

5.2.3 HOW DO WE COMPARE?

Most regions have coastal policies and plans and district plans that seek to protect the natural character of the coast from inappropriate subdivision, use and development. The Taranaki region has fewer development pressures on its coastline than other regions such as Northland, Auckland, Waikato, Bay of Plenty, Marlborough and Canterbury. Pressures from subdivision, urban development, recreation, tourism and aquaculture are much greater in these regions than in Taranaki.

In Taranaki, the primary response to coastal erosion threatening existing development is generally for engineering solutions and erosion protection structures rather than using alternative solutions such as recreating dunes as protection mechanisms. Nationally, many councils are now involved in the Dune Restoration Trust of New Zealand exploring alternative approaches to coastal erosion.

The New Zealand Coastal Policy Statement Board of Inquiry noted that the region's inventory of coastal areas of local or regional significance was a unique document. This document, prepared by a working party consisting of representatives from the Taranaki Regional Council, district councils and Department of Conservation will provide valuable assistance for implementing the revised *New Zealand Coastal Policy Statement* when the *Regional Coastal Plan for Taranaki* is reviewed.

5.3 COASTAL AND MARINE BIODIVERSITY

5.3.1 WHAT IS THE STATE OF COASTAL AND MARINE BIODIVERSITY?

The Taranaki region has a 295 km coastline, comprising steep cliffs, rocky shores and sandy beaches, subtidal reefs, rivermouths and estuaries. These provide a wide range of ecological habitats for native plant and animal species. This section describes the state of biodiversity of rocky reefs, estuaries, marine protected areas and threatened marine mammals.

(A) BIODIVERSITY OF THE ROCKY SHORE AND REEFS

Taranaki's intertidal reef systems have generally lower diversity and abundance of species compared to similar type systems elsewhere in New Zealand. This is due to the high wave energies typical of the Taranaki coastline, which give rise to abrasive and turbulent shoreline conditions, high water turbidity, suspended silt, and sand inundation. Notwithstanding that, associated with reef systems is a large diversity of marine life, including fish species and encrusting animals such as sponges and anemones.

Higher species diversity is found on rocky shores where larger rocks are present, as they provide plenty of habitat for rocky shore creatures to shelter under. This type of environment provides more suitable shelter and habitat when compared to sites with cobbles or sandy beaches. Taranaki has more intertidal rocky reefs than sandy beaches. Large, discrete reef systems are present around the Waitara River, New Plymouth, North Taranaki and around Cape Egmont. A smaller reef system lies south of the Waitōtara River. Large subtidal reefs called the



Intertidal biodiversity.

North and South Traps are located offshore from Pātea. A number of smaller offshore subtidal reefs also occur.

The rocky inshore marine environment provides a wide range of different habitats for a number of different aquatic species. This includes species such as starfish, sea anemones, crabs, crayfish, sea cucumbers, mussels, pāua, sponges, whelks and a number of seaweed species. The rock borer which bores into soft cliffs around Taranaki is a local feature.

Results from the Council's state of the environment monitoring of intertidal rocky shore sites have been described earlier in this chapter. The Department of Conservation's monitoring of subtidal reefs is described below.

(B) BIODIVERSITY OF SOFT SEDIMENTS AND ESTUARIES

Estuaries and river mouths make up approximately 16% of Taranaki's 295 km coastline. These are shallow, sheltered areas of productive 'nursery' habitats for a variety of marine life. Taranaki estuaries do not have a wide range of intertidal and subtidal habitats, and are well flushed with fresh water. This results in a high freshwater input/area ratio, creating a harsh environment for estuarine aquatic life that prefers things to be more salty. The low numbers and diversity of fish and shellfish found in Taranaki estuaries have been attributed to this more freshwater type estuary environment²⁸. The Waitōtara and Whenuakura rivers drain mudstone catchments and are highly modified, with large areas of land cleared for farming, and they frequently flood. Both factors contribute to the high silt load in the rivers, a factor which reduces the number and diversity of species in the lower estuary. In comparison, the Tongaporutu and Mimi catchments are not as extensively modified.

The soft substrate of estuaries (consisting of sediment carried down by rivers mixed with detrital material such as leaves, sticks etc.) supports a range of burrowing fauna such as worms, cockles and pipis. Most of these animals feed on detrital material, and bacterial and algal films on the mud surface. These estuarine areas are ideal refuges for juvenile fish of many species and wading birds in search of fish and crustacea²⁹.

The Council monitors two estuaries in an estuarine monitoring component of the Council's state of the environment monitoring programme – Tongaporutu in the north and Waitōtara in the south. Some information is held about conservation values of a number of

28 Taranaki Regional Council, 2008. *State of the Environment Monitoring Hard-shore and Soft-shore Marine Ecological Programmes 2007-2008*. Technical Report 2008-07.



Tongaporutu township and estuary.

estuaries³⁰ but no information had been collected prior to this programme about the diversity and abundance of estuarine life in Taranaki. Previous studies by others^{31, 32} were 'one-off' providing useful information about the ecological status of North Taranaki estuaries but contained no information on species persistence and community stability within the estuaries over time.

A variety of animal life has been identified within the sediment at both estuaries. The most dominant are sand-hoppers (*Paracorophium excavatum*), pipi (*Paphies australis*), cockles (*Austrovenus stutchburyi*), trough shells (*Mactra* sp.), marine bristle worms (polychaetes) and mud snails (*Amphibola crenata*).

Long-term trend analysis was undertaken on data collected at both Tongaporutu and Waitōtara estuaries. The analyses did not indicate significant positive or negative trends – indicating ecological conditions in both estuaries are generally stable³³.

In February 2004, extensive flooding occurred in the Waitōtara River which led to extensive silt movements in the catchment which were either largely deposited on flooded land, in the estuary or taken out to the ocean. As a result, very few animals were present in the April 2004 survey – with only 16 individuals found in 12 core samples. The estuary has

slowly recovered over the past few years and results from the most recent samples collected in April 2008 contained the highest species richness to date, and included relatively high numbers of two common snails that had been present infrequently, or absent, for the previous several years.

