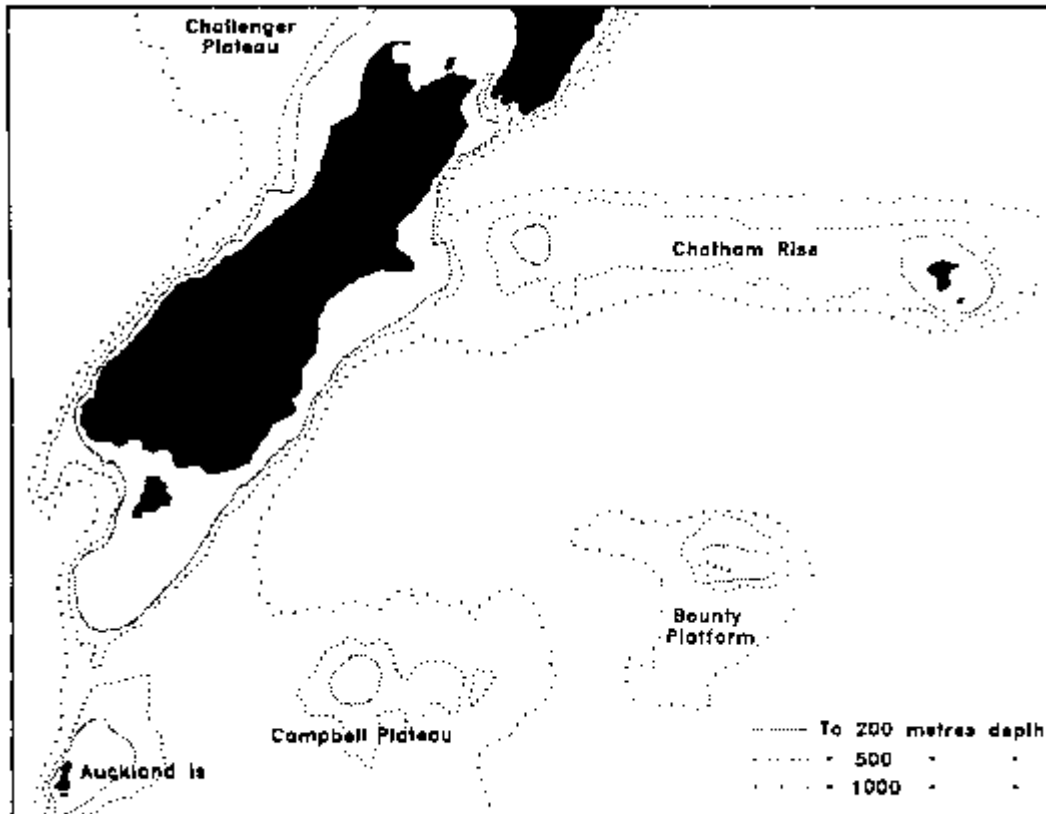
The inshore fisheries lie on the continental shelf reaching out to a depth of about 200 metres. In the Ngai Tahu region the distance the shelf extends from the coastline varies considerably, from a mere one and a half kilometres off parts of Kaikoura up to 80 kilometres off parts of south Canterbury and north and central Westland (see map 9.1).

The offshore fisheries occur along the continental slope, beginning at 200 metres depth and extending to 1000 metres. Again, there is great variation in the distance from the shore for this type of fishery. Along the Kaikoura and south-west Murihiku coasts the 1000 metre mark occurs only 8-16 kilometres offshore, while from Banks Peninsula and the north and south Canterbury bights the continental slope extends 650 kilometres to the Chatham Islands. Off the south of Te Wai Pounamu the slope reaches out a similar distance into the sub-antarctic ocean (T4(a):212-213).

Its species

9.1.3 Of the inshore commercial species, the demersal or bottom-dwelling fish are the most valuable. These include snapper, red cod, school shark, rig, tarakihi, gurnard,

flatfish, hapuku, bass, elephant fish, trevally, john dory, moki, blue nose, stargazer, mullet and dogfish. The major inshore pelagic species include kahawai, barracouta, shark, trevally, blue mackerel, jack mackerel, butterfish, baitfish, red moki, leatherjacket, porae, sea perch and trumpeter. Also included in the inshore fisheries are the highly prized red rock lobster, Bluff oysters, scallops and paua, as well as cockles, pipi and tuatua (T4(a):213).



