

# **RETREAT FROM THE FRONTIER: FISHING COMMUNITIES IN NEW ZEALAND**

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## INTRODUCTION

Resource communities<sup>1</sup> in New Zealand have historically depended on a multiple resource base (e.g. mining, fishing, forestry, agriculture) to sustain their economy and social structure. As a natural resource has been exhausted (e.g. whales, gold, indigenous timber), or commodity prices have fallen, residents of resource communities have adapted by switching to other economic activities (McClintock, 1999: 71). This frontier approach to economic development has diminished as the importance of the sustainable management of natural resources has been acknowledged by policy and legislation (e.g. the Fisheries Act, 1983, and the Resource Management Act, 1991).

Traditional fishing communities are positioned on the boundary between society and the nation's fisheries resources. At the frontier of society's exploitation of the marine environment they are always vulnerable to the depletion of specific species. Government regulation of the fishing industry in New Zealand has been a key influence on the management systems and technology used. Increased vessel size and reduced numbers have meant marked changes for fishing ports. There have also been changes in resource ownership, with major industry players consolidating their interests in fishing, and fish processing. Subject to cycles of boom and bust, and limits to access, the associated communities are becoming more reliant on alternative uses of the marine environment, or land-based economic activities to sustain the economic welfare of their inhabitants.

The results reported in this paper are based on a review of the fishing sector in New Zealand (Baines, 1999) and case studies of Riverton, Moeraki and Havelock - three communities in the South Island of New Zealand that mainly depend on the fishing industry (McClintock, 2000; Baines and McClintock 2000; and Baines *et al.*, 2000). These case studies are part of a four year research programme funded by the Foundation for Research, Science and Technology<sup>2</sup> that seeks an improved understanding of the relationship between communities and their natural resource base. The programme has focussed on a comparative analysis of communities dependent on forestry, mining, agriculture, energy and tourism as well as fishing communities. The research has moved beyond a boom-bust model of resource cycles in localities, adding an understanding of the interconnections between resource sectors at local and sub regional levels (Taylor *et al.*, 1999).

The paper is divided into the following sections:

- ▶ the fishing sector in New Zealand
- ▶ research methods
- ▶ profiles of the three fishing communities
- ▶ boom-bust cycles and the fishing communities
- ▶ the quota management system and other government regulation of the industry
- ▶ the diversification of the regional and district economies

## THE FISHING SECTOR IN NEW ZEALAND

New Zealand has the fourth largest Exclusive Economic Zone (EEZ) in the world (1.2 million square nautical miles). The annual catch of fish from this vast expanse of ocean is only in the vicinity of 600,000 tonnes, while the annual global catch is over 100 million tonnes. New Zealand's EEZ is not well endowed with fish stocks as most of the sea is deeper than a thousand metres, and is low in nutrients (Kirkpatrick, 1999: 16).

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<sup>1</sup> Defined as "communities that stand at the interface between a society and its natural resources" (Taylor and Fitzgerald, 1988: 55).

<sup>2</sup> FRST contracts TBA601 and TBA801.

During the latter part of the twentieth century the fishing industry in New Zealand grew “from an insignificant coastal fishery into a major export earning sector with a deep-sea orientation, but with substantial shellfish and crustacean production” (Le Heron, 1996: 154). The industry has evolved from a fleet of small owner-operated vessels catering almost exclusively to domestic markets with resources harvested from the relatively shallow, inshore fisheries, into a diversified, technologically sophisticated industry that exports large volumes of fish to world markets. All the main species, except tuna, are processed in shore-based facilities or in factory vessels, and ‘vertical integration’ has become standard practice for the major companies. New Zealand vessels now take 63 per cent of the total annual catch (Statistics New Zealand, 1999). Although the sector is dominated by a few major companies their ownership remains largely in New Zealand hands; with three groups of companies - Sealord Products Ltd, Sanford Ltd, and Amalgamated/Talleys - controlling 57 per cent of the total allowable commercial catch in 1995 (New Zealand Fishing Industry Board, nd: 35).

Over the last twenty years, the fishing sector in New Zealand has boomed, although the number of registered commercial fishing vessels in New Zealand has declined from 4,595 in 1983 to 2,245 in 1997 (Department of Statistics, 1984; Statistics New Zealand 1998). A large number of fishers with smaller boats have left the industry, while the number of larger vessels capable of harvesting the deep sea species has increased. There has been a concentration of these larger vessels, processing facilities, and the ownership of quota at the major ports (e.g Nelson, Bluff, Dunedin), while there are fewer operators of smaller boats based at minor ports such as Riverton, Moeraki and Havelock.