(C) BIODIVERSITY OF THE OPEN OCEAN

The northward flowing Westland current and the southward flowing west Auckland current play important roles in determining the distribution and abundance of fish species in the open coast. The level of plankton productivity, and therefore food available for fish, is dependent on the availability of nutrients which can be enhanced by vertical upwellings of currents and local freshwater inputs³⁴. The South Taranaki coast for example, receives nutrients from currents that spiral up off Farewell Spit³⁵.

Localised currents play a major role in the reproductive success of many kinds of fish. Snapper, flounder and trevally spawn off North Taranaki, and after spawning, snapper and trevally move up the Urenui estuary to feed. Recognising the importance of this area for spawning, Urenui Bay is closed for trawling. Recent research has highlighted the importance of estuaries beyond the region such as Kāwhia Estuary, for snapper spawning³⁶.

Over the summer months when warmer currents move down from the north, a number of ocean-going species visit the Taranaki coastline following the abundance of food. The most common species are sunfish, flying fish, marlin, albacore, skipjack and yellow-fin tuna, makō and blue sharks.

(D) BIODIVERSITY OF MARINE PROTECTED AREAS

The marine protected areas of Taranaki represent a range of marine habitats including intertidal and subtidal reefs, boulder fields and sand flats. There are two marine reserves (Parininihi Marine Reserve established in 2006 and Tapuae Marine Reserve established in 2008) and one marine protected area established in 1983 (Sugar Loaf Islands (Ngā Motu) Marine Protected Area).

The establishment of no-take marine reserves on the North Taranaki coast has created opportunities for scientific studies to be undertaken to compare areas impacted from uses such as fishing, with areas that are protected from fishing. Monitoring in marine reserves will determine if the sea life is influenced by human activities including fishing and development or if other factors such as the weather or habitat complexity play a more important role.

29 Taranaki Regional Council, 1991. *Taranaki Coastal Marine Area. Resource Description and Management Issues*.

30 Taranaki Regional Council, 1995. *Comparative Assessment of Ecological and General Conservation Values in the Tongaporutu Estuary*.

31 B. T. Coffey and Associates, 1991. *A Contribution to a Description of Biological Resources in Estuarine, Intertidal and Shallow Subtidal Habitats South of Mokau River to Tongaporutu, February – March 1991*.

32 Hayward, B. W., et. al., 1999. Marine biota of the North Taranaki coast, New Zealand. *Tane*, 37:171-199.

33 Taranaki Regional Council, 2008. *State of the Environment Monitoring Hard-shore and Soft-shore Marine Ecological Programmes 2007-2008. Technical Report 08-07*.

THE SECRET LIFE OF A TARANAKI ESTUARY

Some of them thrive on gardening. Some are hairy but handy swimmers. Others have an important and long-standing role in gastronomic tradition. And just about all are fussy about the quality of their home environment.

They are the shellfish, marine snails, worms and other tiny marine animals that make their homes in and around our estuaries. They may be out of sight and out of mind for most of us but they are vital as both maintainers and indicators of the quality of coastal waters.

And they've evolved some interesting strategies as they cope with the challenges of life in the zone where water, earth and air meet.

Titiko, or mud snails, are the gardeners, ploughing the bottom sediment at low tide, sucking in and excreting twice their body weight in an hour. In doing so they filter the mud, improving its properties to favour growth of the plants upon which they feed. They have few predators and live for a dozen years or more. And when mating, any individual can take the role of either gender. Very efficient.

What they don't like is pollutants, especially heavy metals. This is a sensitivity they share with many of their neighbours, including the well known and much-loved pipi.

A traditional favourite food of Māori (and more than a few non-Māori), the pipi sucks water to its gills to be strained for food. Young larvae settle at the high tide mark and move down into the estuary as they grow.

Pipi shells became tools for scaling fish and scraping flax, and were also used as rattles.

Other estuary shellfish found in Taranaki have similar cultural pedigrees. Whāngai karoro, or large trough shells, provided pendants as well as food. Tuangi (also known as 'tuangi cockles', though they are not a true cockle) saw use as delicate carving tools and rattles after their meat was consumed.

And the hairy but handy swimmers? They're the marine bristleworms, or polychaetes (rhymes with parakeets, though there the similarity ends), who use their fine bristles for swimming as well as holding themselves in their burrows. Some of these creatures are also the do-it-yourselfers of the estuary, constructing their own 'shell' in the form of a tube made of sand and shell segments, held together with a sticky secretion.

So they're a mixed bunch, these estuary dwellers, and they put the diversity into biodiversity. And together they make Taranaki's estuaries very much greater than the sum of their parts.



Tongaporutu estuary.



Titiko or mud snail (*Amphibola crenata*).



Pipi (*Paphies australis*).

34 Ministry of Fisheries, May 2008. *Fisheries Plan North West Finfish Fishery, Version 4.1*

35 Rush, M. 2006. *Netting Coastal Knowledge: A report into what is known about the South Taranaki-Whanganui marine area*. Published by the Department of Conservation, Wanganui Conservancy.

36 Morrison, M. 2008. Presentation to the Coastal Planners Group.

LOOKING FOR PATTERNS IN NATURE

Although he might be embarrassed at the comparison, Barry Hartley has a similar outlook on biodiversity that Darwin and his contemporaries would have had – everything in nature is fascinating, worthy of study and intrinsically connected.

Barry claims to have retired in 1993, but really that just meant being able to spend more time on his passion – gathering data and observations about the biodiversity, particularly of birds, and pondering the trends and patterns.

Barry is more than just a bird watcher. He also gathers data on when different plant species are flowering or fruiting, recognising that patterns of bird diversity will reflect the availability of food for them.

Since 1996, Barry has monitored bird visitors to nearby estuaries. Mōkau is the most fascinating and diverse. Others he watches include Urenui, Tongaporutu, Mohakatino and Awakino (technically both the Mōkau and the Awakino estuaries are in the Waikato region).

