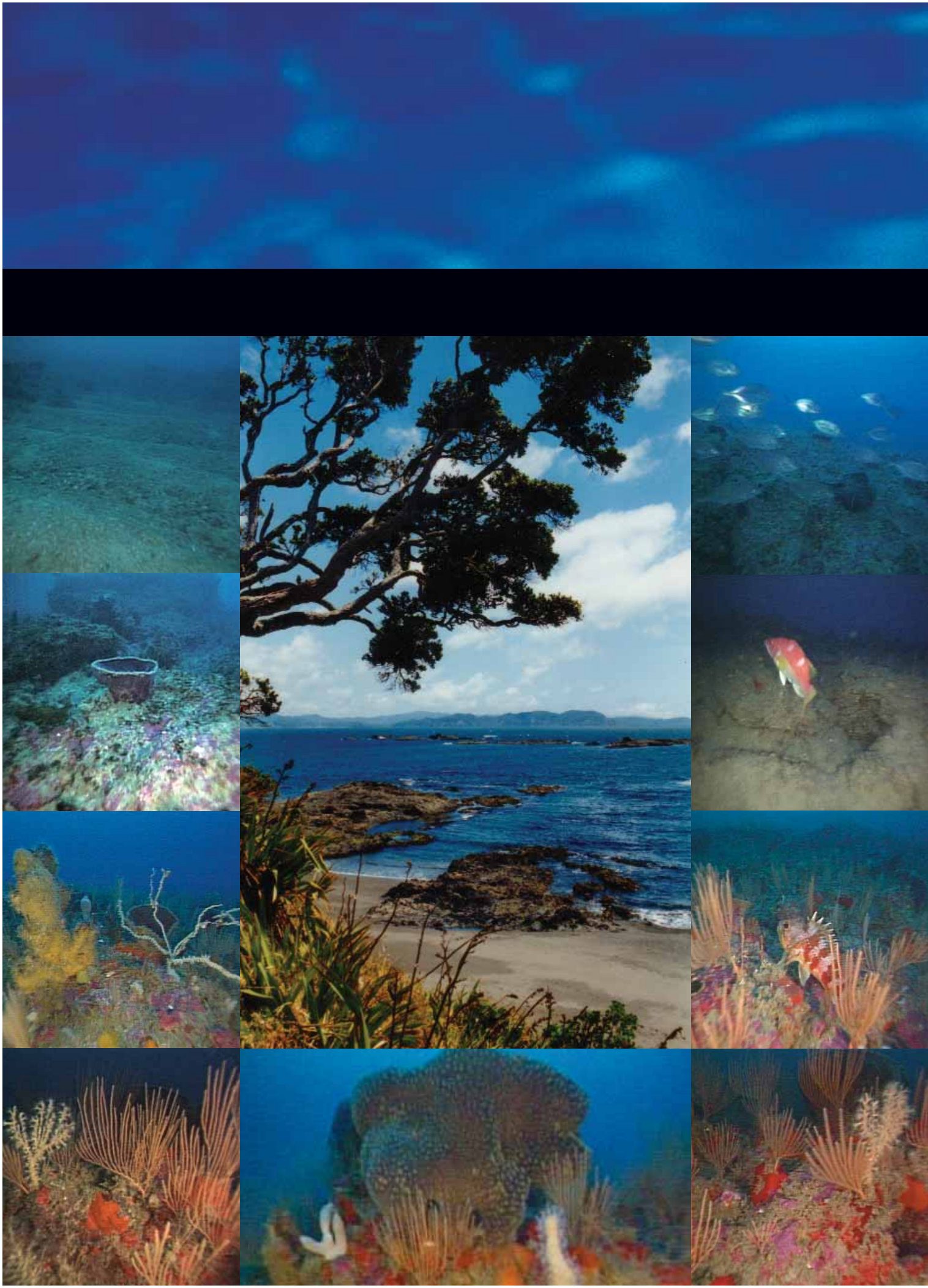
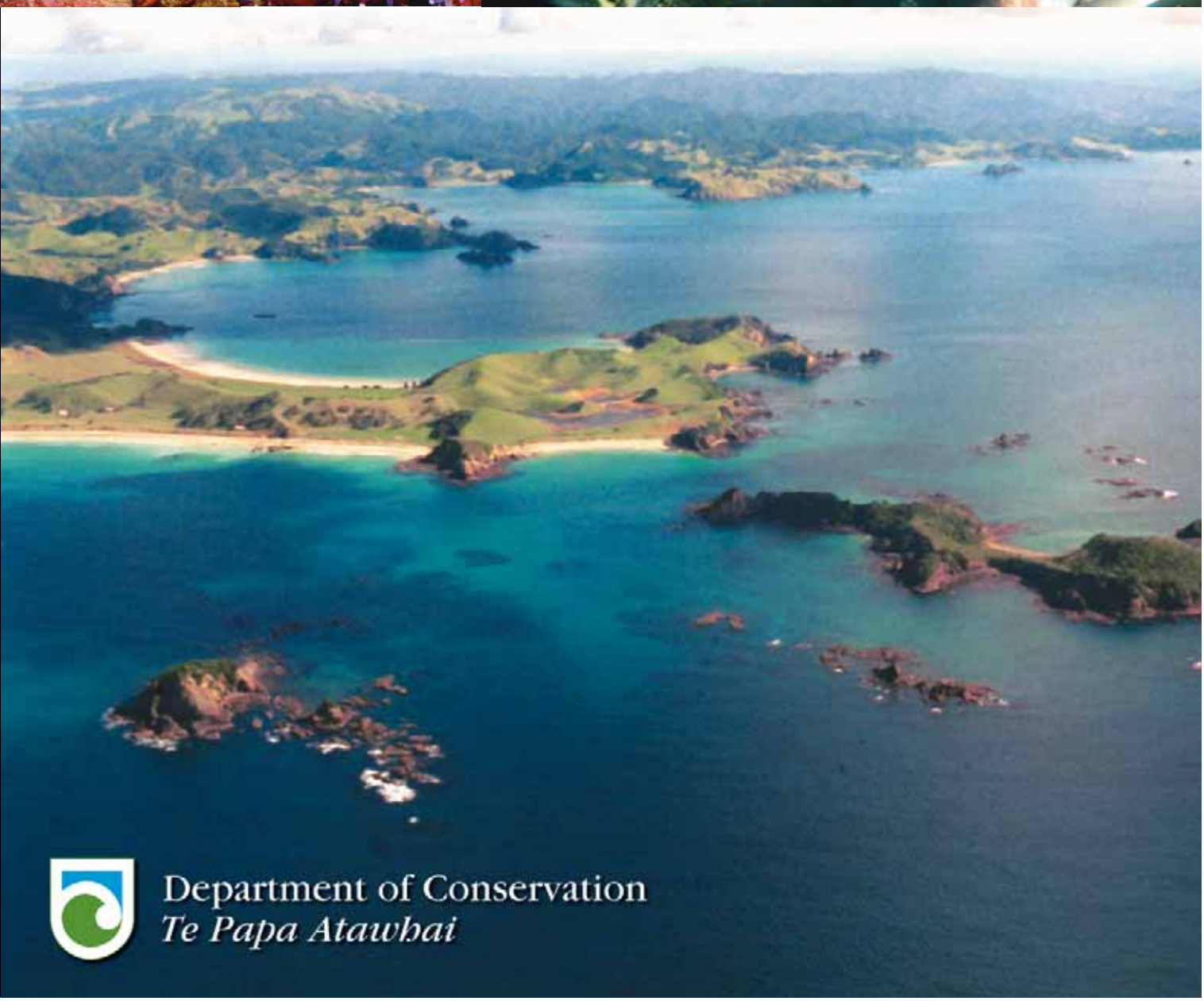


Marine Reserve Proposal

Mimiwhangata: Community Discussion Document



Department of Conservation
Te Papa Atawhai

Preface

The Department of Conservation (DoC), supported by Kaumatua of Te Uri O Hikihiki hapu, are proposing that a Marine Reserve be created at Mimiwhangata. Currently Mimiwhangata is a Marine Park, which allows for restricted fishing. The proposed Marine Reserve would cover the majority of the Marine Park, and would be extended to include the deepwater reefs adjoining the Marine Park. All disturbances, including fishing, would be prohibited in the Marine Reserve. This area contains a wide range of sea life.

The purpose of this document is to inform the community and to ask for consideration, comment and participation.

Contents

Marine Reserve Proposal Mimiwhangata: Community Discussion Document

Compiled by V. C. Kerr and Dr R. V. Grace

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Kaumatua Statement

The Statement of Houpeke Piripi, Kaumatua of Ngatiwai Iwi and the hapu of Te Uri O Hikihiki

November 12, 2003 English translation by Mere Piripi

"Ki te tangi a Tukāiaia, kei te moana a Ngatiwai e haere ana"

Ko tenei whakatauki, mō te iwi ō Ngatiwai, he uri nō ngā tūpuna maha I noho ki te taha moana, I mohio ratou, ki ngā tauranga, ngā tapu, me ngā ma taitai o tenei wāhi. Koianei te take, te korero I runga ake nei, "ko Ngatiwai" he tamariki no te moana. O ratou taniwha he ika, he mango, he whai, he kaahu, he tuatara.

Ki ahau nei, kia kaha tatou ki te tiaki a tatou kai moana, aha koa he aha, na te mea kei te ngaro haere, hore kau e tino nui ana nga kai mataitai inaianei kaua e tukinotia. Kei memeha, kei ngaro.

Ki toku nei whakaaro, me whakatu he "Rahui Tapu", mo nga tau rua tekau, rua tekau ma rima ranei, kia tipu ai he rimurimu hei whangai I nga ika nga kina paua me era atu kai mataitai o te moana. Hei aha? Hei whangai I o tatou uri kei te tipu ake. He moemoea tenei, mo tatou e Ngatiwai.

No reira, e nga uri, ara mai tatou ki te tautoko ite kaupapa I raro I nga manaatitanga maha a to tatou Matua I te Rangi.

"Ki te tangi a Tukāiaia kei te moana a Ngatiwai e haere ana"
"When the Molly Hawk cries out at sea, Ngatiwai tribe is on the move at sea. When the Molly Hawk cries over the land, Ngatiwai move inland."

This paragraph above is about the tribe of Ngatiwai who are descendants of their many ancestors who lived along the coastal areas, and who knew the sacred fishing grounds, and the seabed areas of shell fish, and who respected them.

Translation:

We are children of the sea.

We need to take care of our sea food, no matter what they are, because they are becoming very scarce or near to extinction, because of the shortage of food for them. Even rare species of fish are gradually disappearing.

