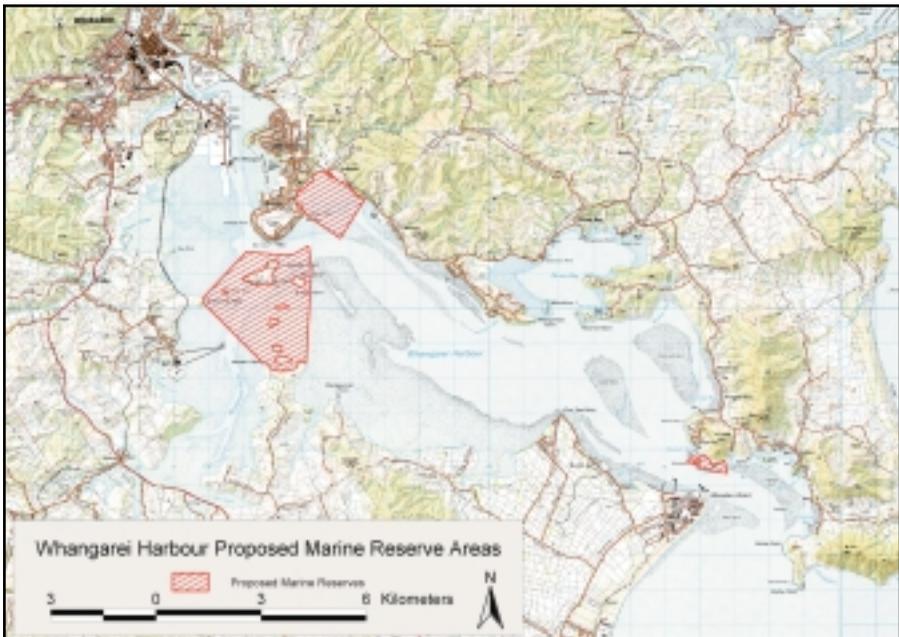


## Whangarei Harbour Marine Reserves Proposal

A marine reserve is the coastal equivalent of a national park. Although the public are free to visit reserves, they cannot fish or disturb plant and animal life inside the area.

Kamo High School's seventh form geography class has, for the past 10 years, been involved in developing a marine reserve made up of three different areas, all within Whangarei Harbour. The areas are at Waikaraka, Motumatakohe (Limestone Island) and Motukaroro (Passage or Aubrey) Island. Each reserve makes a distinct and unique contribution to the overall ecology of the harbour's marine environment.

As part of their investigations, students have consulted extensively with the community and received wide ranging support for marine reserves and the proposal for the Harbour. This year the students are finalising the formal application and holding a further round of meetings with key stakeholders. It is their goal to formally lodge the application in the new year.



Whangarei Harbour

A flow chart explaining the process for establishment of marine reserves is included at the back of this brochure.

This booklet summarises the proposal.

*We invite you to send us your views on the proposal. Contact details are on page 11.*

## Goals & Objectives

Our main goal is to protect and restore the marine areas around Motumatakohe and Motukaroro Islands, and at Waikaraka, conserving the many invaluable animal and plant species present. Marine reserves are an important tool of preserving biodiversity in the sea - a goal to which New Zealand has international treaty commitments. We also hope that protection will improve the quality of the waters so that marine life is able to flourish and breed. A second goal is to increase public awareness and to create areas for both study and recreational enjoyment.



*Conger eel - Motukaroro*

## Benefits of the proposed marine reserve

- Depleted fish populations may increase and thrive
- Research opportunities for marine scientists
- A focal point for restoration work in the Whangarei Harbour
- Enhanced conservation objectives for Limestone Island
- Create a "Wet Library", where students can extend class work in a natural environment. This can be done just by putting on a mask and looking in waist deep water or for trained students, descending to the near limits of scuba range.
- Valuable fish nursery areas protected
- Potential for a better understanding of impacts on the Whangarei Harbour
- Create eco-tourism opportunities for Whangarei
- Monitoring sites for bio-security



*Banded Blennie, Motukaroro*

## Implications of the proposed marine reserves Impact on Fishing -

The clear purpose of this proposal under the Marine Reserves Act 1971 is to protect representative unique or special marine habitats, for the country's enjoyment and scientific study. However, the question a local fishers is most likely to ask is: Can the proposed marine reserve areas improve fishing in the harbour? This and other



