

The Ocean is the Earth's last great wilderness.

Marine Reserves are vital protection tools

See the difference when there is no fishing in a reserve area

Poor Knights

1998
Recreational fishing only.



129% increase in numbers

1999
After one year of complete protection.



Pink Maomao

Tarakihi



101% increase in numbers



Snapper



302% increase in numbers



The Poor Knights Marine Reserve was created in 1981. Because of intensive lobbying from recreational fishers and charter boat operators, special dispensation to the Marine Reserves Act was made, allowing recreational fishing, with restrictions on angling methods and gear. It was argued that these measures would protect the permanent resident populations of reef fish, and take pelagic transient fish. Only 5% of the reserve was closed to all fishing, in an area around Aorangi Island. However, after seventeen years of limited recreational fishing, there had been little increase in target fish species.

In September 1998 a no-take reserve was created. A year later, in September 1999 the three reef fish known to be targeted by anglers, snapper, tarakihi and pink maomao, had increased by 302%, 101% and 129% respectively. The recreational fishing is likely to have been the major factor in preventing recovery. Release from fishing pressure, in conjunction with two good seasons of above average sea temperature, allowed a very rapid recruitment of fishes. (Willis, T.J., and C.M. Denney. Effects of Poor Knights Islands Marine Reserve on demersal fish populations. May 2000).

Kapiti Island

Cod and Butterfish are more plentiful within the reserve, and more fish are of legal size.

Blue Cod

In the Reserve 70% cod are of legal size (330mm).

Outside the reserve only 10% are legal size.



Butterfish

In the Reserve 80% of butterfish are legal size (350mm).

Outside the reserve 50% are legal size.

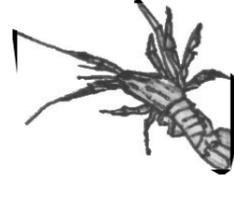


Tonga Island

Spiny lobsters. The abundance, size and fecundity were dramatically greater in the reserve area. The larval stage of spiny lobsters is 9 months, with larvae dispersed by ocean currents. It is important to protect breeding populations, and retain large males.