In 20 years he has observed more than 70 different types of birds using these estuaries. He has detected seasonal patterns – pied stilts that return each year to the South Island to breed, royal spoonbills that have looked at one stage like they might set up a nest, and dozens of other shore birds, some of which include Siberia or Alaska in their annual travels.

The dead birds that wash up on the South Taranaki coast also tell a story. Each month Barry surveys a 12.5 km stretch of coast between Ōkato and Opunake, gathering a lot of information about birds that make the wide oceans their home. The short-tailed sooty shearwaters migrate to the North Pacific to breed. When they get washed up on the South Taranaki coast, it could be due to storm conditions out at sea, or a lack of food.

Sooty shearwaters, or the muttonbirds, migrate past our coast twice a year, and again, the numbers turning up on the beach reveal information about the ocean conditions. Barry believes the data he collects could also provide information about changes in climate.

A few years ago, Barry collected 1,600 dead prions (small ocean-going birds), an unusual event compared to the one or two he would normally



Barry Hartley monitoring seabirds.

find. He attributes the deaths to starvation, maybe due to storms, maybe due to change in climate affecting food supply.

Every so often, Barry picks up a dead bird that has been banded. This is like finding treasure, as tracing the bird's origins provides new information on its behaviour. A few years ago, he found a yellow-eyed penguin 700 km from where it had been banded. Fiordland penguins have also been found, rather a long way from home.

Barry's regular surveys reveal seasonal trends in several species. Little shags are known to breed in only two locations in Taranaki, but there are more of them around than these could account for. Where else do they go to breed? Kingfishers turn up in their numbers in the estuaries during winter targeting mudcrabs, maybe they need something salty in their diet. Black-fronted dotterels are normally rare north of the Turakina River, but one year, they were seen in reasonable numbers, for no apparent reason. Barry suspects it might have had something to do with feeding or breeding.

Red-billed gulls are another coastal bird with an interesting pattern. They breed on the Sugar Loaf Islands and are observed on the coast and around Lake Rotomanu. There is a real absence of them around the South Taranaki coast during the summer but in winter they can be there in flocks of up to 400.

Barry suspects there are two distinct populations – the North Taranaki birds and a southern population that returns to Kaikoura to breed (as evidenced by banded birds), only venturing up to South Taranaki for the winter.



Volcanic material has formed features on the land and under the sea.

Sugar Loaf Islands (Ngā Motu) Marine Protected Area (SLIMPA) and Tapuae Marine Reserve

The Ngā Motu/Sugar Loaf Islands, just offshore from New Plymouth, are eroded remnants of volcanic domes, forming a group of low sea stacks and seven islands that provide a unique semi-sheltered environment along a coastline that is generally very exposed. The subtidal marine habitats around the Sugar Loaf Islands include spectacular canyons, caves, rock faces with crevices and overhangs, large pinnacles, boulder fields and extensive sand flats. Distinct from the rest of the Cape Egmont coastal unit, these low sea stacks and islands provide the firmest and most stable substrate on the open Taranaki coast.

The Sugar Loaf Islands (Ngā Motu) Marine Protected Area and the recently gazetted Tapuae Marine Reserve take in these diverse range of habitats and sheltered areas for marine life around the Seal Rocks, and also intertidal and subtidal habitats typical of the Cape Egmont coastal unit (Figure 5.10).

The Sugar Loaf Islands are important for 19 species of seabirds, with approximately 17,000 seabirds nesting here. Prominent species include diving and grey-faced petrels, red-bill and black backed gulls, and white-fronted tern. The islands also have a small breeding colony of New Zealand fur seal. Reasonably static seal numbers have been recorded around the islands from 1990 to 2001³⁷.



The Sugar Loaf Islands (Ngā Motu) Marine Protected Area.

Waters surrounding the islands are extremely rich in species diversity with at least 89 species of fish, 33 species of encrusting sponges, 28 species of bryozoans (small coral like organisms) and nine types of nudibranchs (small sea slugs). The northernmost records of some cooler water species as well as the southernmost records of some warmer water species are found in this area, reflecting the dynamic currents that influence this coast. Triplefins, and other reef associated fish (e.g., red moki, leatherjackets, butterfly perch, scarlet wrasse, spotty, blue cod) and short-tailed stingray reside here. Ocean species such as John Dory, kingfish, kahawai, gurnard, snapper, trevally and mullet are other fish species commonly seen. The area is also home to many rock lobster.

Fish, rock lobster and invertebrates have been monitored each summer since 1999 during the summer months (apart from 2003-04 due to unfavourable weather conditions). Information on the distribution of the kelp *Ecklonia radiata* has also been collected.

Results from the first three years of monitoring suggested that there were significantly more fish, and more types of fish within the marine protected area than outside it³⁸. This was attributed to there being better habitat for fish within the marine protected area rather than to the various fishing restrictions. However, there did appear to be a greater abundance of snapper, blue cod and rock lobster, all of which are targeted by fishers, within the largely 'no-take' conservation area compared to the rest of the marine protected area and to the sites beyond it.



Red moki and encrusting sponges.

37 Miller, R, Williams, B 2002. *New Zealand Fur Seal (Arctocephalus forsteri) Numbers at the Sugar Loaf Islands (Ngā Motu) Marine Protected Area, New Plymouth*. Published by Department of Conservation, Wanganui Conservancy.

38 Miller, R, Williams, B, Duffy, D 2005. *Reef Fish of the Sugar Loaf Islands (Ngā Motu) Marine Protected Area*. Department of Conservation Research and Development Series no. 226.

Parininihi Marine Reserve

The Parininihi Marine Reserve (Figure 5.11) includes a section of the wild high-energy North Taranaki coast. Along this part of the coast, sand is constantly on the move and the environment is forever changing. The expansive reef and surrounding sand and mud areas are home to a variety of fish species (such as blue cod, blue moki, red moki, gurnard, John Dory, leatherjackets, kahawai, red cod, tarakihi, trevally and snapper) and rock lobster populations.