*Butterfly Perch, Motukaroro*

biodiversity conservation questions need to be asked with urgency. These questions can only be answered by establishing marine reserves and monitoring the results rigorously. Without a network of marine reserves in place to test the benefits we must look to what is being learned from study of the first marine reserves established both here and overseas. We believe, based on our studies, that there will be benefits both indirect and direct. This is based on the sum total of benefits to the whole ecosystem contributed by the reserve area. In terms of fish, the benefits will come from protection and enhancement of major food sources and nursery areas. More specifically there is growing evidence from scientific work of positive effects of increased spawning from

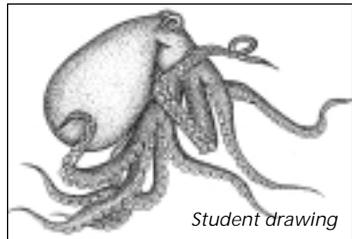
the larger size of individual fish in reserves and direct effects of "spillover" of fish from the reserves into adjacent fishing areas. We are keen to visit and discuss with stakeholder groups the evidence for marine reserves benefiting fisheries and the sea generally. We recommend the following websites on this topic.

<http://www.marine-reserves.org.nz/>

<http://www.panda.org/endangeredseas/pubs.cfm>

With protection fish can survive to larger sizes providing a stronger contribution to the gene pool. This also improves the replenishment of surrounding waters. Many local people interviewed state that in recent years Whangarei Harbour has seen a decline both in the numbers and size of fish. If the proposed reserves are implemented we may begin to see a return to larger, healthier fish populations that will be enjoyed by future generations.

Recent scientific studies show that most marine invertebrates practice mass spawning and need high density populations to reproduce successfully. Like the mature seed tree in the forest, protected marine areas can have immense benefits for kaimoana (seafood) replenishment all along our coasts.



*Student drawing*

## Public Impact

It is hoped that the proposed reserves will eventually reach the standard of other reserves such as the one at Leigh. Some people think that when an area becomes a protected reserve there will be a decline in visitors because you can no longer fish there. Other reserves have proved that this is not the case. There are in fact

a large number of ordinary people who enjoy looking first hand at the sheer abundance of sea creatures. Our aim is not to exclude people: it is quite the opposite - to enhance marine life so people can enjoy it.



*Crayfish, Motukaroro*

## Tangata whenua, Tangata Moana, Kaitiakitanga and the Whangarei Harbour

A major part of the vision for marine reserves in the Whangarei Harbour is the recognition and development of the special relationship local Iwi and Hapu have with the harbour and its ecology.

It is acknowledged that the processes leading to the establishment and management of reserves are guided by Te Tiriti O Waitangi.

Following the principles of the Treaty, we acknowledge the kaupapa of Iwi interest in customary management of the harbour and its resources.

We believe the proposed reserves offer many benefits for Iwi and will enhance traditional approaches to protecting resources from over-use generally. We wish to support local efforts to establish Taiapure and Maitaitai management areas in the harbour. As part of this proposal, we are committed to supporting Iwi by seeking assurances from the Department of Conservation on issues important to Iwi.

## Motumatakohe Island (Limestone Island) - 675 ha

Located mid-harbour opposite the Onerahi Yacht Club, Motumatakohe (Limestone Island) is very close to the heart of Whangarei.

A reserve here will complement the existing land reserve, providing complete protection for an entire ecosystem. The proposed reserve will help to provide a secure breeding ground for rare and endangered native birds such as the New Zealand Dotterel and Caspian tern. Three quarters of the birds in the Whangarei Harbour are migratory wading species feeding over intertidal flats, yet none of these habitats are fully protected.



New Zealand has international reciprocal obligations to protect the habitat of migratory species. This proposed marine reserve would secure and enhance these feeding areas, protecting organisms necessary to maintain the complex feeding interrelationships within the intertidal environment. The proposed marine reserve area contains relatively deep waters which are swift flowing, as well as mud flats and mangroves of significant size.

The deep channels surrounding Motumatakohe and recent lack of human habitation have helped preserve some of its natural state. It is a haven to myriads of marine animals that form the basis of the food chain. Protecting the marine habitats associated with Motumatakohe will provide protection and breeding grounds for marine species such as leatherjackets, eagle ray, snapper, shrimp and mud crabs.

**Recreation** - Motumatakohe's proximity to central Whangarei makes it a likely destination for recreational visitors.

Once the reserve is in place, non-exploitative activities such as marine biology studies, sight-seeing and boating will give people a chance to view a recovering marine ecosystem.

**Water Quality** - Significant historic impacts on the harbour such as wastes from the Portland cement works and Whangarei City sewage have now been dealt with. However concern remains over continued sediment loads coming into the harbour from rural areas and stormwater laden with heavy metals from traffic and other residues from

Whangarei City. With a marine reserve established around Motumatakohe, the public and organisations such as the Department of Conservation will have a greater say in monitoring water quality.