I myself feel that there should be a ban or a Rahui Tapu placed for at least twenty to twenty five years, to allow the sea weed to regenerate so the rare species of fish, crayfish etc. will return and grow, for our posterity to come.

This is a desire, a dream for us Ngatiwai, Auie! Let us go forth together to support this great project under the guiding influence of our Father in Heaven.

Mimiwhangata

Historical Splendour

Northland's coast once teemed with BIG fish. Old photographs show crayfish the size of small children, plentiful tuatua and mussels, and large fish in the shallows. Many people can still remember spectacular marine life as it once was.

A reality 50 years ago, this view of the sea is only a fantasy for anyone looking at the coast right now. Crayfish rarely grow as large as a cat, and truly big fish are few and far between.

However, if we fully protect areas of Northland, we can recreate some of the magical environment of years ago. If we do this, some of the experiences of our grandparents can be relived by our children and grandchildren when they visit the coast in years to come.

This booklet describes what could happen if we work together, young and old, male and female, Maori and non-Maori, the general community, government departments, volunteers and employees, to protect a very special part of the Northland coast.

Mimiwhangata, on the east coast 50 kilometres north of Whangarei, is a beautiful place, valued for its spectacular scenery, cultural heritage and history. It is a valuable place for people to visit the beach, surf, snorkel, boat, fish and relax. It is also ecologically important. The Marine Park and Coastal Farm Park contain many special habitats where a wide range of wildlife can be found.

In the 1960s the property was purchased by New Zealand Breweries. The company soon realised the area was a special part of New Zealand. It abandoned plans to build a resort in the area and set about turning Mimiwhangata into a park, both on and offshore, for all New Zealanders to enjoy.

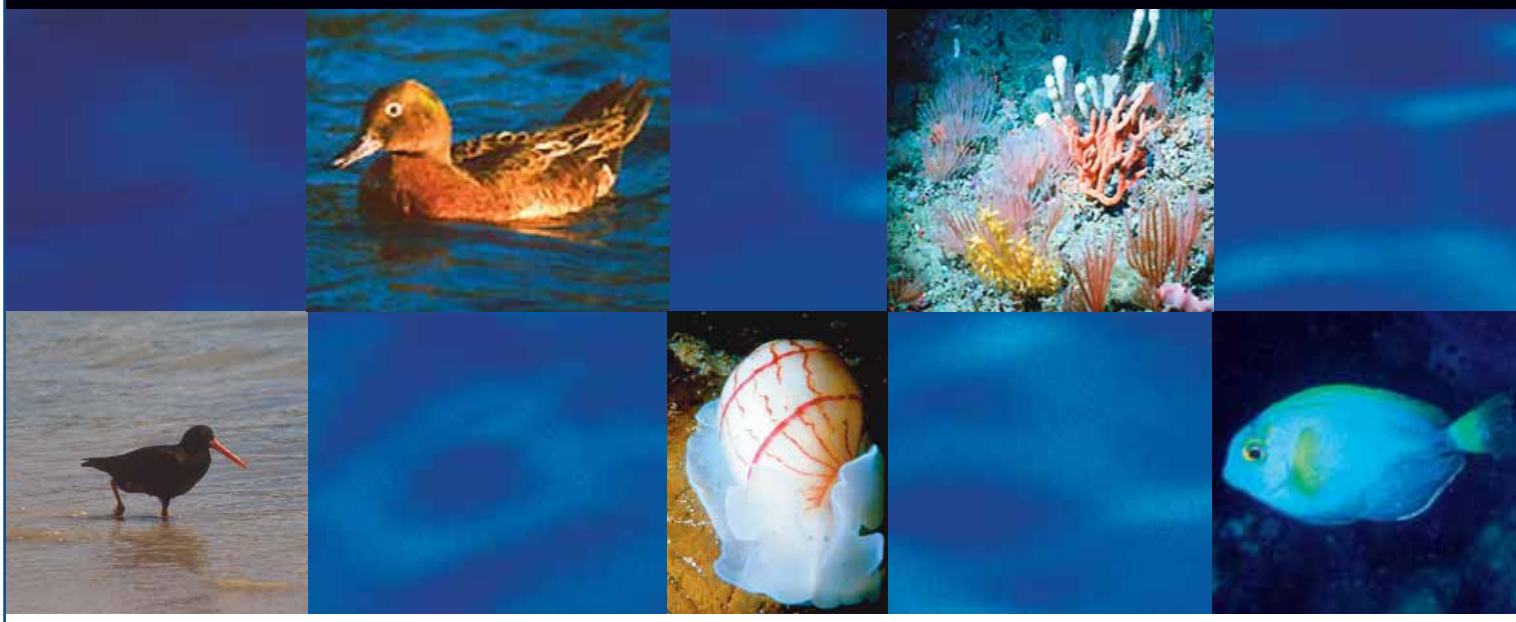
In the 1970s, New Zealand Breweries commissioned scientific studies that revealed an exceptional diversity of Northland east coast near-shore habitats within the Mimiwhangata marine area[1]. There were concerns expressed in the reports that fishing pressures were increasing and would continue to threaten the ecology of the area if special protection measures were not put in place. In 1975 a trust was set up to administer the property and work towards creating a Coastal Farm Park and Marine Park. The Coastal Farm Park was opened in 1980. Over the next few years, the Government purchased the land known as the Coastal Farm Park, and a Marine Park was finally established in 1984. There was a vision that the Marine Park would preserve and enhance one of New Zealand's special environments for people to visit and enjoy.

New surveys of the Marine Park carried out during the past three years have shown that the Marine Park's environment has not recovered, and in some respects is in a worse state than in 1980[2, 3, 4]. As the scientific investigation has progressed, members of the Mimiwhangata community, including tangata whenua/moana, local land owners, visitors, fishers, divers, scientists, environmentalists and the Department of Conservation (DoC) have begun to discuss "where to next" for the area. This proposal aims to further this discussion in the community.

(1) Ballantine W.J., Grace R.V. & W.T. Doak (1973). Mimiwhangata Marine Report. Turbott & Halstead for New Zealand Breweries Ltd, Auckland. 98p.
(2) Grace R.V. & Kerr V.C. (2002). Mimiwhangata Marine Park Draft Report 2002 - Historic Marine Monitoring Update. Report to Department of Conservation.
(3) Grace R.V. & Kerr V.C. (2003). Mimiwhangata marine monitoring programme, summer sampling 2003, update on historic monitoring. Report to Department of Conservation.
(4) Denny C.M. & Babcock R.C. (2002). Fish survey of the Mimiwhangata Marine Park, Northland. Report to the Department of Conservation. Leigh Marine Laboratory.

Damaged beauty
or potential paradise

From Left to Right: 1. The North Island variable oystercatcher breeds in the sand dunes at Mimiwhangata. 2. The endangered pateke, or brown teal. 3. A rare subtropical, red-lined bubble shell. 4. Sponges and gorgonians are abundant on the deep reefs beyond the kelp forests. 5. Young tropical surgeonfish occasionally arrive at Mimiwhangata.



Mimiwhangata is one of the most beautiful stretches of the Northland coastline. Above sea level the Mimiwhangata Coastal Farm Park stretches from Paparahi Point to Te Ruatahi. The land was once covered by coastal forest and was home to many unique plants, insects and birds including the endangered pateke (brown teal). Beyond the shoreline, Mimiwhangata Marine Park extends 1000 metres offshore. The sea once teemed with life, including tuatua, kina, scallops, crayfish, mussels and numerous species of fish. In the 30 years that biologists have been surveying the Mimiwhangata area, more than 70 species of fish have been recorded [5]. Subtropical species seldom found on the mainland coast are present at Mimiwhangata, including foxfish, combfish, spotted black grouper and tropical surgeonfish. Rare invertebrates such as ivory coral and the red-lined bubble shell are also found.

Onshore

Over the years the coastal forest was cleared for farming, removing the habitats of rare creatures like the pateke. In the past few years hundreds of people including tangata whenua, the Department of Conservation, neighbouring landowners, the Friends of Mimiwhangata group and volunteers from all over the world have worked to trap predators, cordon off special habitats and replant coastal trees on the land. The work is slow and expensive, but progress is being made to restore Mimiwhangata onshore.

Marine environment

Since the 1950s Mimiwhangata's marine environment has been extensively fished. Anecdotal evidence up until the 1970s tells a story of significant decline in both the abundance and size of fish and shellfish. Traditional knowledge held by the local hapu covers a much longer time span and tells of a far greater degree of biodiversity decline.

Mimiwhangata has an extensive historical scientific record of its marine area, spanning the years 1972 to 1986[1]. Recent studies (from 2001 to 2004) indicate no real recovery of species abundance since the surveys of the 1970s and 1980s, and include some notable declines in

(5) Grace R.V. & Kerr V.C. (2003). A marine species list for Mimiwhangata 1973-2004. Report to Department of Conservation, Northland Conservancy.

Below Left: An aerial shot of Mimiwhangata.
Below Centre: Kina grazing the edge of the kelp forest, with a spotty above.
Below Right: Kina barrens are a long-term result of reductions in snapper and crayfish numbers.

abundance of certain species. The numbers of tuatua and oysters are greatly reduced in the Marine Park. Packhorse crayfish are now uncommon with no large individuals seen in recent surveys. Red crayfish numbers have stagnated with few large animals.

Despite the Marine Park being introduced, fish abundance has not improved since the mid-1970s' surveys [2, 3]. Comparisons of fish abundance inside the Mimiwhangata Marine Park with reference sites outside the Park, and with Marine Reserves in similar habitats such as Cape Rodney to Okakari Point (Leigh), support the view that fish abundance in the Marine Park remains depressed by continued recreational fishing [4, 6].

A major habitat change has occurred at Mimiwhangata where kelp forests have been dramatically reduced. This is a fundamental change, as the forests are so productive and important as nursery areas for many marine species. Kelp forest decline and the expansion of "kina barrens" are effects now known to be largely influenced by the removal of predators of kina from the reef systems[7]. At Mimiwhangata, large snapper and crayfish are the significant predators of kina. In natural balance, the snapper keep kina numbers and their impact on the kelp in check. Over time this balance has been lost. If the current rate of kelp forest decline were to continue, the shallow reef areas would become a sea-desert compared to its natural state.