However, what makes the area particularly special is its collection of rare and exotic sponges which spread in a vividly coloured carpet across reef ledges in the area. These dense assemblages cover about 75% of available reef surface and are among the densest and most diverse communities in New Zealand. One report has suggested that sites on the Pariokariwa Reef are important on a national and global level, comparable to sites in Antarctica³⁹.

Baseline surveys of both fish and rock lobsters in the Parininihi Marine Reserve area and on the adjacent Waikiekie reef were conducted in the 2006-07 and 2007-08 monitoring seasons, although they were somewhat limited due to the weather.

(E) THREATENED MARINE SPECIES.

New Zealand has 368 threatened marine species⁴⁰. This includes 4.5% of the seaweeds, 2.4% of the invertebrates, 4.2% of the fish and 62.3% of New Zealand's 122 species of seabird (excluding waders and shorebirds). An estimated 16.7% of New Zealand's 48 species of marine mammals are threatened.

Great white sharks and basking sharks are the most at risk of extinction and are classified as gradual decline. Great white sharks occur throughout Taranaki and are fully protected in New Zealand waters under the Wildlife Act 1953. It is illegal to hunt, kill or harm them within the 200 nautical miles limit.



Encrusting sponges, Parininihi Marine Reserve.

Threatened marine mammals observed in Taranaki waters include orca/killer whales (*Orcinus orca*), humpback whales (*Megaptera novaeangliae*), southern right whales (*Eubalaena australis*) and Māui's dolphins (*Cephalorhynchus hectori mauī*). Māui's dolphin and orca are listed as nationally critical i.e. they have a very high risk of extinction, and southern right whales are listed as nationally endangered⁴⁰.

The Māui's dolphin is the world's smallest dolphin at 1.7 m long and with an overall population size of about 111 animals is the rarest. This small population size, together with biological factors including late maturity, slow reproductive rate, and longevity make the population particularly susceptible to premature deaths of individual animals. Māui's dolphins are found only along the west coast of the North Island of New Zealand and so have a limited habitat range. Fishing is the primary cause of human-induced mortality (set netting in particular) where the cause of mortality is known. However, other causes of mortality probably include pollution, plastic debris, and vessel strike.

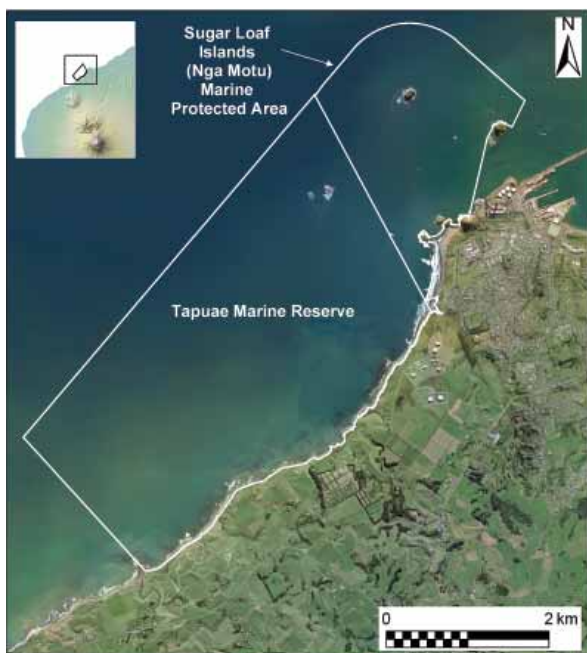


Figure 5.10: Sugar Loaf Islands (Ngā Motu) Marine Protected Area and Tapuae Marine Reserve.

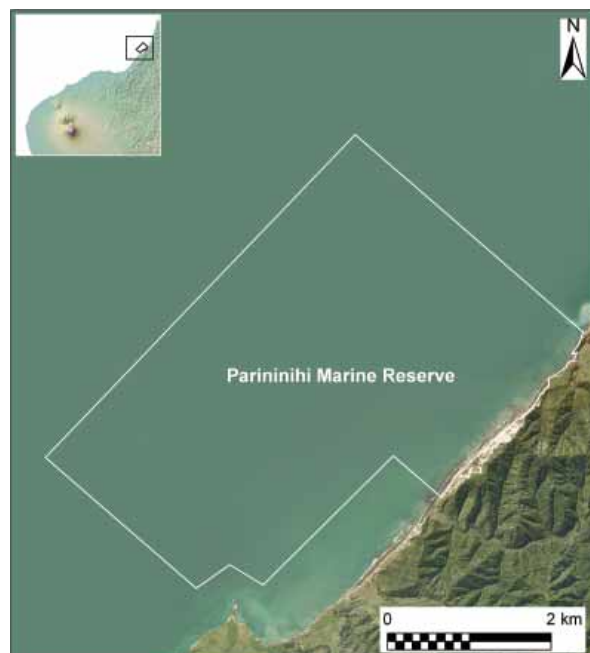


Figure 5.11: Parininihi Marine Reserve.

39 Battershill, C.N. and Page, M.J. 1996. *Preliminary Survey of Pariokariwa Reef North Taranaki*. Prepared by NIWA for the Department of Conservation.

40 Hitchmough, R; Bull, L; Cromarty, P. (Comps) 2005. *New Zealand Threat Classification System Lists: 2005*. Science & Technical Publishing, Department of Conservation, Wellington.

LATTER-DAY WHALE HUNTERS ON RIGHT TRACK

They're hunting southern right whales in Taranaki waters but it's nothing like the bad old days when an onslaught of hunters cleaned out what had been an important breeding ground.

Rather than deadly harpoons, darts are the weapon of choice these days as small tissue samples are collected from visiting southern right whales as part of a Department of Conservation / University of Auckland research project.

The aim is to find out whether the whales cruising local waters are genetically distinct from the 1,000-strong population that breeds near the remote Auckland Islands, nearly 500 km south of the South Island.

Evidence so far suggests the locals are a separate but desperately tiny group with as few as 11 breeding females.

It's a far cry from early colonial days when the South Taranaki Bight was known as Mothering Bay for the number of whales breeding in the area, and settlers complained about the noise of the large mammals. Adults average 14.5 m long and newborn calves are between 4.5 m and 6 m.