**Birdlife** - The intertidal areas (mudflats and beaches) surrounding Motumatakohe are home to many species of birds. These include the pied stilt, NZ dotterel, southern black-backed gull, oystercatcher, white faced heron, reef heron, pied shag, eastern bartailed godwit and caspian tern. The mudflats provide important feeding grounds for these birds. The proposed reserve includes these mudflats in the hope that protection will further enhance bird life.

**Boundary Considerations** - The current proposed boundary around Motumatakohe Island has changed from the 2000 KHS marine reserve proposal. The current proposal has the channel lying between Motumatakohe and Rat Island included in the marine reserve area. Previous proposals had the channel excluded. In consultation with the Department of Conservation we have learned that it is possible to allow maintenance dredging to continue in the channel by including a provision in the 'Order in Council' that establishes the marine reserve. Navigation and ship movement is not affected by the marine reserve status. We have always worked on the basis that the marine reserve will have no adverse impact on navigation or Port management and dredging. Therefore, in our formal marine reserve application we will recommend attaching a condition to the 'Order in Council' permitting dredging in the Mangawai Channel off the Southern side of Motumatakohe, subject to any necessary resource consents being obtained. Driving the need for the inclusion of the channel area in the marine reserve is the ecological argument that many species of marine life and especially fish will regularly move from the channel or channel edges to the shallow and intertidal areas of the proposed marine reserve. Where possible it is important to include these deeper areas in the marine reserve, despite the intermittent disturbance from dredging.

**Kamo High School Survey Information** - Surveys conducted over the past ten years concluded that the majority of people (around 60%) considered the area would be enhanced by a reserve. Surveys also showed that many people (around 60 %) do not use this area for recreational activity in its present condition.