Many new jobs have been created in the industry with the number of employees increasing from 5,680 in 1980 to 11,280 in 1997, while the value of exports from the sector has grown from \$168 million in 1981 to \$1,125 million in 1997 (Department of Statistics, 1983; Statistics New Zealand, 1999). An important trend over the last decade has been the employment growth in fish processing, which has begun to out-strip growth in harvesting jobs.

The role of government with regard to managing the nation’s fisheries has evolved from a largely non-interventionist approach, through several stages of increasing regulation, to the establishment and operation of the quota management system.

The quota management system (QMS) was established by the Fisheries Act of 1983. It was designed to facilitate the operation of market forces to allow quotas of certain species to be traded between fishing operators (Nightingale, 1992: 224). The QMS controls activities in New Zealand’s fisheries by imposing catch limits, and regulating the methods, areas and timing of those activities. Every year the Ministry of Fisheries assesses the total allowable commercial catch (TACC) for a species, and allocates the TACC in the form of individual transferable quota (ITQ) to fishing operators. The ITQ is a tradeable property right that permits operators to harvest a quantity of a particular species within an area designated by the government (Le Heron, 1996: 155).

The jury is still out with regard to assessing the success (or failure) of the QMS in ensuring that fish stocks are being managed on a more sustainable basis. Wallace (1998: 8), for instance, claims that “The capacity of the New Zealand Quota Management System to achieve environmental goals has not been demonstrated. Fish stock sustainability is unknown in the majority of cases.” Annala (1996: 60), by contrast, observes that catches of deep water species have increased substantially thereby providing “a strong economic base for the development of the New Zealand fishing industry”. Other commentators, while conceding that the QMS may have reduced over-fishing, believe it has favoured major companies at the expense of small fishers (Memon and Cullen, 1992).

## RESEARCH METHODS

A variety of research methods were used in our case studies of Riverton, Moeraki and Havelock. The primary focus of the case studies was on the history of these three fishing communities since the early 1970's. The methods included an analysis of census statistics, a review of published documents about the communities and fishing sector, and semi-structured interviews with key informants during field visits to the communities between November 1999 and February 2000.

All three communities are located in the South Island of New Zealand (see Figure 1). They were selected from an initial sample of ten fishing communities<sup>3</sup> to represent different phases in the development of the fishing industry in their regions.

## PROFILES OF THE THREE FISHING COMMUNITIES

Riverton, a town on the southern coast of the South Island, had a population of 1,830 in 1996. It is a service centre for the fishing industry and local farmers, and was founded in 1834 as a base for the catching and processing of seals and whales. With a good harbour, the development of the agricultural and sawmilling industries, and the discovery of gold in the district, Riverton grew rapidly between 1850 and 1880. Early settlers caught fish for their immediate needs and for sale to people at the mining settlements of Roundhill and Orepuki. By the 1890's there was a fleet of fishing vessels and packing sheds at Colac Bay just a few kilometres from Riverton. The level of commercial fishing from Colac Bay decreased after 1920, and it was a part-time occupation for most fishers in the district until the late 1940's. The people of Riverton depended on the fishing, agricultural and meat processing industries for their livelihood between 1950 and 1970. The fishing fleet continued to grow, and many part-time fishers were also employed as seasonal workers on farms or at nearby meat processing works. After the discovery of abundant supplies of rock lobster off the Fiordland coast, the fishing fleet at the port experienced a boom period until 1980, when declining catches of rock lobster and paua (abalone) forced many operators either to leave the industry or to move to other ports.

Moeraki, a small port in North Otago on the south-east coast of the South Island, had just under a hundred residents in 1996. The port's economy is closely linked with that of the township of Hampden (population 306 in 1996) which is a few kilometres to the north. Maori, the indigenous people of New Zealand, occupied the Moeraki Peninsula from the 13<sup>th</sup> century. They harvested ling, red cod and barracouta from the coastal waters around the peninsula. European occupation of the district began in 1836 when a station was established to harpoon whales from long boats. In just over a decade the whales had disappeared from the coastal waters, and only six families stayed at the port, subsisting on fishing and cultivating small plots of land. Moeraki remained an isolated community of subsistence farmers and fishers until the demands of the Dunedin market (the nearest city) led to the growing of crops on a commercial basis. This practice of combining fishing with small-scale farming persisted until the middle decades of the 20<sup>th</sup> century. Government regulations hindered residents from further developing their agricultural activities as they were not permitted to market their produce from unregistered livestock. Fishers based at Moeraki have been heavily dependent on one major species - rock lobster (crayfish) - during the last forty years. Over the last decade several new ventures have begun to capitalise on the tourism potential of the Moeraki Peninsula. These developments have supported the district economy at a time when declining catches of rock lobster have affected the financial viability of commercial fishers operating out of the port.