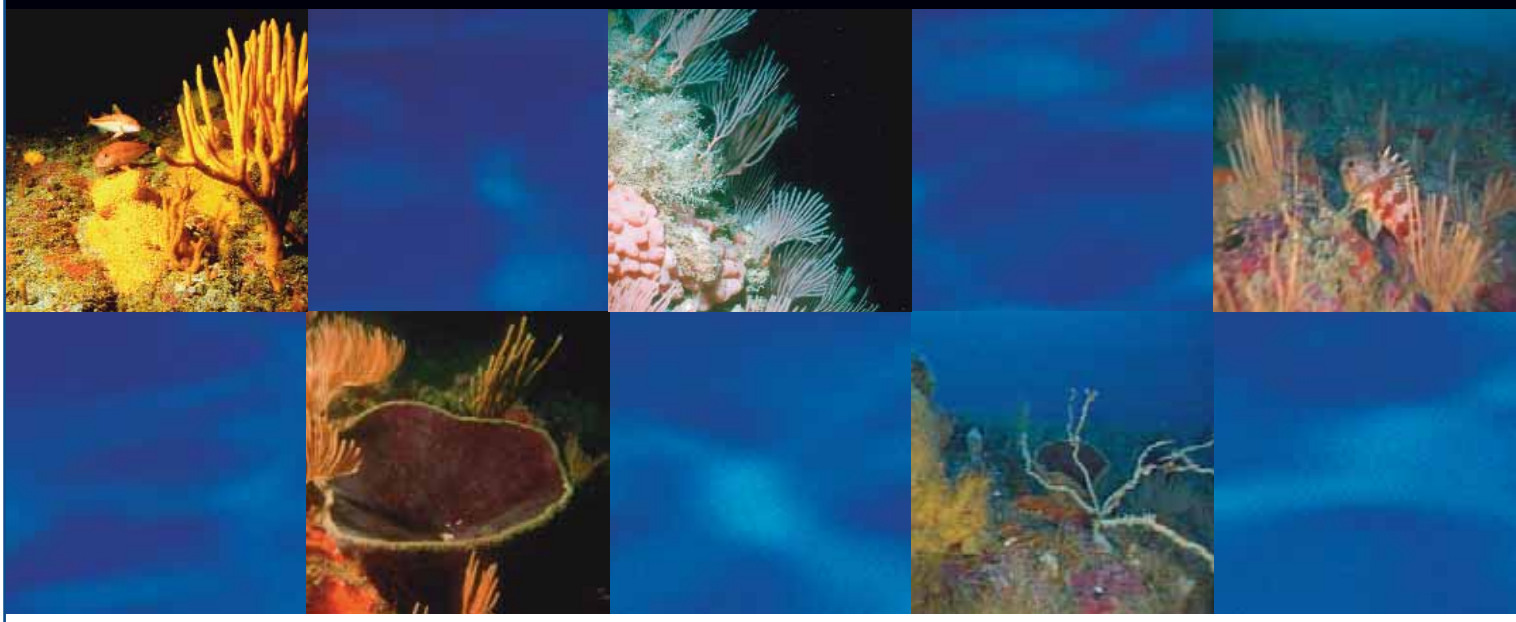
Mimiwhangata can be fixed

When given time and protection, the sea's natural processes can work to restore damaged marine environments and depleted species. Unfortunately, this is not a simple process. It must be noted that some human activities on land may be adversely affecting the Mimiwhangata marine environment through advanced erosion and sedimentation, although the extent of these effects are not yet fully understood. However, Mimiwhangata has the advantage of having an adjacent land conservation area, the Mimiwhangata Coastal Farm Park, which has a significant proportion of its catchments forested. If Mimiwhangata is designated a Marine Reserve,

(6) Usmar N.R., Denny C.M., Shears N.T. & R.C. Babcock (2003). Mimiwhangata Marine Park Monitoring Report 2003. Report to Department of Conservation, Leigh Marine Laboratory, University of Auckland.
(7) Shears N.T. & Babcock R.C. (2002). Marine reserves demonstrate top-down control of community structure on temperate reefs. Oecologia 132:131-142

The Deep Reefs of Mimiwhangata

From Left to Right: 1. Sponge gardens and goatfish are commonly found where the deep reef meets the sand. 2. Gorgonians and large cup sponges can often be found in the deep reefs beyond the kelp forest. 3. Abundant pink gorgonian fans. 4. Black coral tree and sponges. 5. A jock stewart sits amongst the gorgonian fans.



these two protected areas will benefit each other. This will also add to the impetus to reduce or control harmful land development in the area. Unlike land-based conservation projects that require fencing, replanting, breeding programmes and pest eradication, the recovery of some marine systems can succeed if people stop their extraction activities and control land-based pollution. An area is simply protected to allow the natural system to do its work. The most effective way to do this is to set up a fully protected Marine Reserve.

Research at the Cape Rodney to Okakari Point (Leigh) Marine Reserve on the east coast, north of Warkworth, and generally in Marine Reserves all over the world, has shown increased rates of regeneration and increases in fish size when fully protected Marine Reserves have been established in damaged areas [7, 8].

The community can make it work

To realise the potential benefits of protection, Marine Reserves depend very heavily on local involvement and compliance to a simple set of rules. Good compliance is critical to the success of any reserve. The rules must be simple and understandable and supported by legislation. Typically, enforcement is greatly enhanced by the commitment and presence of local people and fishers watching for people breaking the rules in "their" reserves. Ultimately the local community has the most to gain from the reserve in terms of any economic opportunities, and enjoyment resulting from the recovery of their local marine ecosystem.

Central Government mandate

Under New Zealand's Biodiversity Strategy [9], central government has a commitment to achieve a system of marine protected areas in New Zealand, in which fully protected Marine Reserves will play a major role. Through the Biodiversity Strategy, specific funding has been allocated for the establishment and management of Marine Reserves. A Marine Reserve at Mimiwhangata, after completing all required legislative tests set out in the Marine Reserves Act 1971, would be eligible for this funding, establishing the potential for effective management and enforcement in conservation.

(8) Partnership for Interdisciplinary Studies of Coastal Oceans, 2002. The Science of Marine Reserves. http://www.piscoweb.org
(9) Department of Conservation et.al., 2000. New Zealand biodiversity strategy. NZ Govt Press., 2000

Why protect Mimiwhangata?

Below Left: The kina barren habitat will diminish over time as snapper and crayfish numbers rebuild.
Below Centre: A scene beneath a healthy Ecklonia forest.
Below Right: 4-metre tall forests of tangle-kelp are found in sheltered rocky areas.

The marine environment is a mosaic of different habitats that fit together like puzzle pieces. Each one of these habitats, whether beach, sand flats, kelp forest, rocky shore or sponge garden, plays its own part in keeping the whole marine environment healthy. Each habitat is home to a different set of plants and animals. For example, cockles and tuatua thrive on sandy beaches while paua and mussels live in rocky places that are washed by ocean waves. These different habitats often work together. Estuaries and shallow rocky reefs serve as nursery habitats for many species of ocean fish.

Most marine animals use more than one habitat during their lives, making each habitat important for survival. Marine Reserves should ideally include several different types of habitat to allow sea life to move between habitats while remaining protected.

Why protect Mimiwhangata's marine environment?

Mimiwhangata has a special environment. In the 1970s, scientific studies revealed that Mimiwhangata contained examples of almost every shallow marine habitat on Northland's eastern coast [1]. Recent studies [10, 11] have examined the deeper areas offshore. These habitat survey results are shown on the map in the centre of this document.

The deep reefs off Rimariki Island extend 3.5 kilometres to the east, and are up to 100 metres deep. The centre of this reef area is highly broken, with gulleys, crevices and protruding rock in excess of 5 metres high. At 33-37 metres in depth, the reef community makes a dramatic transition to a community dominated by filter feeding invertebrates. Beyond this depth, the kelp forests of the shallow reef areas no longer grow due to lack of light. Soft corals and sponges dominate this deep reef invertebrate community.

(10) Kerr V.C. & Grace R.V. (2002). Mimiwhangata Deep Reef Survey Draft Report 2002. A report to the Department of Conservation.
(11) Kerr V.C. & Grace R.V. (2004). Habitat investigations of Mimiwhangata. Report in progress.

From Left to Right: 1. Sunrise over Okupe Beach. 2. Red moki, one of the large reef fish, can reach 60 years of age. 3. A number of scientific studies have been completed at Mimiwhangata over the last thirty years, measuring the changes to the environment.

In biological terms, this deep reef habitat is very rich in both diversity and abundance. Known as "high-relief deep reefs", the contour of this habitat is especially complex, consisting of gulleys and pinnacles averaging three metres or more in height (see habitat map). The physical complexity of this reef system increases the diversity and abundance of the reef. Surrounding it are large areas of low-relief reef and patch reef areas, where reefs are broken by sand and cobble bottom. This reef system is considered to be representative of northeast coast near-shore reef systems, to a depth of 100 metres. To the north and south, the areas of patch reef change to sand areas.

Mimiwhangata is already highly valued as an ecological, cultural and recreational area. If it is fully protected, many people from all over Northland, New Zealand and the world will be able to experience and treasure this varied marine environment in a natural, thriving state.

Mimiwhangata is a well studied part of New Zealand's coastline, which complements other east coast areas where extensive study has taken place e.g. Poor Knights Islands, Cape Rodney to Okakari Point (Leigh) Marine Reserve. Scientists have been surveying Mimiwhangata over a 30 year period. People have fished there for centuries and a lot is known about the area. If Mimiwhangata is designated as a Marine Reserve, it will be possible to study how well and how quickly the recovery takes place. Mimiwhangata will add a valuable array of protected habitats to an emerging network of protected areas along the northeast coast of New Zealand. This will be useful in many ways. It will allow people to understand and experience a coastal environment in a near-natural state. It will also provide much needed information about the marine ecosystem to guide management decisions for the whole coast.

Mimiwhangata has a special environment, containing examples of almost every shallow marine habitat on Northland's eastern coast.

From Left to Right: 1. A packhorse crayfish with a group of smaller red crayfish. 2. A leatherjacket nibbles at sponges on a rock wall. 3. This spotted black grouper lived in a particular hole at Mimiwhangata for approximately five years 4. Porae are frequently found where the sand meets the rocks.

How damaged is Mimiwhangata's marine environment?

To answer this question, DoC has been studying and measuring changes in individual species, and changes to the Mimiwhangata habitat over time [2, 3, 4, 6, 10, 11]. Some of these changes are believed to be primarily a result of fishing impacts, while others are a result of natural changes or other factors which are not yet fully understood.

Changes due to fishing impacts

Crayfish

Packhorse crayfish numbers declined in the 1970s and 1980s. They are now very hard, if not impossible, to find in the Marine Park. The numbers have fallen despite commercial taking of packhorse crayfish from the Marine Park being banned in 1994.