In reserve

Outside reserve



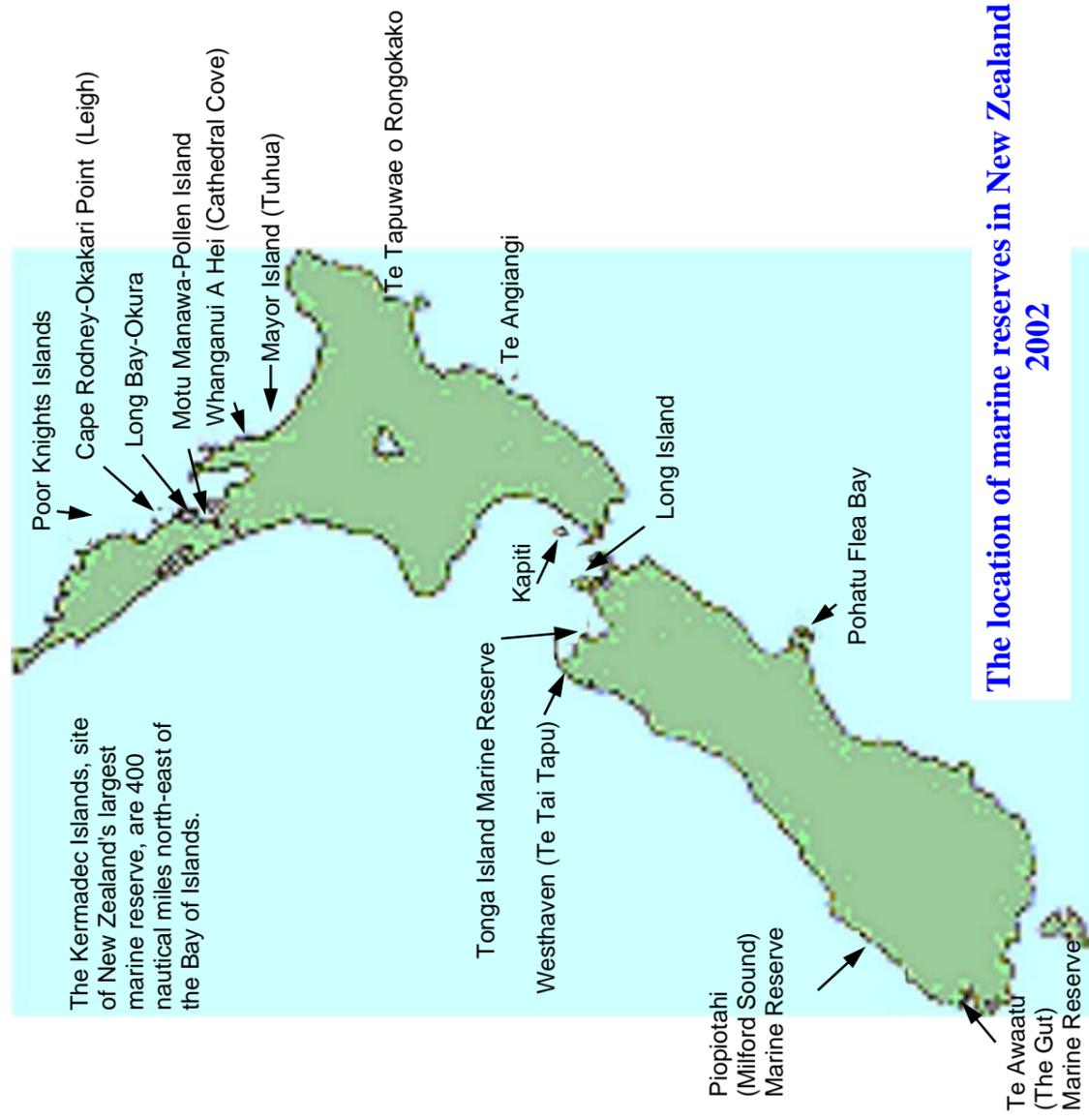
1996
Population



2001
population

22% increase in reserve
12% decrease outside reserve

(Davidson, R.J., et al; Spiny Lobsters in a NZ marine reserve. 2001)



The location of marine reserves in New Zealand 2002

Leigh Marine Reserve.

Snapper size. Legal size 270mm. (Babcock et al 1999)

Average size outside the reserve 186mm



Average size in the reserve 316mm



Ngā Motu Marine Reserve Society



Why have Marine Reserves?

- ◆ Biodiversity increases, as well as abundance and size of many species.
- ◆ Many species inside marine reserves travel into the surrounding waters.
- ◆ Undisturbed habitat and populations allows life to flourish.
- ◆ Larger fish produce more offspring.
- ◆ A network of marine reserves acts as insurance for the future.
- ◆ Protecting 10% of the marine area is considered to be necessary to safeguard marine life. *At present we have only 4% protected.*
- ◆ Technology has taken away the natural refuges in the sea. By establishing marine reserves we help re-create refuge areas.

The 'Ngā Motu Marine Reserve Society Incorporated' was formed in 1997 to establish a network of marine reserves in Taranaki.

Strong public opinion created the SLIMPA (Sugar Loaf Islands Marine Protected Area) in 1991. Recreational fishing is limited, and there is no commercial fishing. This is the first step in the recovery of our coast.

The area is highly valued by all. It is still vulnerable to human pressures, not only at sea, but the effects of intensive land use.

This area of high biodiversity is a unique asset for the community.

For more information, please contact :

**Ngā Motu Marine Reserve Discussion
C/o Post Office Counter
Egmont Village.**

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Seals!

Not a problem in undisturbed ecosystems, or in Marine Reserves

Before man predated the New Zealand Fur Seals, they were found countrywide, even in the very far north, up in Spirits Bay. Now that they are protected, the populations are slowly rebuilding, now at about 10% of the natural level.



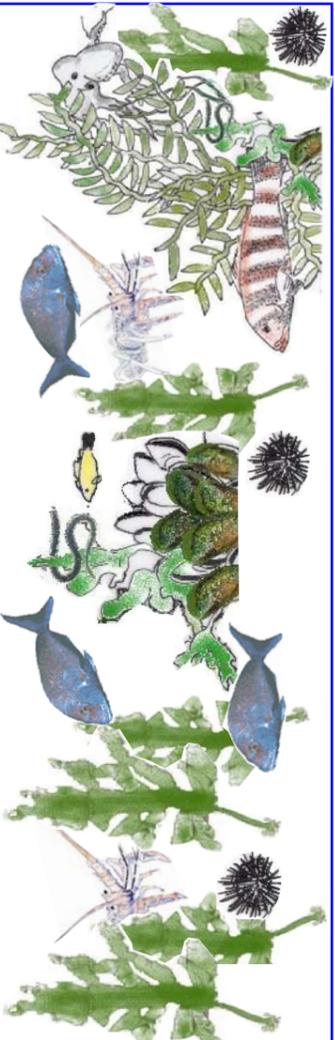
- ◆ The Ngā Motu area is special - the most northerly remaining breeding site for seals.
- ◆ Seals like feeding on lanternfish, squid and barracouta. (Dix 1997)
- ◆ Seals are designed to swim up to 200km in a day. They feed far off-shore in deep water, coming back to "haul-out" on land.
- ◆ Seals are designed to dive down to 300m below the surface, for up to two minutes, to catch deep-water fish species.