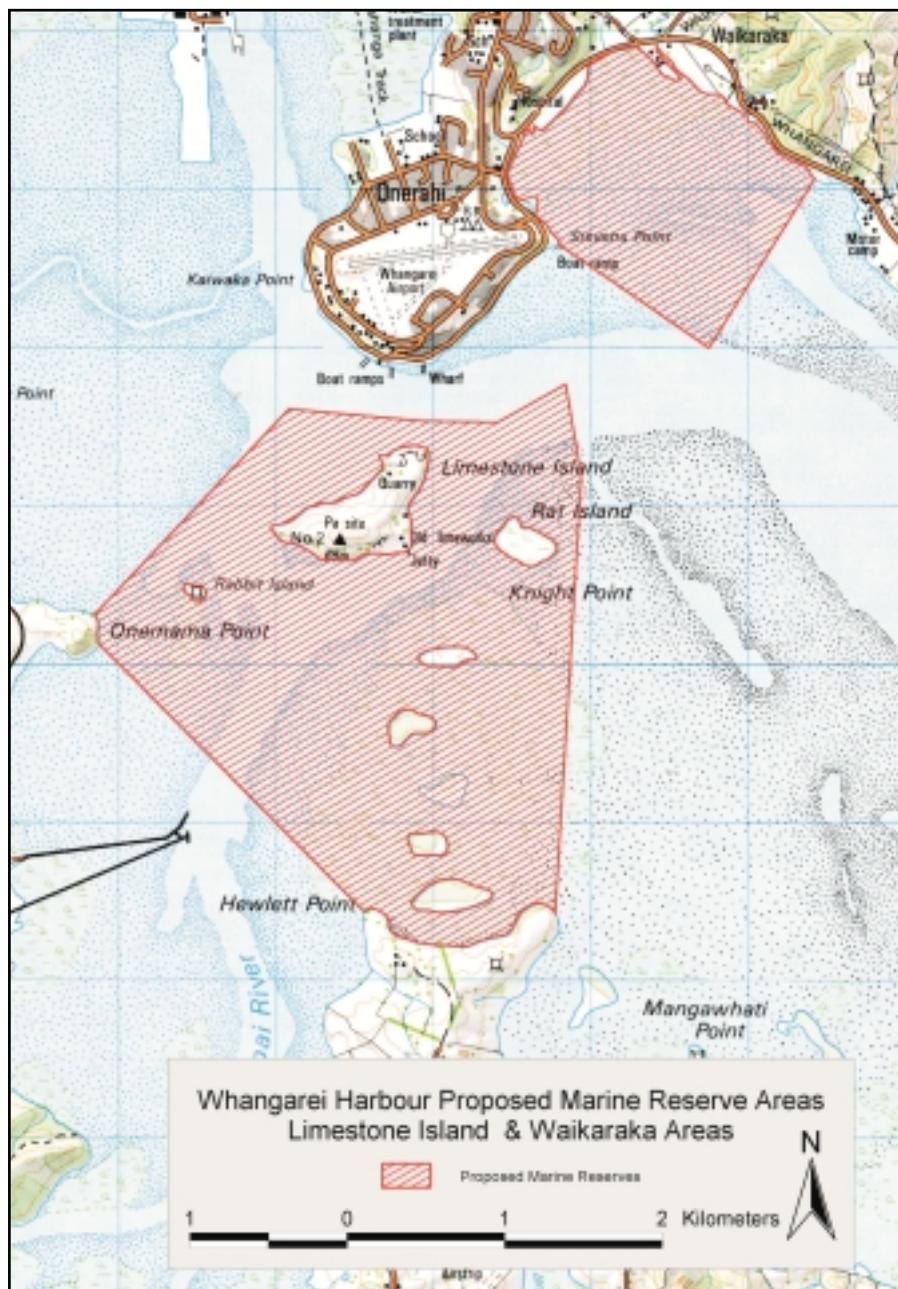
## Waikaraka - 206 ha

The proposed Waikaraka reserve includes tidal flats and salt marshes. It is easily accessible, being close to a main road and within minutes of central Whangarei.

Many organisms, Fish and shellfish live and breed in the muddy calm waters around mangrove roots.



*Scorpion Fish, Motukaroro*



Areas of mangrove forests are called 'mangals' and are one of the most productive environments on earth. Mangals play a vital nursery role. They grow in one of nature's most highly productive zones, the sheltered muddy shore. The mud surrounding the trees teems with life, such as worms, crabs, barnacles, oysters, sea snails, shrimps and cockles. The juveniles of many fish species use the mangrove roots for shelter. Fish like snapper, trevally, kahawai, kingfish and mackeral spend much of their early lives amongst mangroves. Birds also make use of them for protection and shelter. They are significant zones for many insects and spiders, which are all important parts of the food web.

Mangals also play an extremely important role in preventing erosion, flooding and pollution. They are land builders and as silt gathers in them erosion is prevented.

There is a public perception that mangroves are undesirable. As harbours are reclaimed and siltation from subdivision accumulates, mangrove areas naturally extend. Sometimes mangroves encroach into formerly sandy beach areas such as in the upper reaches, where they are not wanted. However, if we wish to avoid mangrove extension we must ensure the harbour is well flushed by avoiding reclamation and preventing runoff sedimentation from poorly managed catchment areas.

Internationally, mangroves cover a wide range of species that have adapted to survive in harsh salt conditions. In fact they are the only trees that will grow in areas regularly covered by salt water. The species of mangrove tree growing in New Zealand occurs only in the north of the North Island of New Zealand





because it is damaged by frosts. In the far north they grow to large trees, such as some of those in this proposed reserve.

**Monitoring opportunities** - The proposed reserve area would be an ideal monitoring site to test rural and urban run-off impacts on the harbour system. Some houses drain their waste into mangals and further north a stream drains farming run-off into the area. Mangroves, as well as having the qualities mentioned above, are a natural indicator of water quality and could be used to monitor pollutants in the harbour.

**Kamo High School Survey Information** - The overall response to the surveys conducted over the past ten years was very positive. Most people (around 70%) said they did not use the area for recreational activities and around half of the respondents supported the idea of a reserve with about 45% unsure, leaving only a small proportion of people opposed to the idea.

## Motukaroro Island (Passage Island) - 26 ha

Motukaroro Island is situated approximately 25 kilometers downstream of Whangarei City, opposite Marsden Point. It is an extension of the harbour's northern rocky shore and is surrounded by unusually deep water. There is a deep narrow channel on its southern side, which has moderate flowing water sheltered from strong winds. On the Marsden Point side, the channel is deeper, wider and swifter. The sea bed is rocky with large areas of kelp and is a haven and feeding ground for an unusually high diversity of fish, including scorpion fish, kelp fish, red mullet, snapper, red moki, john dory, blue maomao, king fish, spotty and leatherjacket. Located on the westward point, you can find a large fragile environment of filter feeders, including anemones and sponges whose brilliant array of colours provide a spectacular dive. With its well established combination of coastal trees and plants, the island, owned by the Northland Port Corporation, attracts many species of bird life, most of which are dependent on marine organisms in the surrounding waters. Its waters contain similar marine species to the Poor Knights Islands and in small areas actually rival it for abundance and diversity. Very few areas in New Zealand can match this richness.