There were some significant increases of young red crayfish in the 1970s. Scientists thought this would result in adult crayfish numbers increasing as the young crayfish aged and the Marine Park system reduced fishing, but this did not occur. Red crayfish numbers have remained much the same during the past 20 years with no significant increase in the number of larger crayfish. It appears that the current level of crayfish taken by recreational divers in the Marine Park is enough to keep the crayfish numbers consistently low in the shallow reef areas.

Fish

Prior to the 1970s large snapper were frequently seen and caught at Mimiwhangata. Anecdotal reports from this period suggest that commercial trawling, long lining and set netting were gradually reducing the numbers [12]. Commercial fishing ceased in the Marine Park in 1993. In recent surveys, young snapper have been infrequently seen at Mimiwhangata, but there are few older, large snapper. In a 2002 survey, it was found that Mimiwhangata had fewer and smaller snapper than Cape Brett, the Mokohinau Islands and the Poor Knights

(12) Dart J., Drey B. & R. Grace (1984). Mimiwhangata Marine Park: Environmental Impact report. Hauraki Gulf Maritime Park Board..

From Left to Right: 1. Rock oysters have become less common at Mimiwhangata. 2. Tangle weed kelp. Healthy kelp forests such as this are now less common at Mimiwhangata. 3. In this aerial shot, the dark patches are kelp forest, while the light-coloured areas of rock are areas of "kina barren".

Islands. There was also no significant difference in snapper numbers between the areas inside the Mimiwhangata Marine Park, and reference sites outside but near the Marine Park. Preliminary comparison of data from historic sample areas within the Marine Park shows little change in the abundance of reef fish. Analysis of the latest survey data is currently in progress.

Kelp forests

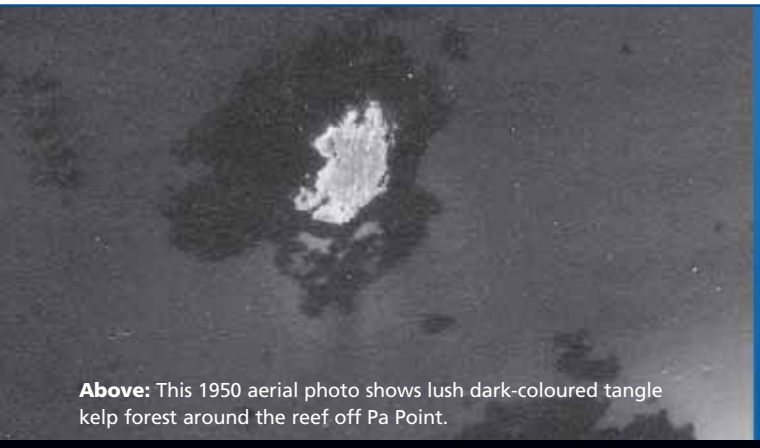
There are some spectacular examples around Mimiwhangata of kelp forest decline. For example, at Pa Point in 1976 there was a lush, tall, dense forest of kelp. By the early 1980s the extent of the forested areas was decreasing, and by summer 1986 (and continuing to 2003), only sparse remnants of the kelp forest remained. This change is influenced by an increase in kina, which feed on the kelp forest. This increase may occur because the predators of kina, such as large snapper and crayfish, are now less common in the shallow reef areas. As a result, the kina have drastically increased in number, impacting on the kelp and creating areas which are now commonly referred to as "kina barrens". This is a major habitat change to a less productive state, with possibly serious ecological impacts. Other factors which may affect the kelp forest growth and decline are storms, algae blooms and variations in ocean temperatures. (Please see photos top of page 10).

Changes due to natural or other causes

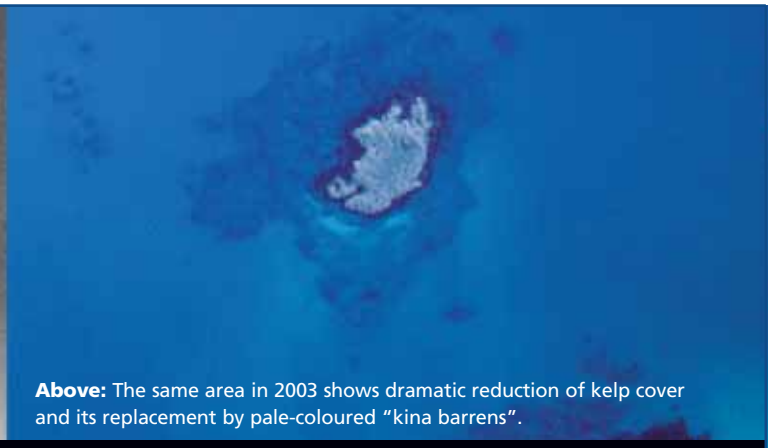
Noticeable now at Pa Point are increased silt deposits, starfish species in abundance, and significant invasion of the exotic parchment worm which smothers the indigenous encrusting reef life.

Oysters

Rock oysters have almost died out in parts of the Marine Park. This could be due to natural causes which are not fully understood, but the decline may have been hastened by significant harvesting in the 1981-82 summer, and may be due to Pacific oysters arriving in the area in the late 1970s.



Above: This 1950 aerial photo shows lush dark-coloured tangle kelp forest around the reef off Pa Point.



Above: The same area in 2003 shows dramatic reduction of kelp cover and its replacement by pale-coloured "kina barrens".

From Left to Right: 1. Tuatua underwater at Mimiwhangata beach. 2. A sample of tuatua surveyed on Mimiwhangata beach in the 1970s. 3. This scene is typical of a "kina barren", where kelp forests are eaten by the increasing number of kina.

Tuatua

Tuatua numbers fell from beds of 10 million small tuatua in the 1970s to around 800,000 middle-sized to large tuatua in the 1980s and since then they have almost disappeared. In recent years, tuatua have been hard to find on Mimiwhangata Beach, although occasional individual tuatua are found on all the sandy beaches in the area. The natural fluctuations and various causes for these fluctuations of tuatua populations are not well understood, therefore the dramatic changes measured at Mimiwhangata over the last three decades may be due to natural causes, as opposed to human harvesting.

Scallops

Small numbers of large scallops (eg. 120mm) were often found in the coarse sand sediments between Rimariki Island and the mainland in the 1970s' surveys. These rapidly declined and were not found in the 1980s surveys. More recently (March 2004), scallops were reported washed up in considerable numbers on Mimiwhangata Beach after a very large northeasterly swell event, indicating there are still some scallop beds remaining in Mimiwhangata Bay. No other information on scallops was gathered in the 2001-2004 surveys. The impact of human activity on scallop populations at Mimiwhangata is unclear.

Ecological Connections

From Left to Right: 1. A red crayfish lurking under a rocky ledge. 2. Snapper eat small kina. Remove too many snapper and the kina multiply. 3. The tangle-kelp, *Carpophyllum flexuosum*, was once abundant at Pa Point. 4. The common kelp, *Ecklonia radiata*, forms extensive forests at Mimiwhangata, but has been reduced in the shallow part of its range by grazing kina. 5. Large numbers of kina damage the kelp forests. This imbalance may be corrected in a marine reserve.

How did this happen?

The threat of over-fishing along Northland's eastern coast has been discussed by Northlanders since the 1950s. Each decade has brought renewed concerns over visible reductions in numbers of crayfish, snapper, trevally and hapuku from nearby coastal reefs. At Mimiwhangata, discussion documents from the 1970s describe heavy commercial fishing pressure on this part of the coast. Some accounts describe pair trawlers operating in Mimiwhangata Bay[12]. As a result, the marine environment was starting to show significant decline. The Marine Park was established in a bid to protect and restore the Mimiwhangata marine environment.

There are a number of possible reasons why the Marine Park concept has not delivered positive results at Mimiwhangata. These reasons may have resulted from the environment responding differently than expected, may involve changes in human impacts over the time period or possibly combinations of both.

Examples of possible reasons include:

- Slower rates of reproduction than were expected in some species
- Increased visitor/fisher numbers as road access improved
- Increased boating activity, size of boats, number of fishers per boat and use of electronic fishing aids
- Increased fishing and shellfish collecting in and around the Marine Park
- The complexity of the fishing regulations that were established for the Marine Park
- Uncertainty in public perceptions of who was responsible for the Marine Park, with DoC responsible for land and the Ministry of Fisheries being responsible for the Marine Park regulations
- Lack of visible positive results being measured and reported back to the community
- Lack of allocated resources to manage the Marine Park and to enforce the Park's fishing restrictions.

Below Left: A diver in the 1970s examines a sponge at Mimiwhangata.
Below Centre: The New Zealand dotterel, considered 'at risk', is found at Mimiwhangata.
Below Right: A fish's view of a pohutukawa from a rock pool.

Mimiwhangata Marine Park is an area that is pleasant to visit and to fish in. As a result, it may be more heavily fished than other coastal areas, possibly creating the opposite result to that intended. Allowing for selective fishing methods may encourage people to fish even more in the Marine Park, because there may be a perception amongst fishers that fish will be larger and more plentiful under the partial protection rules of the Marine Park.

The proposed marine reserve option

It is possible with community and iwi support to establish a fully protected conservation area at Mimiwhangata by establishing a Marine Reserve. The Marine Reserve option at Mimiwhangata represents a change in objectives, from a combined fishery and conservation objective, to an objective that is solely focused on protecting the area in as natural a state as possible, for study and enjoyment of the community. The Marine Reserve concept makes use of a simple management rule that is easy for people to understand.

Marine Reserves

Below Left: A close-up view of a leatherjacket amongst lush sponges
Below Centre: The goatfish uses two barbels under the chin to search for worms and crustaceans in the sand.
Below Right: At the Cape Rodney to Okakari Point (Leigh) Marine Reserve, snapper of legal size are 10-20 times more abundant than on the unprotected coast.

What is a Marine Reserve?

Marine Reserves are the "national parks" of the sea, where underwater features and marine life enjoy complete protection. Their legal purpose is to protect areas of New Zealand that contain underwater scenery, natural features or marine life, of such distinctive quality or so typical or beautiful or unique, that their continued preservation is in the national interest. Because much of our underwater environment has been altered by human activities, we need to protect parts of the sea that closely represent examples of what was originally there. Within a Marine Reserve, marine life is left to recover and flourish in its natural state - for its own sake and for future generations to study and appreciate. It provides a rich environment teeming with hundreds of species of sea life. This provides a safe breeding environment that has the potential, in time, to increase the quantity and quality of marine life available outside the reserve.