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The other seven communities that were part of our initial sample (McClintock, 1999: 26-49) were Ruawai, Leigh, and Coromandel (all in the northern part of the North Island); Motueka and Kaikoura (northern part of the South Island); and Bluff and Stewart Island (southern coast of the South Island). Brief profiles were prepared for each of these communities.

Havelock is the service centre for the mussel farming and processing industry in the western Marlborough Sounds. Situated at the head of Pelorus Sound on the northern coast of the South Island, the township had a population of 504 in 1996. Gold, indigenous timber, and flax provided the basis for an initial burst of development for the district during the 19<sup>th</sup> century, but after these resources were exhausted, commercial fishing and dairy farming became the major economic activities during the first half of the 20<sup>th</sup> century. By the 1970's much of the farm land in the Marlborough Sounds had reverted to bush, and the catches of commercial fishers were in decline as the stocks of snapper and flounder had been depleted. The declines in these two resource industries, however, were offset by the planting of large areas of exotic forests, by the growing number of people from other parts of New Zealand buying holiday homes or visiting the district, and by the establishment of marine farming in the Sounds with processing facilities at Havelock.

## BOOM-BUST CYCLES AND THE FISHING COMMUNITIES

The first major theme emerging from these case studies is the impacts of the boom-bust cycle in the fisheries on the communities. Both Riverton and Moeraki were in the bust phase at the time of our field research, while Havelock was experiencing the effects of growth from marine farming.

The main species of fish harvested by vessels off the southern coast of the South Island are blue cod, rock lobster (crayfish) and paua; with the latter two species being the most economically significant. The industry's contribution to the regional economy has varied with the fluctuations in the fish stocks around the coasts. Booms in particular fisheries (e.g. rock lobster) have attracted newcomers to the region and generated strong economic growth in some localities, while the depletion and restrictions on the harvesting of particular species (e.g. oysters) has put financial pressure on individual operators.

Only a handful of vessels operated commercially out of Riverton in 1950, but the rock lobster boom and the revival of the blue cod fishery, led to a dramatic growth in the number of boats registered at the port during the 1970's. Official statistics record that there were 118 vessels registered there at the end of that decade. By 1997, however, the number of boats was more than halved to 50 as the stocks of rock lobster and paua dwindled, and small operators withdrew from the industry. The fleet operating from Riverton continues to harvest blue cod, and other species of wet fish, as well as decreasing quantities of rock lobster and paua.

The declining number of boats working out of Riverton has reduced the turnover of firms with direct links with the industry as well as that of food retailers and other local firms that have less direct links with the industry. The rock lobster and paua booms between 1970 and 1985, however, were prosperous years for the town's business sector. Fishers built expensive houses in the town in the 1970's, and furnished them well. It was not uncommon for fishers at this time to take large quantities of meat, groceries, and beer with them on their trips, and they were sometimes away for a month at a time. They also made generous donations to community organisations, purchased expensive cars and got involved with horse racing. Several fishers and their families moved out of Riverton after the end of these booms and migrated to Australia to continue fishing.

The fishing fleet based at Moeraki in the 1950's and early 1960's predominantly harvested groper, although other species such as blue cod and rock lobster were also caught. At that time the value of rock lobster was low, and it did not become a valuable species until it was harvested for export during the 1960's. The 1960's were a boom period for fishers harvesting from the rock lobster fishery off the Otago coast, and since then the species has provided the bulk of the income for fishers based at Moeraki. Other species are viewed as an adjunct to the main activity as catches of wet fish fetch lower prices than those of rock lobster.