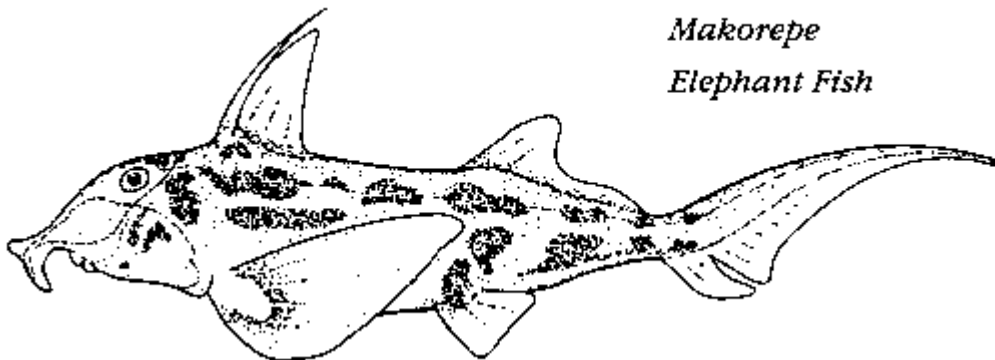
Map 9.1: Depth of water around the South Island

The commercial species in offshore waters are generally bottom or near bottom dwellers and include hoki, orange roughy, ling, barracouta, the oreo dories, gemfish, warehou, hake, alfonsino and southern blue whiting. The principal fishing method for these species is trawling. The major pelagic offshore species include the tunas (albacore, skipjack, southern bluefin and yellowfish), the billfish (blue, black and striped marlin), sailfish, swordfish, and the large pelagic sharks (mako, blue, thresher, tiger, hammerhead and bronze whaler) (T4(a):213-214).

New Zealand's commercial squid fisheries are found in deep water and are especially abundant in the south. Squid are both demersal and pelagic and are taken either by trawling in deep and mid water or by surface jigging (T4(a):214).

Also featuring on the modern commercial fishing scene, though not to a large extent, are the eel fishery, the bulk of which is exported, and the various fish farming

operations based on oysters, mussels and salmon (T4(a):213-215).



The participants

9.1.4 Participants in the New Zealand fishing industry are either domestic, chartered or foreign licensed operators. Figures on the composition of the fleet for the Ngai Tahu region were not given in evidence but the NZFIB Economic Review 1990 states that the domestic fulltime fleet for the whole of New Zealand in 1990 consisted of more than 1500 vessels and accounted for 38 percent of the total catch for that year. {FNREF|0-86472-103-X|9.1.4|4} Nearly three quarters of the home fleet is made up of small boats, less than 12 metres long, which reflects the dominance of domestic fishers in the coast-hugging fisheries for the inshore and shellfish species. {FNREF|0-86472-103-X|9.1.4|5}

By comparison, the charter fleet is generally made up of large deep water vessels. For the most part they are foreign owned and crewed and contracted by New Zealand quota holders. Since the 1970s the charter fleet's share of the total catch has increased dramatically. In the late 1970s the fleet took something like 15 percent of the total catch; by 1990 it was catching 61 percent. {FNREF|0-86472-103-X|9.1.4|6} The most important species caught by the charter fleet in 1990 were hoki, squid and southern blue whiting. {FNREF|0-86472-103-X|9.1.4|7}

Foreign-licensed nations receive quota allocations from quota remaining after allocations have been made to domestic fishers. Foreign operators currently play a minor role in the industry though their participation used to be substantial. In 1977, the year before the declaration of the EEZ, a total of nearly 500,000 tonnes was caught around New Zealand in an area equivalent to the EEZ. Of this catch more than 80 percent (400,000 tonnes) was taken by foreign nations. The following year, when the EEZ came into force, the foreign fleet catch fell to about 120,000 tonnes and it presently accounts for less than 6000 tonnes or one percent of the New Zealand catch. {FNREF|0-86472-103-X|9.1.4|8} The most important species for the foreign fleet in 1990 was tuna (R21:5(b)). {FNREF|0-86472-103-X|9.1.4|9}

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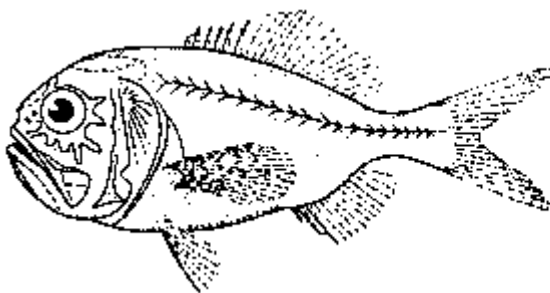
9.2 Modern Fisheries in the Ngai Tahu Region