As with national parks, people are encouraged to visit, explore and learn from Marine Reserves. Most Mimiwhangata locals know that the area is not as bountiful now as it was in "the old days". A Marine Reserve may help recovery of the marine environment and species, and protect marine life for the benefit of present and future generations.

How is it different from a Marine Park?

Mimiwhangata Marine Park was set up under fisheries regulations and a Grant of Control under the former Harbours Act, which was superseded by the Resource Management Act 1991. In simple terms Marine Parks are a set of agreed rules for activities (normally fishing) in a defined area. Mimiwhangata has allowed limited fishing. In contrast, Tawharanui Marine Park does not. The current Mimiwhangata partial protection rules under the Fisheries Regulations are summarised on page 14.

Below Left: A crayfish peers at the camera.
Below Centre: Kina can be collected from Mimiwhangata Marine Park under the current regulations.
Below Right: Kingfish are a feature of Northland coastal waters.

- All commercial fishing ceased as of October 1993
- Amateur fishers may only use unweighted, single-hooked lines, trolling, spearing and handpicking to take fish and shell fish species listed as:

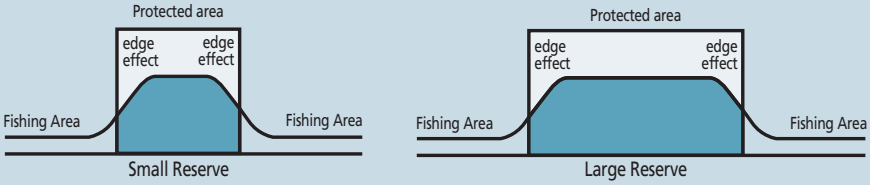
Fin fish	Barracouta	Piper (garfish)
	Billfish (all types)	Shark (all types)
	Blue maomao	Snapper
	Flounder (all types)	Sole
	Grey mullet	Tarakihi
	Gurnard	Trevally
	Kahawai	Tuna (all types)
	Kingfish	Yellow eye mullet
	Mackerel (all types)	
Shellfish	Common kina	Scallop
	Green-lipped mussel	Tuatua
	Rock lobster	

Other species:
All other species of finfish, shellfish and other marine life are totally protected.

By contrast, Marine Reserves are "no-take" zones, focused on preservation of marine habitats and life for scientific study. The clear and simple no-take rule makes Marine Reserves easier to monitor and enforce, both through community action and legal action if necessary. There is recent evidence based on research at the Poor Knights Islands Marine Reserve, that conservation outcomes are more significant in a Marine Reserve than in a partially protected area[13].

(13) Denny C.M. & Babcock R.C. (2004). Do partial marine reserves protect reef fish assemblages? Biological Conservation Issue 1, Volume 116.

The "Edge Effect"



Fishing outside a marine reserve reduces numbers of species like snapper inside the edge of the reserve. In larger marine reserves the "edge effect" is a much smaller proportion of the total area.

Below Left: Sponges and plankton-feeding demoiselles on the deep reef.
Below Centre: An aggregation of goatfish near a reef.
Below Right: A school of snapper peers at the camera at Cape Rodney to Okakari Point (Leigh) Marine Reserve.

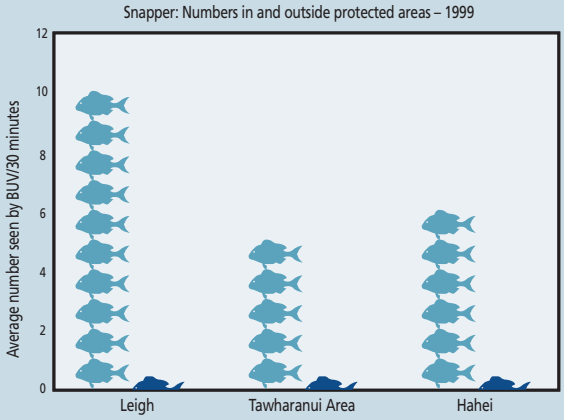
Does the size of the Marine Reserve matter?

The "best" size for a Marine Reserve depends on what you are trying to protect or study. For some species, a very small Marine Reserve may be enough to protect a local population. For species that travel or migrate, a very large Marine Reserve may be required to be effective. Some very mobile species may only take up temporary residence within a Marine Reserve. However, the positive benefits of the Marine Reserve may be increased if the period of the species' life cycle spent in a reserve, is a critical portion of its life (e.g. spawning).

Research on the movement of snapper in and out of Marine Reserves has indicated that fishing for snapper just outside Marine Reserve boundaries affects numbers in the reserve. Fishing causes species, such as snapper, to be generally less abundant closer to the edges of reserves, as compared to the centre of the reserve. For example research at Cape Rodney to Okakari Point (Leigh) shows reduced snapper numbers near the edges of the five kilometre-long reserve. A bigger reserve reduces this effect[14, 15, 16]. The illustration above shows a possible model of the "edge effect" close to the Marine Reserve boundary.

Larger Marine Reserves enable a wider range of habitats to be protected. The Mimiwhangata area is rich in habitat diversity. The largest possible area under protection will allow for more of these habitats to function fully and have a greater potential contribution to the overall coastal system. Larger overall size will minimise effects from fishing at the edges of the reserve, and would potentially add more diversity and more marine habitats to the network of marine protected areas in northeast New Zealand.

(14) Babcock R.C., Attwood C.G., Egli D.P., Parsons D. & T.J. Willis (2002). Optimising Marine reserve design in New Zealand - Part II: Individual-Based models. Leigh Marine Laboratory, report to the Department of Conservation.
(15) Willis T.J., Millar R.B. & R.C. Babcock (2003). Protection of exploited fishes in temperate regions: high density and biomass of snapper Pagrus auratus (Sparidae) in northern New Zealand marine reserves. Journal of Applied Ecology, 40: 214-227.
(16) Taylor R.B., Anderson M.J., Egli D., Willis T.J. (2003). Cape Rodney to Okakari Point (Leigh) Marine Reserve Fish Monitoring 2003: Final Report. Prepared for Department of Conservation, Auckland Uniservices.



This chart shows the number of snapper sighted using a Baited Underwater Video (BUV), at sites within and outside three marine reserves around New Zealand in the same calendar year. As you can see, there is a large difference between the figures at each location[4, 15, 17].

From Left to right: 1. Paua numbers are likely to increase in a Marine Reserve at Mimiwhangata. 2. The spikes on the legs of large red crayfish are used to crack kina. 3. Marine Reserves are the only place where divers can regularly see snapper at close range. 4. A selection of sea life, which lives buried in the sandy seabed. 5. A large sponge and soft coral on the deep reef.

Benefits inside the reserve boundary

When a no-take area is established, it assists recovery of the environment to a state which is more comparable to its condition before it started to decline. Recovering habitats become nurseries (kohanga) in which the sea life grows bigger, more plentiful and varied than in surrounding fished areas. Bigger animals produce substantially more young. When more young are produced, they may drift or swim into the surrounding areas.

Sea Life Increases Dramatically

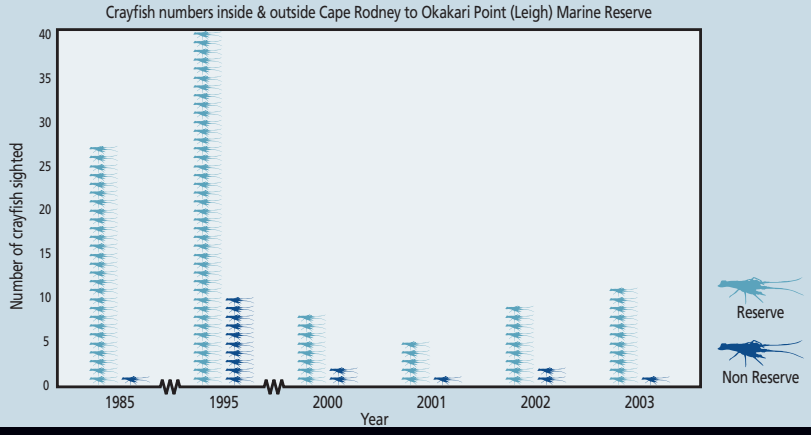
Studies of more than 80 Marine Reserves all over the world have shown that the average weight of exploited species is more than four times greater in reserves than in unprotected areas nearby. The average number of animals in an area triples, and the number of species is 1.7 times higher in Marine Reserves than in unprotected areas. The average body size of animals is 1.8 times larger in reserves than in fished areas. These findings include not just fished species but other plants, invertebrates and fish[8]. In most cases, studies of changes in Marine Reserves established in New Zealand show a similar pattern of large increases in the average size and numbers of exploited species accumulating in the reserve[7, 18, 19]. At the Poor Knights Islands Marine Reserve, snapper numbers have increased dramatically inside the Marine Reserve[17].

Benefits beyond the boundaries of Marine Reserves

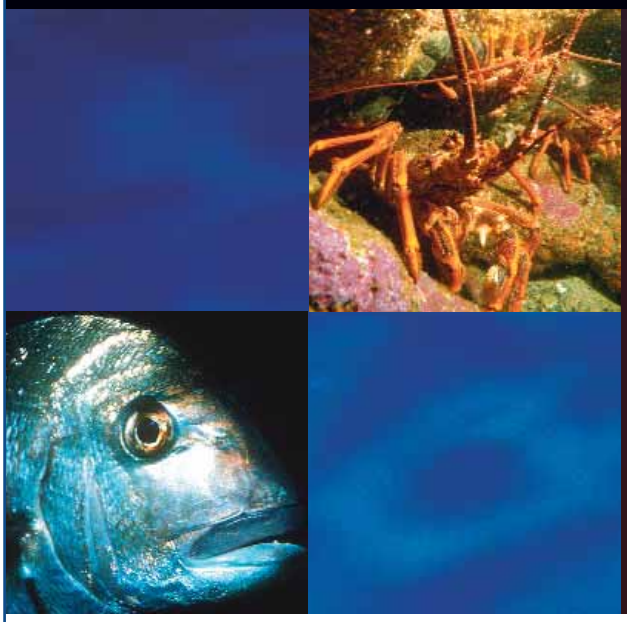
Marine Reserves frequently contain more sea life than surrounding waters do, so some animals may move outside the reserve to avoid competition for food and space[18]. This is called "spillover"[19]. Spillover increases as time passes and the sea life gets more crowded in protected areas. Different species spill over at different rates, depending on how mobile they are. Species that are attached to the sea floor, like mussels and other shellfish, do not migrate outside reserve boundaries but potentially export large volumes of larvae to coastal