Before a marine reserve

Now

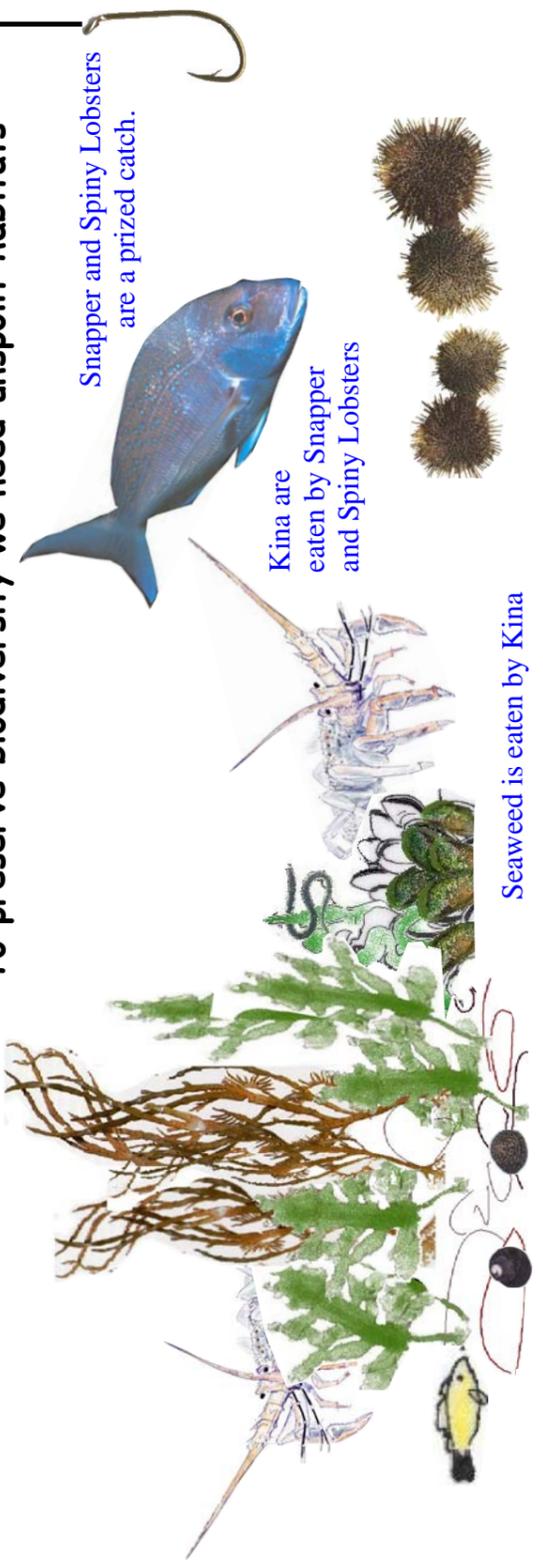
- ◆ 40 times more Snapper
- ◆ Extensive kelp forests
- ◆ Greater biodiversity
- ◆ Larger fish and Spiny Lobster.



Now

We end up with fewer of the edible species because complex relationships are altered.

To preserve biodiversity we need unspoilt habitats



Fishing pressure produces a 'Kina Barren'.

Snapper and Spiny Lobsters are a prized catch.

Kina are eaten by Snapper and Spiny Lobsters

Seaweed is eaten by Kina

If too many Snapper and Spiny Lobsters are caught, more kina survive and eat the seaweed gardens. The fish and worms that used to live in the seaweed have no home. The intricate relationships are lost. Biodiversity decreases. A desolate 'kina barren' results.

(Babcock et al (1999). Habitat change in marine reserves.)