The population of rock lobster in the Otago fishery is affected by the mass emigrations of the species. There were emigrations of rock lobster in 1982-1983 and 1993, and since then there has been no significant recruitment of new rock lobster to the population of the fishery. After 1993 the volume of the rock lobster catch dropped away, although prices strengthened with the introduction of live exports. The depletion of the

rock lobster fishery reduced the number of registered fishing vessels at Moeraki from 36 in 1976 to 15 in 1997. Some fishers have consolidated their operations onto fewer boats, while others have based their vessels at other ports such as Oamaru, Dunedin, and Bluff. Other experienced fishers have sold their boats and are without jobs, although their knowledge and skills may eventually prove useful for the charter operations from the port that have been established for recreational fishers.

The effects of this boom-bust cycle on the business sector at Moeraki were of a much smaller magnitude than was the case for Riverton. Moeraki has never had a population base of sufficient size to support even a small number of retail shops. Neither are there any firms based in Moeraki that either process fish or provide services to the industry. There were packing facilities at the port, but they are now closed and the catch is taken to Oamaru or Dunedin for processing. Moeraki does have a range of other economic activities; including a motor camp, motels, a restaurant, a distributor of orthodontist consumables, and a firm that combines R & D services for distilleries with print jobs; but they do not have close links with the commercial fishing industry.

Over the last three decades of the 20<sup>th</sup> century Havelock has experienced the transition from wet fish to marine farming; with the number of registered fishing vessels at the port declining from 78 in 1976 to 13 in 1997. This transition into mussel harvesting arose from the decline of small-boat wet-fishing, and the collapse of the scallop industry. In the 1970's most mussels were harvested closer to Havelock, in Kenepuru and the inner Pelorus Sound, while fishers had to travel nearer to Nelson and Picton to catch wet fish and scallops. By 1976 about 200 applications had been received to operate mussel farms in Pelorus Sound. A number of these applications were from commercial fishers. Some people set themselves up as contractors, specialising in harvesting and farm servicing, while share farming arrangements also evolved as people became aware of the amount of time required by this type of operation. The influx of people into Havelock was initially driven by people wanting to establish their own mussel farms; then the farms began to employ people for servicing and harvesting, and subsequently mussel processing created a demand for more labour. By 1998 the number of mussel farms in the Marlborough Sounds had grown to 478, and they occupied 2,055 hectares of coastal waters.

The ownership of mussel farms has changed radically over the last 25 years. There are fewer 'hands-on' owners as economies of scale have prompted family operators to sell out to large companies which employ contract workers to harvest the mussels. Moreover, there has been considerable aggregation of farm/licence ownership, with two companies, Pacifica Seafoods Ltd and Sanford Ltd, owning about 150 farms between them. Sanford Ltd operated five harvesting boats in 1999, and employed about 180 people in its harvesting and processing activities at Havelock.

Investment in the mussel industry has provided a better infrastructure for other sectors of the district economy (e.g. better port facilities for recreational users of the marina). There are also a lot of economic flow-on effects for local firms such as engineering workshops, boat builders, mooring suppliers, slipway repairs, transport operators, retail shops, the local hotel, and garages. These effects have generally been positive since the boom in mussel farming began around 1985, although the algal bloom which closed mussel harvesting for several weeks in 1993 put a lot of strain on the district economy. Not all of the flow-on effects of this boom are retained within the district economy however. Although Sanford's factory obtains its raw resource from the Marlborough Sounds, hires employees from the district, and purchases fuel and incidental supplies and services from local firms, it obtains other inputs from further afield.

## THE QUOTA MANAGEMENT SYSTEM AND OTHER GOVERNMENT REGULATION OF THE INDUSTRY

The second theme arising from the case studies concerns the impact of the quota management system (QMS) and other government regulation on the industry.

Although the QMS has allowed fish stocks around the southern coast of the South Island to be harvested on a more sustainable basis, it has had a number of significant effects on other aspects of the operations of the industry. The QMS has capped the amount fishers are permitted to catch unless they can lease or buy more quota. It has allowed fishers to plan better, and has added more certainty to their operations. There has been a lot of trading of ITQ in the region and the price of owning and leasing quota has been pushed up. The downside is that some older fishers based at Riverton have sold out. Their quota has been purchased or leased out by processing companies who in turn have subleased it to other fishers who agree to supply the quota, and any other quota they own, to the processing companies. Fewer young fishers are entering the industry. They must lease quota, and this means they earn lower margins on the fish they sell. Thus these younger fishers take a long period of time to build up sufficient capital to purchase quota.