Southern rights, or tohorā, were hunted commercially from 1791 to the mid 1900s and have been protected by international agreement since 1935. Two whaling stations were established in New Plymouth, one near the Huatoki Stream and one at Ngāmotu.

The species' English name reflects its history: To whalers, they were the 'right' ones to kill – large, slow-moving, buoyant when dead and providing good quantities of bone and oil.

While the tohorā population around the Auckland Islands appears to be recovering well from the decades of mass slaughter, those closer to our home are evidently struggling.

Since 1990 there have been 30 reported sightings of southern right whales in Taranaki waters, seven of them cow-calf pairs. This indicates that local waters are an important breeding area for tohorā, who generally return to the same breeding grounds every three years⁴¹.

Tohorā are mainly black, with no dorsal fin. Spray from their blowhole is V-shaped. Anyone spotting one off the coast should call DOC on 0800 362 468.



Calum Lilly, Department of Conservation

Southern right whale cruising along the Whanganui-Taranaki coast.

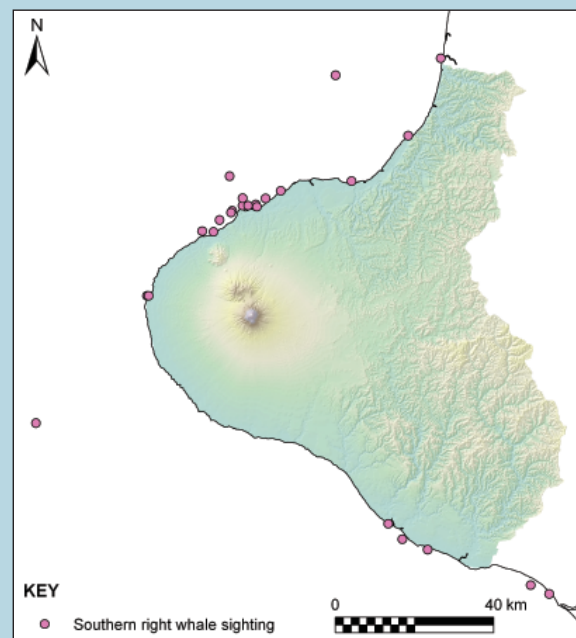


Figure 5.12: Sightings of southern right whales around the Taranaki coastline.

41 Patenaude, N. 2003. Sightings of Southern Right Whales Around 'Mainland' New Zealand. Science for Conservation 225.

Much of what we know about marine mammals has been determined from stranded animals. Scientists take measurements, determine their ages and diet and, from genetics, draw conclusions about the distribution and size of marine mammal populations. Thus stranded marine mammals are an important source of information about marine mammal diversity.

Since 1913 there have been 117 strandings of marine mammals recorded in the Taranaki region (Figure 5.13). These were individual animals in all but six incidents. Taranaki does not have mass stranding events like those that occur in places such as Golden Bay and Stewart Island. Three is the most animals that have stranded at any one time. Most are found dead and of those few found alive only one animal was refloated, a pygmy sperm whale, but it later re-stranded. The most frequently stranded species is the common dolphin (19 incidents).

Beaked whales are the least known of all the marine mammals. They are reclusive creatures that are not often seen at sea and new species have been discovered only in the past decade. Of interest is the fact that seven different species of beaked whales have stranded on Taranaki beaches in 31 individual stranding incidents (Figure 5.13).

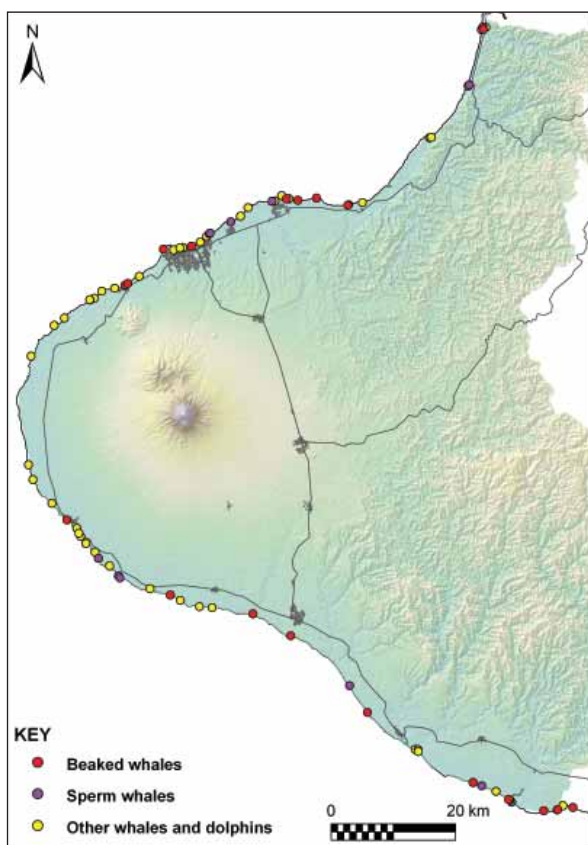


Figure 5.13: Stranded marine mammals recorded since 1913 around Taranaki.

Sperm whales have stranded on Taranaki shores 12 times with three whales stranding at Pihama in 1988 and two at Waverley Beach in December 2007. Single sperm whales have stranded 10 times. There is a process in place to ensure precious customary materials are made available for iwi. It is illegal to remove any part of a stranded marine mammal unless the animal has been there for a long time, and decayed, and the bone has naturally separated.

5.3.2 HOW IS MARINE AND COASTAL BIODIVERSITY MANAGED IN TARANAKI?

(A) PLANS

The *Proposed Regional Policy Statement* identifies the importance of indigenous biodiversity, including that in the coastal and marine environment. The *Regional Coastal Plan for Taranaki* recognises the importance of safeguarding the coastal and marine biodiversity, particularly in the areas of significant conservation values. The *New Zealand Coastal Policy Statement* is currently in the process of being reviewed, and may have important implications for the review of the *Regional Coastal Plan for Taranaki*. Initial indicators are that the *New Zealand Coastal Policy Statement* will require coastal plans to give greater recognition to the protection of indigenous biodiversity in the coastal marine area.