The establishment of a marine reserve at Motukaroro Island would, we believe, assist in the protection of sea life in the area. Even recreational fishing puts demands on a marine environment. The creation of a reserve would encourage more sea life to live and grow there, an added advantage being the likely establishment of a nursery area to provide stock for surrounding waters.



**Recreation** - It is proposed that permitted recreational activities will be non-exploitative e.g. diving, snorkeling, boating, scientific study and scenic viewing. No fishing, hand gathering or the disturbance of any species will be allowed. Motukaroro has the potential to be a very significant dive destination once marine reserve status is established.

**Impact** - The reserve area has been carefully chosen to cause minimal disruption to people using the area. Some commercial fishing does take place in the harbour, mostly involving the use of nets and long lines. We have tried to avoid these areas in the placement of reserve boundaries and since the original proposal there have been some changes to the boundaries as a result of surveys and community feedback. The area around the small wharf at Reotahi Bay has been excluded because of its significance as a recreational fishing site for local people. Based on previous experience with marine reserves, recreational fishing at this site should be enhanced by the spill over effect of larger than average fish moving out of the reserve.

**Tidal Action** - Because Motukaroro is situated in the narrows of a considerable funnel, the outgoing tide from the entire harbour produces a very dramatic velocity. It is the effects of this tide that give the proposed reserve much of its character.

At peak flow bottom sediment is swept away causing the bottom to be scoured out and deepened. Drogue (surface floats) studies proved that water in this flow comes from McLeod's and Parua Bays. This water contains a rich soup of nutrients released by the mangrove community, such as larval production. This sustains the abundant anemones and filter feeders on the western underwater slope of Motukaroro. The colour and brilliance of the marine life on this steep slope is so stunning that it provides an equivalent experience to the wonders of a remote coral reef.

**Kamo High School Survey Information** - Surveys conducted over the past ten years show that the majority of people support this proposed reserve. Over 75% of respondents used the area at least occasionally and around two thirds of people supported the area being protected.

Submissions for this proposal close February 1, 2002 and help to form part of the process of consultation prior to a formal application being lodged in terms of the Marine Reserves Act (see page 12). We are seeking your views, to incorporate them into the formal application.

*For more information, or to send us suggestions, ideas and comments please contact:*

Seventh Form Geography Class

Kamo High School

P.O. Box 4137, Kamo, Whangarei

email: [khs13geo@yahoo.com](mailto:khs13geo@yahoo.com)

Web address: <http://www.kamohigh.school.nz/marinereserve.html>

## Establishing a Marine Reserve

### Pre Statutory Process

Define Objectives	See page 2
Initial Consultation with interested groups	1993 onwards
Site Survey and Investigations	1993 onwards
Draft proposals formulated and public feedback incorporated	1993, 1994 & 1998
Final proposal released for public comment	Nov 2001 <b>we are here now</b>

The statutory process (see section 5 of the Marine Reserves Act 1971 for details).

Application is made to the Director General Department of Conservation (DG)	
Application satisfies S.3(l) of the Marine Reserves Act 1 1971	If application does not satisfy S.3(l): application does not proceed
Public notification of intention to apply for an 'Order-in-Council' declaring the area a marine reserve, anyone owning an estate or interest in land adjoining the proposed reserve any local authority with jurisdiction over the area, any local authority with control of the foreshore in the area, the Secretary of Transport and the Director General of Fisheries notified in writing by the applicant.	
2 month objection period	Includes objections and submissions in support
1 month for the applicant to answer the objections	
DG refers the application, objections and answers to objections to the Minister of Conservation	
Before considering the application the Minister of Conservation considers the objections, and the applicant's answers to them (if supplied)	
Where the DG is the applicant the Minister of Conservation may call for an independent report	
Minister decides whether or not to uphold any objections; applicant and objectors notified in writing of the Minister's decision and the grounds for it	Any objection upheld: application does not proceed
If no objections upheld Minister of Conservation considers the application	Minister not satisfied application meets the criteria in the Act: application does not proceed.
If the Minister of Conservation is satisfied the application meets the criteria in the Act the concurrence of the Ministers of Fisheries and Transport is sought	If concurrence is withheld: application does not proceed
If concurrence is obtained the Minister of Conservation recommends the Governor-General make an 'Order-in-Council' to establish the marine reserve	
'Order-in-Council' is made and notified in the Gazette. Order declaring the marine reserve comes into force 28 days after notification	