Riverton had a lot of seasonal fishers catching rock lobster during the boom years. The costs of leased quota, quota management fees, and registration fees, have made this activity unattractive to part-time and seasonal fishers, and many of them have left the industry. Some of those fishers who left the industry were partially literate and frustrated by the record keeping required by the QMS. Yet they had a comprehensive knowledge of their fishing territory and were good conservators.

Prior to the introduction of the QMS the stocks of gopher, cod, and rock lobster off the Otago coast had been seriously depleted. The QMS has had several effects on the operations of the industry in the region that have offset some of the benefits derived from the improved management of the fish stocks. Poor catches of rock lobster in the 1990's exacerbated the financial viability of many owner-operators based at Moeraki, who sold off their quota to fund their fishing activities and maintain their boats, without realising that their decision to sell quota was irreversible. This situation has been compounded by reductions in the TACC of rock lobster in the Otago fishery over the last decade from 179 tonnes for 1990-1991 to 139 tonnes for 1999-2000. In the past two years the fishery has been under pressure as rock lobster has comprised only 25 to 30 per cent of the total catch landed at Moeraki when it normally would be expected to be about 70 per cent of the catch. The combined effect of these factors has been to drive up the price of rock lobster quota from \$28 per kilogram in 1991 to \$65-70 per kilogram in 1999. As has happened with other species these high prices for quota make it difficult for young fishers to enter the industry.

Another effect of the implementation of the QMS has been the difficulties of avoiding by catch within 20 miles of the Otago coast where there are so many overlapping species. The 'deemed values' at which the government purchases the by catch are so low that fishers often incur a debt by bringing the by catch into port.

The administration of the QMS has required fishers to document their catch, to incur additional administrative expenses, and to change some of their harvesting activities. Individual operators have also experienced financial pressures resulting from recent increases in regulatory costs including the levies remitted to the Ministry of Fisheries and the fees paid (e.g. for an annual survey) to other government agencies, with the result that some of them have sold off quota to meet their levies.

Another major issue for fishers based at Moeraki is that of access to the wet fish fisheries off the Otago coast. Some of them have sold their quota to major companies, such as Ngai Tahu Fisheries<sup>4</sup> and Sandford Ltd, which make financial returns from both the ownership and processing of particular species, while lease-dependent fishers only generate revenue from their harvesting activities. Leaseholders pay the companies rental for the quota whether they catch the limit or not, and this has placed some of them under financial pressure. Fishers who own some quota are in a better position than lease holders, however, as they have some leverage to buy or lease other quota and can choose the processing company to which they sell their catch.

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Owned by a major South Island Maori tribe.

These findings from the case studies of Riverton and Moeraki indicate that many aspects of the QMS (e.g. the recording of the catch, the management of by catch, the fixed rental of quota) favour major companies at the expense of small operators who lack the administrative skills and capital to maintain their position within the industry.

Mussel farming in the Marlborough Sounds is regulated by the Marlborough District Council (the local territorial authority) and the Ministry of Fisheries. Five years ago, there was a big rush on mussel farming applications, until space on the inner coastline ran out. The introduction of the Coastal Marine Zone 2 designation as part of the new district plan has led to a new rush of applications for deeper water. The Ministry of Fisheries has recently refused one permit for mussel farming in the Sounds, and may decline others, as its criteria is an “undue adverse effect on an existing fishery” whether it be commercial, recreational or traditional. Unlike the QMS for other marine species, there is no formal reporting to the Ministry of Fisheries of the tonnages of mussels harvested.

## DIVERSIFICATION OF THE REGIONAL AND DISTRICT ECONOMIES

The third theme emanating from the case studies reveals that the fishing communities are becoming more reliant on alternative uses of the marine environment or land-based economic activities to reduce their dependence on fisheries that are subject to cycles of boom and bust restricted access, and greater government regulation.

Although Riverton, Moeraki and Havelock, are communities that have depended mainly on commercial fishing or marine farming as their economic base, they have also relied on other natural resource sectors of the district and regional economies (e.g. farming, forestry) to contribute to the welfare of their residents. As fish stocks have become depleted, and access to those stocks has become more restricted, there has been more urgency in these communities to switch to less traditional forms of economic activity (e.g. tourism) to offset the declining returns from the marine environment.