9.2. Modern Fisheries in the Ngai Tahu Region

9.2.1 Until the late 1970s, and the introduction of the 200 mile EEZ in 1978, the annual domestic fish catch was less than 50,000 tonnes. The fish caught were predominantly inshore and shelf species (R21:3). Since that time there have been dramatic changes in the fishing industry and the role of fisheries within the Ngai Tahu region has been transformed. As a result of developments in the last 15 years many of New Zealand's most productive and valuable fishing grounds now lie within the Ngai Tahu claim area and the fisheries of this region occupy a very prominent position in the national fisheries profile (AB11).

There had been some substantial commercial fisheries working the inshore waters off the South Island for many decades but the outstanding importance of fisheries in the claim area began to emerge in the early 1980s and is primarily related to the development of the deep water resources. Other key factors in the emergence of these high value southern fisheries were the introduction of the 200 mile EEZ in 1978, the commercial development of the orange roughy fishery from 1981 onwards and the growth of export markets for paua and rock lobster.

The EEZ gave New Zealand fishing interests access to the lucrative deep water fisheries that foreign fleets had been harvesting since the 1960s and 1970s. Until 1978 New Zealand's involvement in the deep water species had been negligible, but with the development of joint venture operations the domestic industry gained access to the large catching capacity and technology needed to harvest fish 200 miles from shore (Z18:9).



Nthorota
Orange Roughy

The New Zealand orange roughy fishery began in 1978 on the Chatham Rise and expanded to other fishing grounds mainly, though not entirely, within the Ngai Tahu rohe. As a result of high export demand and prices, orange roughy has become New Zealand's most valuable fin fishery. As described by Gregory Billington of the NZFIB:

orange roughy [has] been of critical importance in enabling the New Zealand industry to increase its investment and to expand its operations to include other less valuable deepwater resources such as the oreo dories and hoki. (Z18:10)

Paua and rock lobster fisheries, small by volume but two of the five highest export earners, were stimulated by dramatic growth in export markets from the late 1970s onwards. The three most valuable species caught in New Zealand's EEZ - hoki, orange roughy, and rock lobster - are all predominately or substantially fished from the Ngai Tahu region. Together these three species, contribute slightly less than half (49 percent) of the total value of the New Zealand catch. {FNREF|0-86472-103-X|9.2.1|10}

Size of the catch in the Ngai Tahu region

9.2.2 MAFFish scientists provided a wealth of information on species within the Ngai Tahu region, their catch locations and quantities, and the size of the Ngai Tahu catch as a percentage of the national catch. As carefully explained in the evidence of Larry Paul (R38(O)), the summarising of fisheries statistics for the Ngai Tahu claim presented some difficulties. One concern was the difference between the boundaries of the claim area and the boundaries of fishing data areas as defined by MAFFish. The northern boundaries of the claim lie at Pari-nui-o-whiti on the east and Kahurangi on the west but neither of these points coincide with the areas used by MAFFish for the collection of fisheries statistics (R38(O):2-3). In addition, the absence of a defined boundary between the Ngai Tahu claim area and the Chatham Islands made it impossible to distinguish between fisheries occurring within the Ngai Tahu claim area and those that might form part of a Chatham Islands claim. The closest approximation to the claim area was a region consisting of all coastal and offshore waters south of the Ngai Tahu northern boundaries and extending to the limit of the 200 mile EEZ. This area was defined by Mr Paul as the "Ngai Tahu region" rather than the "Ngai Tahu claim area" because it included the Chatham Rise close to the Chatham Islands where a boundary may yet be drawn at some future time and where significant quantities of important deepwater species are caught (R38(O):7).