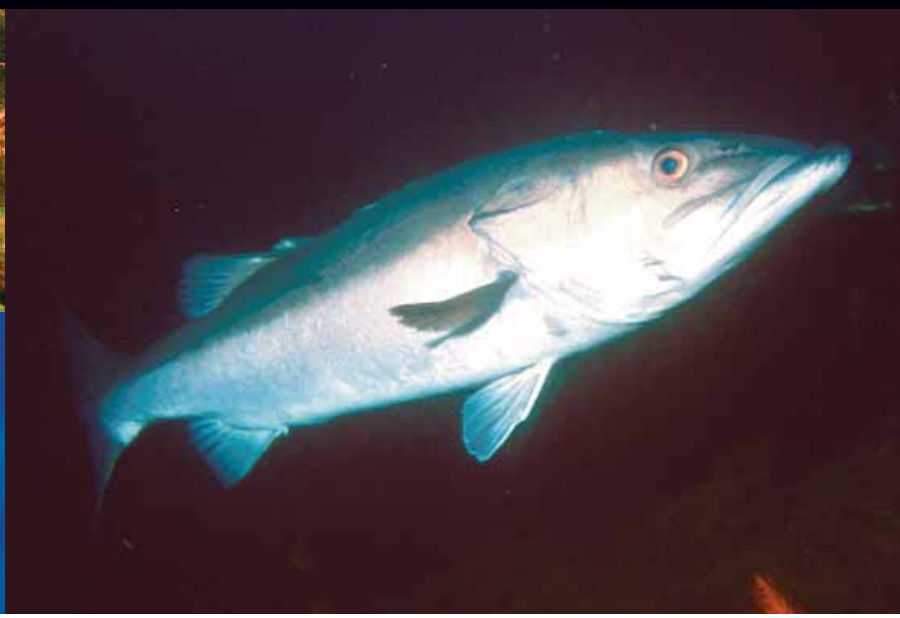
(17) Denny C., Willis T.J. & R.C. Babcock (2002). Effects of Poor Knights Islands marine reserve on demersal fish populations. Report to the Department of Conservation. Department of Conservation, Auckland Uniservices.
(18) Cole R. (2003). What are the ecological impacts of marine reserves in New Zealand. NIWA Client Report, NEL 2003 - 010 for Department of Conservation.
(19) Gell F.R. & Callum C.M. (2003). Benefits beyond boundaries: the fishery effects of marine reserves. Trends in Ecology and Evolution. Vol.18, No.9 September 2003.

This chart shows crayfish numbers within Cape Rodney to Okakari Point (Leigh) Marine Reserve, compared to those outside the reserve. Natural fluctuations in crayfish numbers are likely to have caused the decline in 2000. Despite this drop, there is still a marked difference in numbers at each site[20, 21, 22].



Below Left: Large old snapper are the best breeders and are only protected in marine reserves.
Below Centre: A nest of red crayfish at Leigh Marine Reserve
Below Right: Hapuku, once common in shallow water, are now thought of as deepwater fish. They may return to the shallows in a marine reserve.





waters. Fish species that we think of as migratory may simply pass through reserves or stay temporarily.

Experience however has also shown that there are many surprises with Marine Reserves. For example, at the Poor Knights Islands and at the Cape Rodney to Okakari Point (Leigh) Marine Reserve, snapper have displayed residential and semi-residential behaviours to a surprising degree[7]. This leads to the conclusion that Marine Reserves offer the best opportunity to understand the natural behaviour of fish, and in particular of old large fish, as their numbers are so depleted in fished coastal reefs.

How quickly do Marine Reserves work?

The recovery speed for marine environments varies depending on how quickly sea life normally grows in the area. Some animals grow quickly, mature at an early age and produce large numbers of young. These animals, such as scallops and mussels, may multiply rapidly after protection, sometimes increasing significantly within a year or two. Other animals grow slowly and mature later in life. These species, such as hapuku, some reef species, and the large old individuals of faster growing species, may take many years or even decades to increase noticeably in a reserve. All these changes contribute to 'food webs' and ecological interactions, which may require even longer time periods to realise the full range of benefits and rehabilitation.

(20) Kelly S. (1999). Marine reserves and spiny lobster, *Jasus edwardsii*. Unpublished Ph.D. thesis, University of Auckland.
(21) Kelly S., Scott D., MacDiarmid A.B., Babcock R.C., (2000). Spiny lobster, Jasus edwardsii, recovery in New Zealand marine reserves. Biological Conservation 92: 359-369.
(22) Haggett T. & Kelly S. (2003). Cape Rodney to Okakari Point Marine Reserve lobster Monitoring programme: May 2003 Survey. Report for Department of Conservation, Aquatic Systems Ltd., Auckland.

The Mimiwhangata Proposal

Below Left: The morning star shell, *Tawera spissa*, forms dense beds in the sand off Mimiwhangata.
Below Centre: Red Moki are an important reef fish. They need holes in the reef to shelter from storms.
Below Right: Flax Bush Bay on Rimariki Island.

Proposed boundaries

At this stage two options for the boundary of the proposed reserve have been put forward by the biological survey team, representatives of tangata whenua and Department of Conservation staff. These are outlined on the enclosed map. A considerable body of information on the marine habitats of Mimiwhangata has been collected and is still being analysed. The area investigated extends approximately four kilometres offshore and includes significant areas of reef and soft-bottom habitat beyond the current one kilometre Marine Park boundary. The proposed boundaries attempt to include all the major habitats at Mimiwhangata in one reserve. This includes the sand areas to the north and south of the main deep reef. These soft-bottom habitats have a very different range of invertebrate communities, as compared to the reef habitats, and are also important feeding areas for large mobile predatory species. It is important to include these soft-bottom and sand areas around reef edges, as many marine organisms periodically move out from reef habitats to these sand areas. These boundary designs will allow for maximum protection of biodiversity, and for organisms to move freely between habitats at different stages of their lifecycle, benefiting from full protection.

This information is summarised on the double page insert map and on the questionnaire. You are invited to comment on the proposed boundaries and how they might affect you. The technical reports supporting this information are listed as footnotes throughout this proposal and can be requested along with reports now in progress (as they become available), from the Department of Conservation's Northland Conservancy Office, P O Box 842, Whangarei.

Proposed traditional management area

In preparing this proposal, discussions were held with hapu representatives. Kaumatua and Kuia from the Mokau area (adjacent to the western end of the proposed Marine Reserve boundary) indicated a strong preference for having the area around Paparahi Point, which is

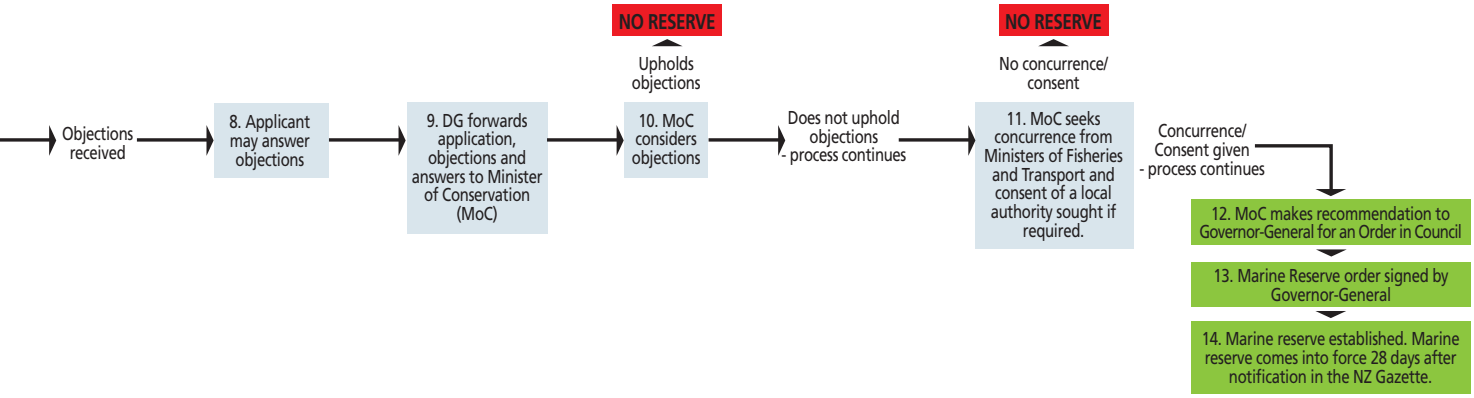
The Marine Reserve Process

Below: The DoC ranger discusses the future of the area with local people.

currently within the Marine Park, excluded from the proposed Marine Reserve area. The Department of Conservation has taken this advice in formulating the proposed boundaries (see attached map). The hapu view is that this area has always been intensively used for kaimoana harvesting, and in modern times has become especially important as a recreational, subsistence and customary fishing area for both the hapu and the wider community. It was argued that the shelter, easy access and strong significance of the traditional use of this location, meant that this area would be better managed under a system different to the Marine Reserve. Some of the objectives identified by the hapu for management of this area were:

- restore the understanding and use of tikanga, (traditional rules and boundaries) for the management of this area
- create local on-the-water involvement and employment for the people of the hapu and community
- investigate the potential for aquaculture to take pressure off the harvesting of the natural reef system, and possibly to enhance the natural reef system
- restore the kelp forest community, paua, mussel and crayfish resources of the Paparahi Point area.

Beyond the specific area of Paparahi Point and its reefs and islets, the hapu did not wish at this time to draw lines indicating the extent of the area they wished to focus on to develop traditional management practice. In their view the Paparahi Point area is simply one part of the entire rohe for which they are responsible as Kaitiaki. They also stated that they would be seeking to explore the extent to which provisions in the Fisheries Act could support their traditional management objectives, referring here to Mataitai and Taiapure areas as defined by fisheries regulations.



Below Left: Ngatiwai and Mokau Kaumatua Houpeke Piripi.
Below Right: The picturesque Mimiwhangata coastal waters could be protected as a marine reserve, for future generations to enjoy.

How would a Marine Reserve support kaitiakitanga?

Respected Ngatiwai and Mokau Kaumatua, Houpeke Piripi, has declared a rahui tapu at Mimiwhangata and supports the use of the Marine Reserves Act 1971 to restore the area. Houpeke and the Te Au O Morunga Marine Farm Trust have also proposed an adjacent traditional management area (see enclosed map). The hapu also saw it as an advantage to develop kaitiakitanga management of the Marine Reserve and of special areas surrounding the Marine Reserve identified by hapu and the Department of Conservation.

The Department of Conservation, in preparing this proposal, acknowledges the leadership and vision demonstrated by Houpeke and the other kaumatua and kuia involved in the investigation stage of this project. With their leadership and guidance, we will seek to take the kaupapa of this proposal to the wider tangata whenua community and Ngatiwai iwi.