Riverton’s location on the southern coastal highway, for instance, provides business people with an excellent opportunity to take advantage of the growing number of domestic and international visitors to Fiordland who pass through the district. Over 2,000 people stayed at least one night in the district between September 1997 and March 1998, and between them spent \$60,000 in the town (The Western Star<sup>5</sup>, May 1998). A tourism entrepreneur, based in Queenstown, operates the Riverton Rocks Guest House, a backpackers hostel at the Globe Hotel, and Kiwi Wilderness Walks to cater for visitors attracted by the scenic beauty of the region, while a commercial fisher from Riverton takes tourists deep sea fishing. Furthermore, events such as the Riverton Carnival and the Festival of the Horse attract hundreds of visitors from Invercargill and other parts of Southland during the summer.

Local community leaders and the Southland District Council have tried to enhance Riverton’s image as a tourism destination for both domestic and foreign visitors through a series of projects that were initiated by a concept plan developed seven years ago. The projects have focussed on events that will attract visitors and improve the district’s amenities.

A recent innovation by operators of fishing vessels at Moeraki has been the development of two chartering operations to cater for the needs of recreational fishers. A family partnership pioneered one of these ventures at the port three years ago. It converted a commercial fishing boat to charter survey standard by equipping it with additional safety gear. The customers come from Otago and Canterbury and are taken to the inshore fishery on the weekends to catch blue cod and groper.

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A monthly newspaper.

The Moeraki Promotions Group was formed some years ago by local community leaders. It has established two heritage trails, one at Moeraki in 1993 and another at Herbert in 1999, and collaborates with regional tourism promoters to attract visitors to the district. The motor camp, motels and restaurant at Moeraki, and other firms providing food and accommodation in Hampden, however, have benefited from the development of Moeraki as a base for recreational fishing and the nationwide promotion of the Moeraki Boulders<sup>6</sup> as a tourist destination which currently attracts about 400,000 visitors per year. The nearby restaurant is particularly busy from the middle of November to May when up to 18 buses a day may stop there. Many of the patrons of the motor camp and the motels are New Zealanders who bring their boats for two to five days of fishing.

The experience of Havelock is different from that of the other communities as the decline in commercial fishing activity has been replaced by the growth of marine farming and ancillary enterprises, and the development of tourism activities which have diversified and strengthened the economic base of the district. Individual enterprises have also diversified their income streams as various activities (e.g. pastoral farming) have been combined with mussel harvesting.

The tourism sector in the district employs many local residents, including part-time and casual workers. Malcolm (1999: 25), a travel writer, describes Havelock as a “town of character” where “old wooden buildings have been retained and many of them tartered up and put to good use as museums, antique or craft shops and restaurants”. In the main street, a restaurant called ‘Mussel Boys’ has been opened which uses mussels as a predominant part of its menu to whet the appetites of domestic and international visitors travelling along the Picton to Nelson coastal route. The visitors attracted by the restaurant often patronise the antique and craft shops in the township. By its nature this type of custom is seasonal, and a local retailer estimates that two-thirds of the firm’s annual turnover is generated between Boxing Day and Easter. There are also several charter firms that provide cruises or fishing trips in the Marlborough Sounds.

## CONCLUSION

Fishing communities in New Zealand have experienced the familiar boom-bust cycle which is typical of industries that exploit a natural resource. Government intervention in the form of the QMS, while restricting access to particular commercial species to prevent further depletion of stocks, has in many cases separated ownership of quota from harvesting activities, with the result that smaller operators are finding it difficult to remain in the industry. Ownership of quota is now concentrated in the hands of a few major companies, and their vessels and processing facilities are located at major ports (e.g. Bluff and Dunedin) rather than in small coastal communities like those discussed in this paper.

Dependent on coastal fisheries that were harvested unsustainably, the commercial fleets operating out of Riverton, Moeraki and Havelock have been severely reduced over the last couple of decades. This downturn in fishing activity has had serious consequences for the economic and social viability of these communities, and each of them is seeking to diversify its economic base. Mussel farming in the Marlborough Sounds has assisted Havelock to overcome the effects of a decline in commercial fishing activity, but in future it will face further constraints to growth as the amount of coastal water available for mussel harvesting is likely to be limited by planning restrictions or biological factors. All three case study communities have adopted strategies to develop tourism activities in their district; with Moeraki and Havelock developing as ports for recreational fishing and boating.

With the development of more sustainable practices by the fishing industry, and a more diversified economic base, these communities are likely to experience less pronounced cycles of boom and bust in their economies.

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A unique geological formation on the beach.