The evidence given to the tribunal by Mr Paul, and many other MAFFish scientists, was based on data for 1985, the year before the introduction of the QMS and the last full year before the statistics recording system was changed (R38(O):4). As explained by Mr Paul, there are a number of factors which make it hard to obtain consistently reliable fisheries statistics (R38(O):6). One is the difficulty MAFFish itself has in gathering and maintaining properly updated statistics, a problem which may arise from a lack of adequate resources and which regrettably appears to have worsened in recent years. Another is the inherent reluctance of fishers to provide entirely accurate information on their activities. This tendency may have been accentuated in the period under review by the inflation of catch figures prior to the introduction of quotas in 1986. These difficulties notwithstanding, evidence given by Mr Paul undoubtedly provided an informative and reasonably reliable overview of the finfish catch in the Ngai Tahu region and its relationship to the total catch for the whole of New Zealand. By volume, catches from the Ngai Tahu region accounted for approximately 74 percent of the total EEZ catch for 1987/88 (latest available figures)(R25:5).

The value of the catch in the Ngai Tahu region

9.2.3 Estimates of the value of the catch from the Ngai Tahu region, like estimates for the size of the catch, are not straight forward. As explained by Ian Clark, then chief fisheries economist at MAFFish, there are a number of statistical obstacles to be overcome in making these evaluations. An estimated TAC figure for the Ngai Tahu area multiplied by perpetuity quota trading prices, or proxies thereof, provided, in Mr Clark's view, the best assessment. This calculation, known as the quota value, gives a value of the resource over future years measured at current prices (R25:3).

Other methods of valuing the resources are based on port prices (the price fishers receive per tonne at the point of landing) and export prices. On the basis of Mr Clark's calculations values for fisheries in the Ngai Tahu region in 1987/88 (R25:5), using the three different methods, were:

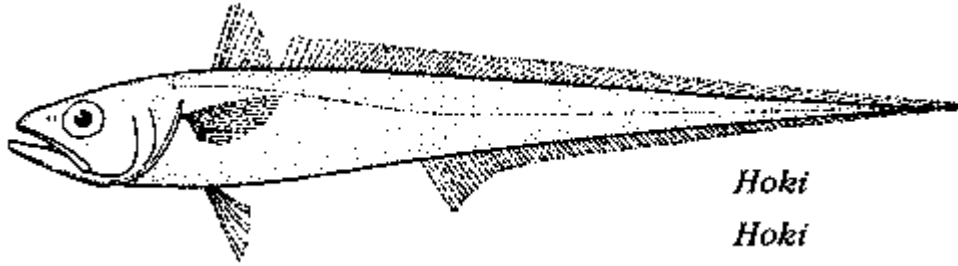
- (a) Port value - \$305 million
- (b) Export value - \$433 million
- (c) Quota value - \$540 million

The quota value of the region's harvest in 1987/88 represented 60 percent of the total quota value of \$900 million of New Zealand's fish catch (R25:5).

The species within the Ngai Tahu region

9.2.4 Thanks to the labours of Mr Paul and Mr Clark it is possible to isolate the species of the Ngai Tahu region which contribute most significantly - both in terms of volume and value - to the overall national catch. Heading the list of major deepwater species caught in the Ngai Tahu region is hoki. Almost the entire New Zealand catch of this species is taken from within the Ngai Tahu claim area. Of the 47,166 tonnes of hoki caught by commercial fishers in 1985 no less than 45,276 tonnes - 96 percent - came from the Ngai Tahu region (R38(O): table 4). Looked at in value terms the Ngai Tahu hoki catch is no less significant. According to Mr Clark's figures, hoki within the Ngai Tahu region had a quota value of just under \$150 million dollars (R25:5).

Orange roughy is another species found disproportionately in the Ngai Tahu region. Mr Paul states that 79 percent of the national catch in volume - or 40,787 tonnes of a total of 51,543 - was taken from this region in 1985, mainly from around the Chatham Islands (R38(O):table 4). In value terms - as calculated by Mr Clark for 1987/88 - orange roughy caught in the Ngai Tahu region was worth around \$100 million (R25:5). This, in fact, is a conservative figure as Mr Clark includes only a portion of the valuable Challenger Plateau resource (R25:3).



Hoki and orange roughy are not the only lucrative species to be caught primarily in waters off the Ngai Tahu region. All but one percent of the entire New Zealand harvest of oreo dories, worth \$16.5 million dollars in 1987/88, come from offshore grounds in the Ngai Tahu region, principally on the South Chatham Rise and off the South Canterbury/Otago coast (R25:5). Ling, hake, spiny dogfish, and silver warehou catches are also taken predominantly in Ngai Tahu waters (R38(O):table 4). These four species have a combined quota value of more than \$45 million (R25:5). The southern blue whiting catch is caught entirely within the Ngai Tahu region with a total catch of 8,011 tonnes (R38(O):table 4). Other major fisheries occurring in the Ngai Tahu region are red cod and barracouta, with more than 80 percent of both species being caught in the region (R38(O): table 4).