Marine Reserves offer a mechanism for tangata whenua to be intimately involved in the long-term protection and recovery of special areas in their rohe. There are many concerns about the long-term impacts of increased fishing pressure on the marine environment. The Marine Reserve proposed at Mimiwhangata would create a refuge or nursery, where natural productivity could recover and support management efforts in the adjacent coastal areas.

Establishing a Marine Reserve: How the process works

The process for establishing a marine reserve in New Zealand is set out in the Marine Reserve Act 1971, and is illustrated by the diagram at the top of the page. This proposal represents Step Four of this process, and is an informal discussion document which creates the opportunity for all interested parties to comment before it is advanced to a formal application stage (Step Six). It is important that every interested person or group now

It is important that everyone now has a chance to have their say.

Below Left: Families can visit marine reserves and experience and learn about the environment.
Below Centre: Gorgonian fans and Zoanthids on deep reefs off Mimiwhangata.
Below Right: Pa Point and Waikahoa Bay. This area is included in the proposed marine reserve. DoC provides basic camping facilities at Waikahoa Bay.





has a chance to have their say. Proposed boundaries have been presented and will be reassessed at the conclusion of this first round of informal public discussion. Any changes will be based on the submissions received, further consideration of the benefits of the proposal and any adverse effects that become apparent.

Following the three-month submission period for this proposal document, the Department of Conservation will analyse the feedback received, conduct further discussion and consider scientific information about the area. Then a set of boundaries may be proposed in a formal application (Step Six) for a Marine Reserve. The public would have the opportunity to make submissions on the application (Step Seven), as part of the statutory process. Following the application period, there are several steps where the Minister of Conservation examines objections to the application, makes a decision and seeks concurrence from other Ministers.

Who would manage the Marine Reserve?

The Department of Conservation is responsible for day-to-day management. The Marine Reserves Bill currently before Parliament provides for the possibility of advisory committees to be established to advise the Department of Conservation on management of a Marine Reserve. For example, day-to-day management could be taken over by community groups. A system of concessions in Marine Reserves is also proposed, which means the community could be fully involved in economic activity arising from the establishment of a Marine Reserve in future. It is important to note that the final provisions of the new Bill will not be known until it is passed in Parliament.

Below: Diving, snorkelling and swimming are all activities encouraged within a marine reserve.

Community Consultation
– The Next Steps

At this stage this proposal and discussion is proceeding under the existing Marine Reserves Act 1971. If the new Marine Reserves Bill is passed through parliament prior to a formal application for this proposal being lodged, the information and consultation will be reassessed as part of preparation of an application under the new Act.

How will the community know if it is working?

The environment at Mimiwhangata has been surveyed for three decades now, and this monitoring will continue. Management systems and community involvement in the reserve would help to publicise changes that occur there. People would continue diving, snorkelling and swimming in the area and would see the changes.

Key Questions

This document has described the way Marine Reserves restore marine environments. It provides information about Mimiwhangata and Marine Reserves, and an opportunity to discuss a Marine Reserve for Mimiwhangata.

The key questions are:

- How would the activities of different interest and user groups be affected if Mimiwhangata became a Marine Reserve?
- What are the expected benefits of the Marine Reserve?
- Where would Marine Reserve boundaries go?
- What educational, research, cultural and recreational opportunities would be created?
- How would a Marine Reserve be managed?
- How would the general public be involved?
- How would local tangata whenua be involved? How would they benefit? How would kaitiakitanga be enhanced?

What should we do now?

This proposal is open for public submissions.

We want to ensure that the views of the community are widely discussed before a decision is made to prepare a formal application for a Marine Reserve. Therefore, we are seeking your views and comments on this proposal. The attached questionnaire gives you a chance to have your say. Please send replies by Tuesday, 12 October, 2004, to:
Mimiwhangata Consultation, Northland Conservancy, PO Box 842, Whangarei. This document and the questionnaire are also available from:
www.doc.govt.nz/regional-info/001~Northland/004~Conservation/index.asp
Limited numbers of the CD-ROM version of this proposal, which includes photography and technical reports, are available from the Department Office on request.

What will happen next?

After further consultation with tangata whenua, fishers, interested groups and the Mimiwhangata community, and consideration of feedback on this discussion document, DoC may make a formal application to the Director-General of Conservation for a Marine Reserve. It is also possible that the tangata whenua may choose to be named as the applicant or be the joint applicants with the Department of Conservation. This is currently being discussed.

If an application is made, members of the public then have two months, from the time the application is notified, to make submissions. The Department is required to consider concerns expressed in submissions.

The Minister of Conservation will make the final decision on the application which also requires concurrence from the Ministers of Fisheries and Transport.

Produced & edited by CPRetc Limited. Design by Aaron Moore Design. This document is printed on recycled paper. All photos by Roger Grace, except Page 1 V. Kerr , Page 4 (aerial photo) courtesy of Northland Regional Council and Page 13 (Leatherjacket) Warren Farrelly. Map work courtesy of Information Management Unit, Northland Conservancy.*

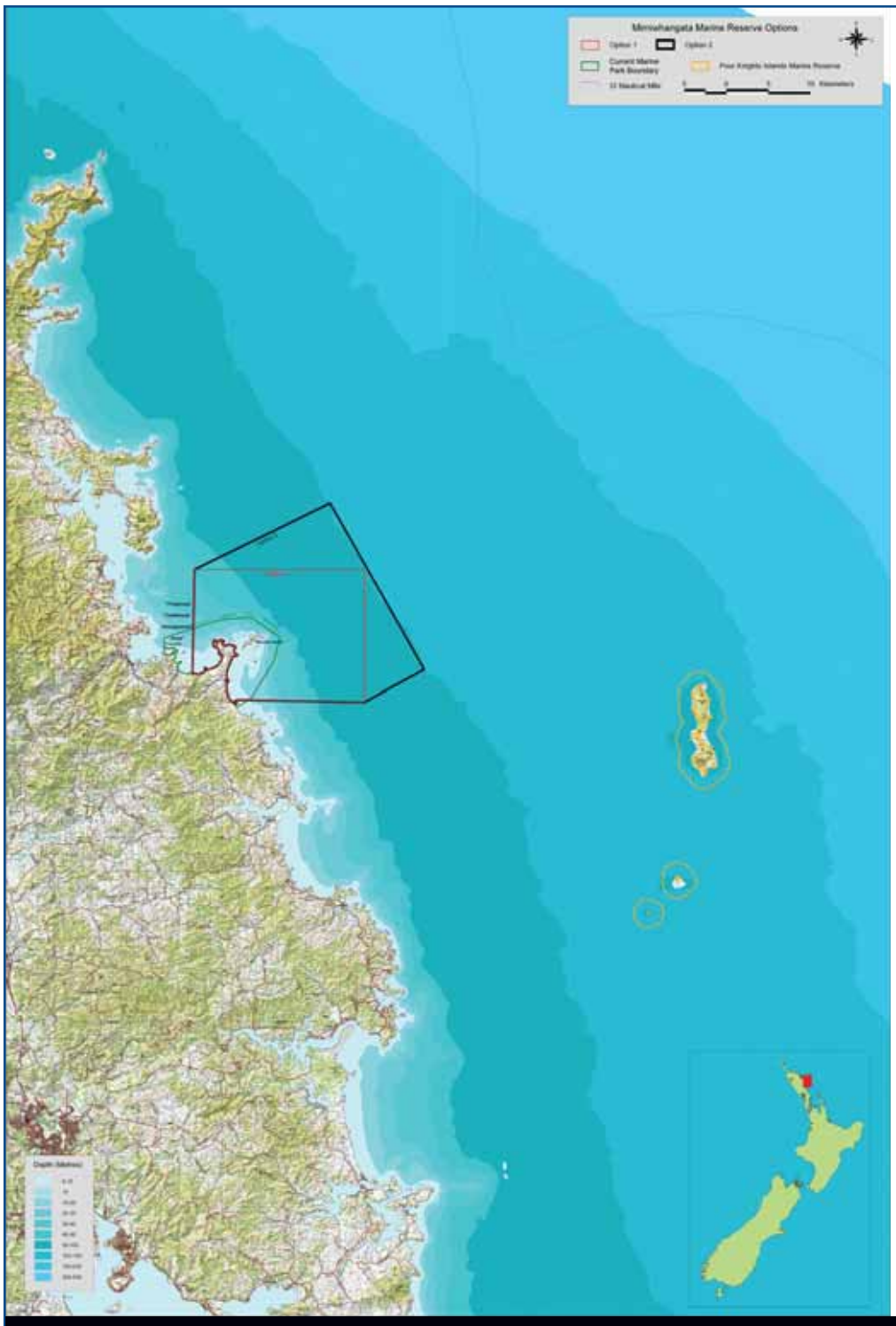
Department of Conservation
Te Papa Atawhai