The Taranaki region will be covered by two specific fisheries plans developed by the Ministry of Fisheries in collaboration with tangata whenua and relevant stakeholder interests: *Fisheries Plan North West Finfish Fishery*⁴² and *Fisheries Plan North West Shellfish*. It is expected these plans will be implemented within the next two-three years. The finfish plan covers the inshore fisheries along the entire length of the North Island's west coast. Key species included in the plan are snapper, tarakihi, red gurnard, grey mullet, flatfish, trevally, school shark, rig, hāpuku (groper), kahawai and leatherjacket.

(B) COMMERCIAL FISHING MANAGEMENT

The Ministry of Fisheries primarily manages fishing through the quota management system (QMS). Under the QMS, a total allowable catch (TAC) is set for each fish stock to constrain overall catches. TACs are set at levels to ensure the long-term sustainable use of fisheries resources. When total allowable commercial catch levels are set, Māori customary fishing interests, recreational fishing interests in the fish stock concerned and all other mortality to that stock caused by fishing are considered.

The Taranaki region is a part of the generic Fisheries Management Area 8 that extends between Tirua Point in the north and Pukerua Bay in the south. Each management area is covered by statistical areas which are areas where the Ministry of Fisheries requires commercial fishers to report where they have caught fish.

The total allowable commercial catch (TACC) for the North Island west coast snapper fishery was reviewed and reduced in 2005 in an effort to bring about rebuilding rate for the snapper stock within a projected timeframe. Some Taranaki commercial fishers are experiencing problems with this measure as they are having difficulty in constraining their catches against the lower TACC due to high snapper abundance in the region. Total allowable catches for some other key species are listed in Table 5.9.

Figure 5.14 illustrates the commercial landings of five key fish species found off the Taranaki coast of greatest interest for both recreation and commercial fishers (snapper, tarakihi, gumard and rig). Each graph illustrates the TACC and total landings. The maps beside each graph illustrate the quota management area for each fish stock.

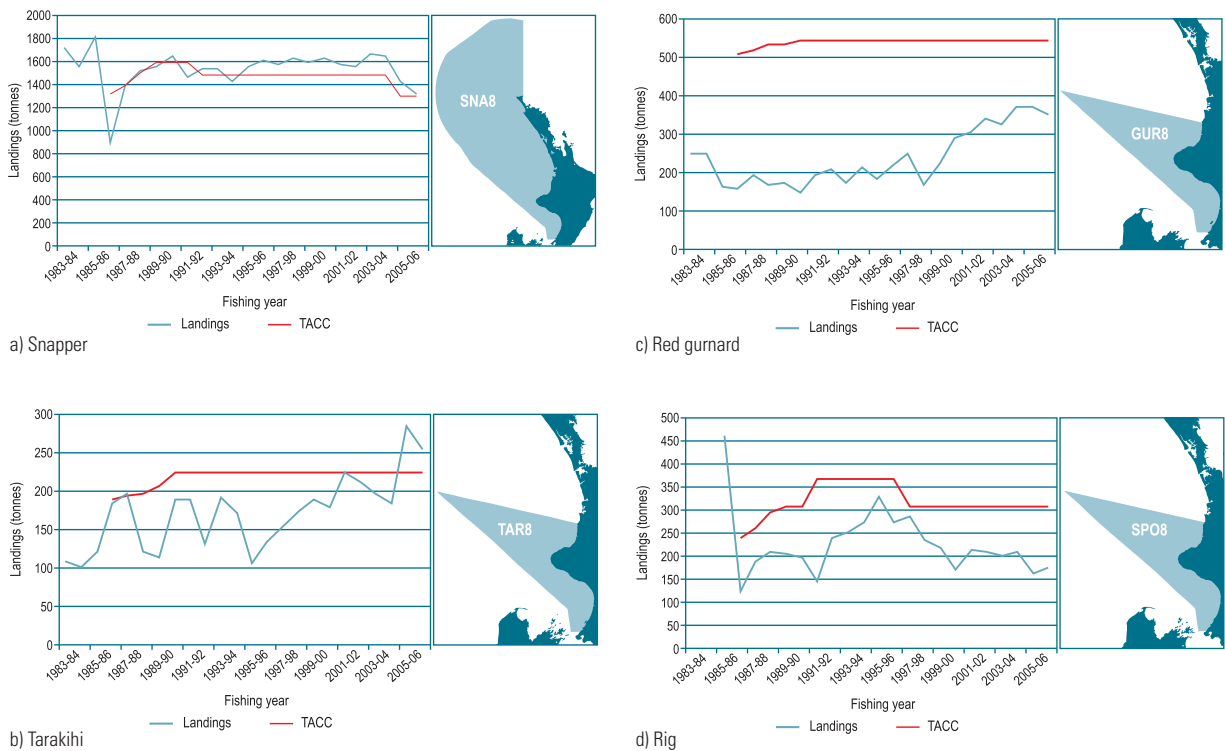
Some of the fishing methods used on the North Island West coast, trawling in particular, involve the use of equipment that comes into contact with the seabed, and can therefore impact on the animals

Table 5.9: North Island West Coast Total Allowable Catches (TAC), Total Allocable Commercial Catches (TACCs) and customary and recreational allowances for some finfish species(tonnes).

Stock	TAC	TACC	Customary allowance	Recreational allowance	Other fishing-related mortality allowance
Snapper (SNA8)	1785	1300	43	312	130
Tarakihi (TAR8)	-	225 ¹	-	-	-
Gumard (GUR8)	-	543	-	-	-
Rig (SPO8)	401	310	-	-	-
Kahawai (KAH8)	1040	520	115	385	20

Data: Ministry of Fisheries. 2008.

Note 1: TAC not yet set, so the only allocation is to the commercial sector, non-commercial fishers are still entitled to fish for this species.



SOURCE: Ministry of Fisheries 2008.