As these figures clearly reveal, fisheries within the Ngai Tahu region now form a most significant part of the modern fishing industry.

Table 9.1: Percentage of total New Zealand catch in tonnes caught in the Ngai Tahu region in the 1985 calendar year (taken from evidence of Lawrence James Paul, R38(O):table 4)

| | Total NT | Total NZ | NT as % |
|----------------|----------|----------|---------|
| | catch | catch | of NZ |
| Orange roughy | 40 787 | 51 543 | 79% |
| Hoki | 45 276 | 47 166 | 96% |
| Oreos | 23 599 | 23 881 | 99% |
| Barracouta | 18 629 | 22 485 | 83% |
| Red cod | 15 479 | 18 153 | 85% |
| Jack mackerel | 1 633 | 15 308 | 11% |
| Silver warehou | 9 124 | 9 192 | 99% |
| Snapper | 13 9 | 133 | 0% |
| Ling | 7 717 | 8 369 | 92% |
| S blue whiting | 8 011 | 8 011 | 100% |

Gemfish 6 838 7 727 88%
Tarakihi 1 789 4 924 36%
Kahawai 635 4 385 14%
School shark 1 825 4 336 42%
Spiny dogfish 4 017 4 245 95%
Trevally 3 3 893 0%
Albacore tuna 2 182 3 638 60%
Rig 1 331 3 204 42%
Gurnard 446 3 088 15%
Soles 1 618 2 150 75%
Flounders 495 2 126 23%
Blue warehou 1 584 2 112 75%
Alfonsino 152 1 934 8%
Gropers 752 1 930 39%
Hake 1 856 1 920 97%
Skipjack tuna 1 1 860 0%
Southern bluefin 1 153 1 748 66%
Blue mackerel 24 1 699 1%
Stargazers 1 489 1 625 92%
Blue cod 1 064 1 594 67%
Bluenose 155 1 382 11%
Frostfish 384 1 268 30%
Grey mullet 0 1 003 0%
Skate 744 961 77%
White warehou 820 847 97%

John dory 3 729 0%

Elephant fish 597 691 86%

Blue moki 116 659 18%

Ghost sharks 556 639 87%

Bigeye tuna 1 561 0%

Sea perch 410 437 94%

Kingfish 4 336 1%

Leatherjacket 35 305 11%

Silverside 294 294 100%

Cardinal fish 93 271 34%

"Sharks" 217 265 82%

Silver dories 194 198 98%

Butterfish 28 126 22%

Yellowfin tuna 1 101 1%

Porae 0 98 0%

Yelloweye mullet 1 81 1%

Rudderfish 79 79 100%

Ribaldo 79 79 100%

Buttterfly tuna 50 73 68%

Parore 0 71 0%

Brill 45 53 85%

Red bait 46 46 100%

Rays bream 3 3 100%

Total All Species 204 497 285 035 72%

References

{FNTXT|0-86472-103-X|9.1.1|1}1 New Zealand Fishing Industry Board (NZFIB) Economic Review 1990 pp 18, 24 & 44

{FNTXT|0-86472-103-X|9.1.1|2}2 *ibid* p. 15. Figures on investment in the industry are unclear. An idea can, however, be attained by looking at the industries annual costs which for the 1988/1989 were \$937.1 million, (*ibid* p 24); see also AA43:13

{FNTXT|0-86472-103-X|9.1.1|3}3 New Zealand Official 1990 Yearbook; Te Pukapuka Houanga Whaimana o Aotearoa Department of Statistics Wellington 1990 p 603

{FNTXT|0-86472-103-X|9.1.4|4}4 NZFIB Economic Review pp 7 and 22

{FNTXT|0-86472-103-X|9.1.4|5}5 *ibid* table 3 p 22

{FNTXT|0-86472-103-X|9.1.4|6}6 NZFIB Economic Review p 7

{FNTXT|0-86472-103-X|9.1.4|7}7 *ibid*; see also R21:5(b)

{FNTXT|0-86472-103-X|9.1.4|8}8 *ibid*

{FNTXT|0-86472-103-X|9.1.4|9}9 *ibid* pp 47-48

{FNTXT|0-86472-103-X|9.2.1|10}10 *ibid* p 17

Waitangi Tribunal, Department of Justice, Wellington.