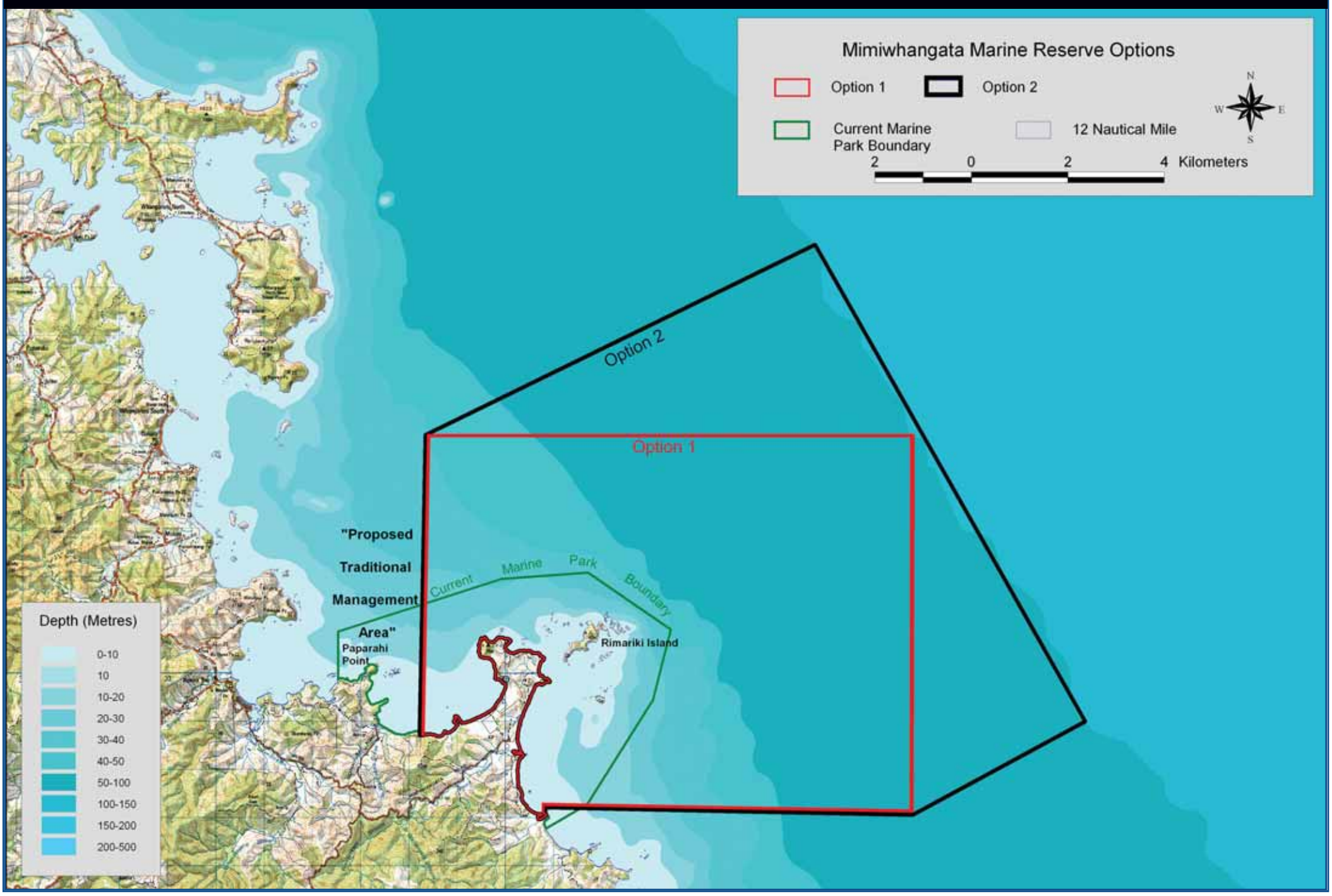
Mimiwhangata
Marine Reserve Proposal

Boundary Options

Option 1 contains significant areas of all the habitats that have been investigated at Mimiwhangata out to the 100m depth line. This option protects all the complex shallow habitats around Mimiwhangata, Rimariki Island and adjacent islands currently in the Marine Park (with the exception of the area around Paparahi Point which is indicated as a proposed Traditional Management Area). In the deeper water 30-100m depth, the proposed area protects significant areas of low-relief reef and sandy soft-bottomed areas which effectively surround the deep high-relief reef centered due east of Rimariki Island. In general terms all these habitats in the 30-100m depth zones are not well represented in marine reserves elsewhere. At Mimiwhangata, this large range of habitats all occur, together with rich and diverse shallow habitats. This option provides the opportunity to include them all in one protected area that can be studied and observed as a connected system. This option has boundary lines running north-to-south and east-to-west which would assist with navigation and positioning at sea.

Option 2 includes all of the area and habitats of Option 1 and in addition has a larger area of the deeper areas (from 50-100m deep). This boundary option uses angled lines off the north-to-south and east-to-west lines and has an outer boundary that roughly follows the 100-metre depth line. This larger option has increased areas of surrounding sandy soft-bottom, low-relief reef and patch reef. Using depth as an outer boundary is a sensible approach in ecological terms, as the boundary would be less likely to cut across different habitats.





33 metres

Mimiwhangata Marine Habitats

Subtidal

- sand/mud
- gravel/cobble
- shallow mixed weed
- tangle-kelp forest
- kina barren
- Ecklonia forest (rock)
- Ecklonia forest (rock+sand)
- deep reef (low relief)
- deep reef (high relief)
- deep reef (rock+sand)

Intertidal

- sand
- gravel
- rock

- Current Marine Park Boundary
- 33m bathymetry line

This map is from a habitat study of the area by Dr Roger Grace and Vince Kerr. A technical report on this work is in preparation.

Department of Conservation
Te Papa Atawhai

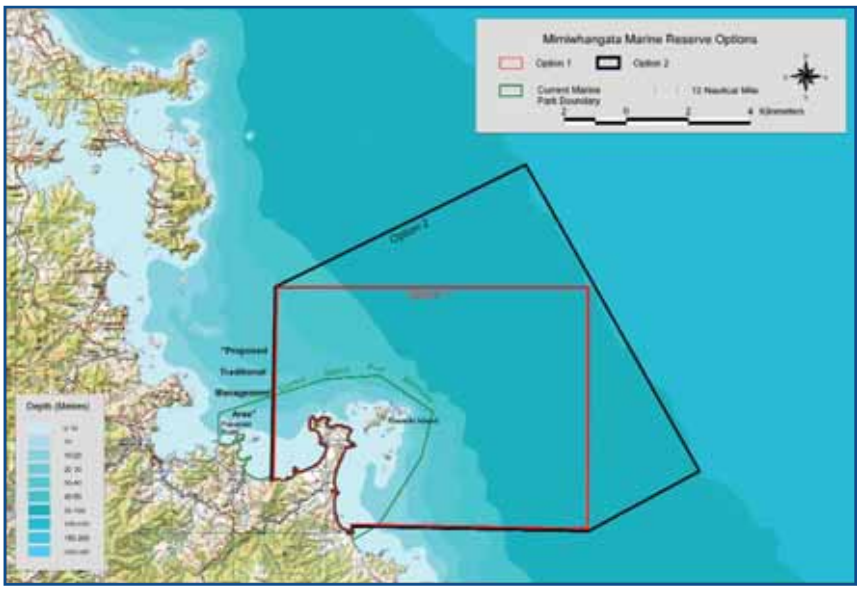
Mimiwhangata Habitat Map - 2004

1000 0 1000 2000 Meters

References:
1 Kerr, V.K., Grace, R.V., 2002. Mimiwhangata Deep Reef Survey Draft Report 2002. A report to the Department of Conservation.
2 Kerr, V.K., Grace, R.V., 2004 Habitat Investigations of Mimiwhangata. Report in progress.

Mimiwhangata
Have Your Say

We want your feedback on the idea of a marine reserve at Mimiwhangata. Please complete this questionnaire and return it to the Department of Conservation, Northland Conservancy Office, PO Box 842, Whangarei by 12 October 2004. This document and proposal can also be downloaded from our website, www.doc.govt.nz/regionalinfo/001~Northland/004~Conservation/index.asp.



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Personal Information:

Name: _____

Address: _____

_____

Email: _____

Organisation or iwi/hapu (if applicable): _____

_____

Use of the Area:

Do you use the coastal or marine areas of Mimiwhangata?

☐ Yes, 5 or more times per year ☐ Yes, less than 5 times per year ☐ No

What activities are you involved in within the proposal area? (Tick as many as apply)

☐ Boating ☐ Swimming ☐ Recreational Fishing
☐ Commercial Fishing ☐ Diving ☐ Snorkelling
☐ Walking ☐ Education or study ☐ Other _____

Marine Reserve

Would you, your hapu or organisation, be affected by the creation of a marine reserve at Mimiwhangata?

☐ Yes ☐ No

What effect would a marine reserve at Mimiwhangata have on you?

_____

_____

_____

_____

Fold here

Fold here

Is that effect likely to be favourable or unfavourable?

☐ Favourable ☐ Unfavourable

How would that effect change with Option 1, Option 2 or an alternative boundary? (Please indicate alternative on map overleaf)

_____

_____

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_____

Department of Conservation
Te Papa Atawhai

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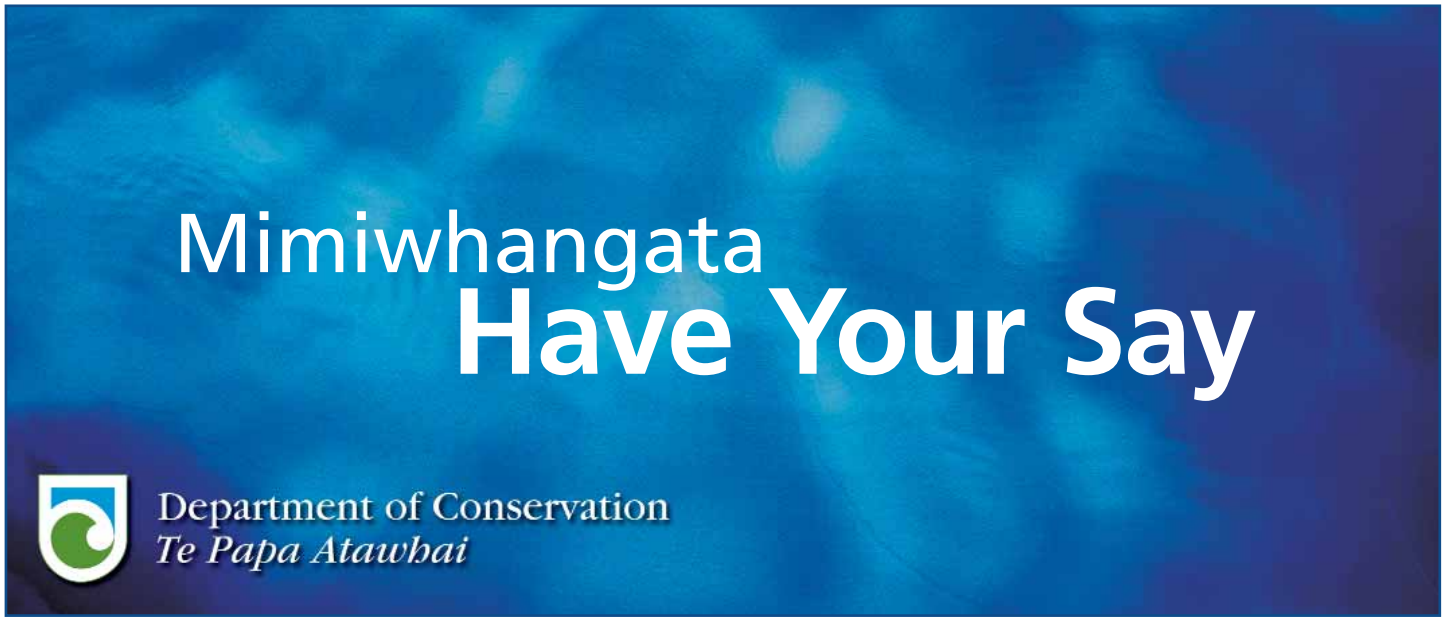

Comments

We would appreciate any additional comments you have on the Mimiwhangata marine reserve proposal.