Figure 5.14: Commercial landings (tonnes) and Total Allocable Catches (TACC) (tonnes) of key fish stocks.

and plants living on or attached to the bottom of the sea. Some of this equipment is heavy enough to leave furrows through soft sediment and dislodge harder material. Figure 5.15 shows the distribution of bottom trawl, bottom pair trawl and mid-water trawl fishing activity on the North Island west coast. The map shows indicative fishing effort of bottom and mid-water trawl.

Commercial and recreational fishers are represented on the Taranaki Fisheries Liaison Committee. This is a long-standing multi-stakeholder fisheries forum which includes stakeholder representatives from all sectors within the region as well as the Department of Conservation and the Council. This committee is consulted by the Ministry of Fisheries on a number of fisheries management issues.

(C) MANAGING RECREATIONAL USE

Recreational fishing takes place for fun and for food to feed family and friends. Recreational fishing is primarily managed by daily bag limits, minimum legal sizes, method controls and area limits.

Unlike commercial fishers, recreational fishers are not required to report the quantities of fish that they catch. However, survey techniques are used to estimate recreational catch, which in turn provides an indication of recreational use. Table 5.10 shows estimates of recreational catches of some species. The estimates are derived from information obtained in diary surveys where a randomly identified group of fishers kept a diary for 12 months recording what they caught. Nationwide surveys were undertaken in 1996 and 2000. Accuracies for both surveys have been questioned – the 1996 estimates may be lower than the actual amounts and the 2000 figures are probably over-estimates. However, the point estimates and ranges do indicate the likely magnitude of the recreational catch particularly when compared with the actual commercial catch.

A recent study gathered information about the South Taranaki coast through a literature review, running workshops with local organisations, carrying out face-to-face interviews with people who were familiar with the coast and undertaking a postal survey⁴³. Eighty-five people took part in face to face interviews, 55 people returned written questionnaires and seven groups took part in workshops. 68% of people responding to the requests for information⁴⁹ had more than 20 years experience of the area and many had lived, fished and enjoyed the coast for more than 40 years. The observations of change over that time, although anecdotal, are therefore based on many years. The majority of respondents (70%) used the coast for recreational fishing as the project approach targeted individuals with knowledge and experience of the coast.

Fishing has been important to the local pākehā and tangata whenua in South Taranaki since it was first settled. In recent years, improvements

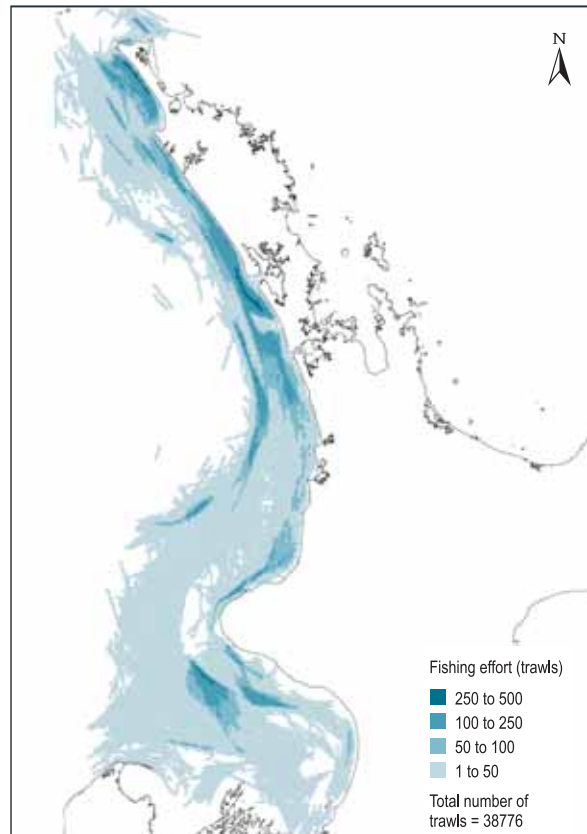


Figure 5.15: Trawl activity within the West Coast North Island.

in technology and the advent of more affordable boats have seen increased numbers of people enjoying this pastime. Participants were asked to identify what changes they had noticed in the area. More than 50% of survey respondents believed that fishing had got harder



Diving for crayfish.

43 Rush, 2006. *Netting Coastal Knowledge: A report into what is known about the South Taranaki-Whanganui marine area*. Published by the Department of Conservation, Wanganui Conservancy.

Table 5.10: Recreational catch estimates for key North Island West Coast stocks with commercial catch as a comparison.

Fish stock	Range (tonnes) 1996	Estimate (tonnes) 1996	Range (tonnes)	Estimate 2000	Actual commercial catch - 2000
Snapper (SNA 8)	215-255	240	215-255	661	1500
Tarakihi (TAR8)	25-35	28	25-35	30	225
Gurnard (GUR8)	23-35	28	25-35	40	534
Kahawai (KAH8)	no data	204	no data	441	272

SOURCE: Ministry of fisheries. 2008.

in recent years. This they attributed to improved technology (e.g. fish finders, better boats etc.), the management of fishing through the quota management system, the number of trawlers – past and present – the increased number of fishers, and sand covering reefs. Twenty five percent of respondents considered that fishing was getting easier. This they attributed to improved technology, the management of fish through the quota management system and the voluntary trawl agreement. The remaining 25% of respondents felt that fishing was as good as it had ever been. They attributed this to the weather limiting access and so preventing over-fishing and to improved technology such as better boats so that they could travel further to fish.

Those respondents that felt that fishing had changed made one or several of the following observations:

- a decrease in the shoreline fish stocks;
- a change in the amount of shellfish such as tuatua, mussels and pāua;
- an increase in the number and size of paddlecrabs;
- a decline in the kahawai;
- an increase in the number of spiky dogfish;
- a decrease in the number and size of groper or hāpuku; and
- that to catch blue cod you had to go further off shore.

The Ministry of Fisheries notes that there has been no evidence of a decrease in shoreline stocks, in fact, snapper have become extremely abundant in Taranaki. There is also no data to support a decline in kahawai abundance nor the need to travel further offshore to catch blue cod. However, the Ministry of Fisheries collects information at a larger scale (such as at the level of the quota management areas) than at the scale of this study.