The depletion of fish stocks, changes in resource management policy, and community strategies to diversify the district economy have assisted this retreat from the frontier of unsustainable harvesting of New Zealand's fisheries (see Figure 2). Yet as these communities retreat from the frontier by developing alternative marine or land-based economic activities that are also dependent on natural resources, they may still find themselves entrapped in further boom-bust cycles. These cycles will continue to have consequences for community formation and change.

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Figure 1: New Zealand Fishing Communities

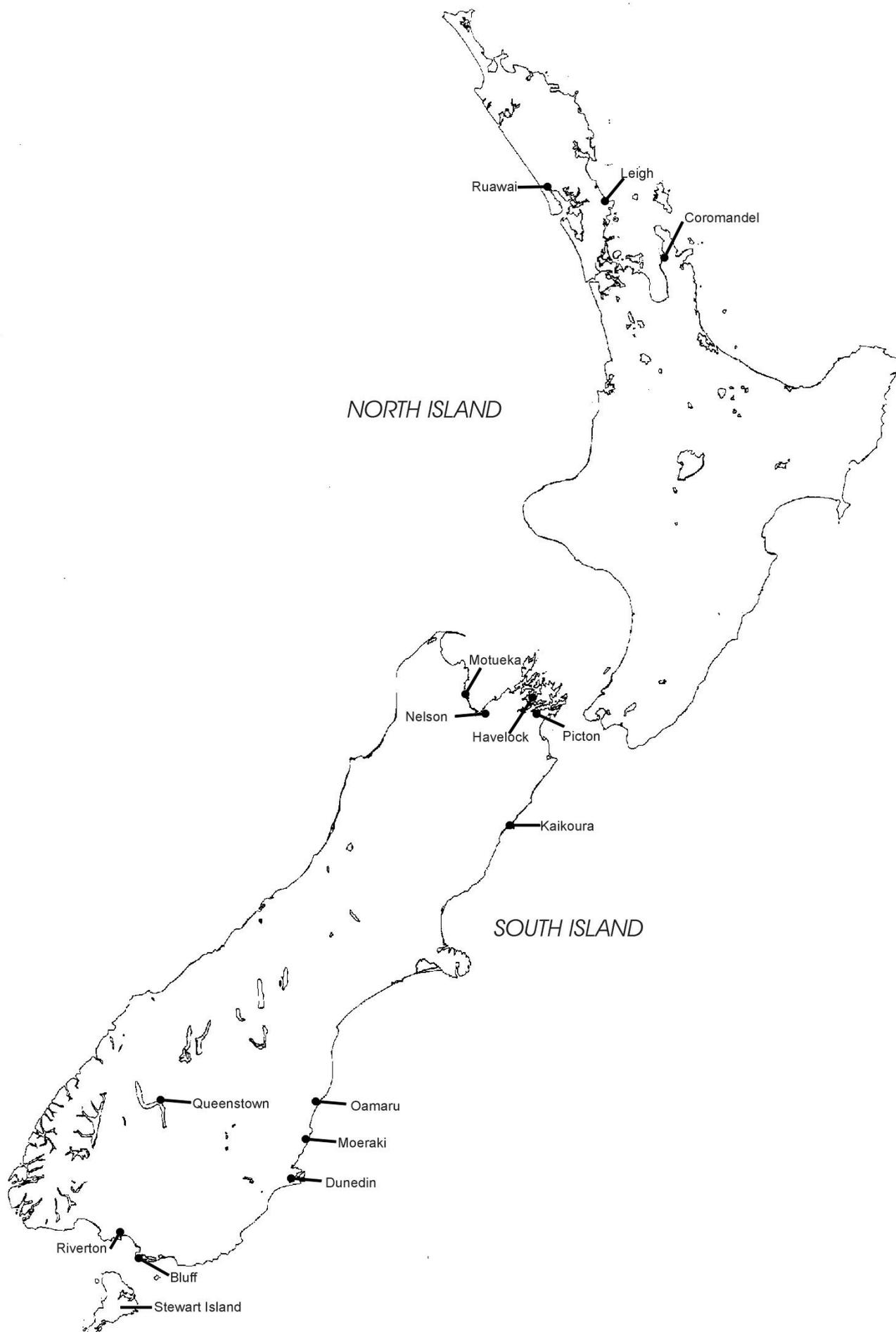


Figure 2

## Fishing Communities

The shift to a more sustainable economic base