(D) CUSTOMARY FISHING

Fishing and the gathering of other kaimoana was, and remains today, a fundamental part of being Māori and living on the Taranaki coast with tangata whenua holding a very strong relationship with the sea. Traditional management entails a whole body of knowledge about the resource and how and when to access it. The report into the South Taranaki coastal area referred to above noted that customary management has had to adapt to new circumstances, and while there may have been some loss of adherence to traditional management

practices in the past, there is evidence that this may well return with the efforts of local iwi. Customary knowledge is held sacred by tangata whenua and only passed on to those who will look after that knowledge.

Traditional management governing fishing practices within an area of significance to tangata whenua can be undertaken using the Fisheries (Kaimoana Customary Fishing) Regulations 1998. Customary rights provided for under these regulations allow tangata whenua to establish management areas (mātaihai reserves) where they can create bylaws to oversee fishing within these designated reserves and to create management plans for their overall area of interest. The kaimoana customary fishing regulations take effect in an area after tangata whenua successfully notify tangata kaitiaki and boundaries of their rohe moana and awa. If tangata whenua choose not to utilise the kaimoana customary fishing regulations they can still exercise their customary right through issue of a customary fishing permit under the Fisheries (Amateur Fishing) Regulations 1986. The identification and notification of tangata kaitiaki and rohe moana requires considerable consultation and to date no appointments have been made within the Taranaki region.

Ministry of Fisheries-led fisheries plans, including the North West Finfish Fishery, North West Shellfish, and North Island Eel (tuna) fisheries plans recognise important taonga species, including hāpuku, kahawai, pātiki, toheroa, kina, green-lipped mussel, pipi and tuna. These and other species are listed in deeds of settlement reached with various iwi and hapū within the Taranaki region.

(E) MARINE PROTECTION

Marine reserves are the highest level of protection. Two marine reserves have been established in Taranaki: Parininihi Marine Reserve (1,844 ha) and Tapuae Marine Reserve (1,404.3 ha). Together they cover an area of 3,248.3 ha. Marine parks represent another level of protection. The Sugar Loaf Islands (Ngā Motu) Marine Protected Area covers 489.7 ha.

Other forms of protection include cable and pipeline zones where certain types of fishing are restricted. They stop netting and prohibit anchoring. The different types of areas around the Taranaki coast with some form of protection from fishing activities are set out in Table 5.11. However, fishing restrictions tend not to be enforced in all areas.

COASTAL AND MARINE ENVIRONMENT

Table 5.11: Area-based fishing restrictions in Taranaki.

Area restriction	Area	Length of coastline affected between Patea and Awakino	Fishing sector effected
Parininihi Marine Reserve	1,844 ha	5.6 km	<ul style="list-style-type: none"> • All fishing prohibited. • Shape of marine reserve still allows surfcasting along 3km of coastline.
Tapuae Marine Reserve	1,404.3 ha	5km	<ul style="list-style-type: none"> • All fishing prohibited.
Sugar Loaf Islands (Ngā Motu) Marine Protected Area	489.7 ha	2 km	<ul style="list-style-type: none"> • Commercial fishing (except trolling for kingfish and kahawai) prohibited. • Recreational set netting and longlining prohibited. • i.e. recreational fishing, diving and potting for rock lobster permitted.
Pohokura pipelines and platforms	872 ha	1 km	<ul style="list-style-type: none"> • All vessels greater than 9 m in length prohibited from anchoring. • Trawling prohibited. • No restrictions on any other fishing.
Māui pipeline – Ōaonui	14,100 ha	8 km	<ul style="list-style-type: none"> • No fishing or anchoring except for fishing vessels being used to set or lift nets or rock lobster pots, or paua or kina fishing as long as these activities are carried out in daylight hours and do not involve attachments to the seabed and are within 2 miles of low watermark. • Note this restricts commercial set nets as they leave gear out overnight.
Māui A and B pipelines	Not calculated	NA	<ul style="list-style-type: none"> • Restricted area for all New Zealand ships.
Urenui no trawl zone	15,340 ha	45 km	<ul style="list-style-type: none"> • Prohibits trawling (Fisheries (Central Area Commercial Fishing) regulations 1986. • Does not impact any other fishing sector.
New Plymouth to Awakino no trawl zone	9,100 ha	25 km	<ul style="list-style-type: none"> • Voluntary no trawl zone. • Does not impact any other fishing sector.
Cape Egmont to Rangitikei river no trawl zone	36,000 ha	99 km	<ul style="list-style-type: none"> • Voluntary no trawl zone. • Does not impact any other fishing sector.
Set net ban – Pariokariwa Point to Maunganui Bluff.	not calculated	37 km	<ul style="list-style-type: none"> • Recreational set netting prohibited to 7 nautical miles. • Commercial set netting prohibited out to 4 nautical miles, with some limited commercial netting beyond that.



Silvia Seal, Department of Conservation

Maui's dolphin (*Cephalorhynchus hectori maui*).

(F) THREATENED SPECIES MANAGEMENT

To protect Maui's dolphins, fisheries regulations are in place that ban set netting within seven nautical miles of the coast from Maunganui Bluff (north of Dargaville) to Pariokariwa Point (north of New Plymouth) (Figure 5.16). Some limited commercial netting can still continue outside four nautical miles. A threat management plan is being prepared setting out strategies to reduce those threats to Maui's dolphins which are human-induced. The plan introduces proposals to manage threats including fishing related options, a marine mammal sanctuary, research and monitoring. The Taranaki region is at the southern end of their distribution and although there are not large numbers of dolphins seen here, small numbers of deaths can have drastic implications for the survival of the population. A West Coast North Island Marine Mammal Sanctuary has recently been gazetted for the area from Manganui Bluff (north of Kaipara Harbour) to Ōākura Beach out to 12 nautical miles. This contains restrictions on the use of acoustic devices and mining (other than for petroleum) within two nautical miles.

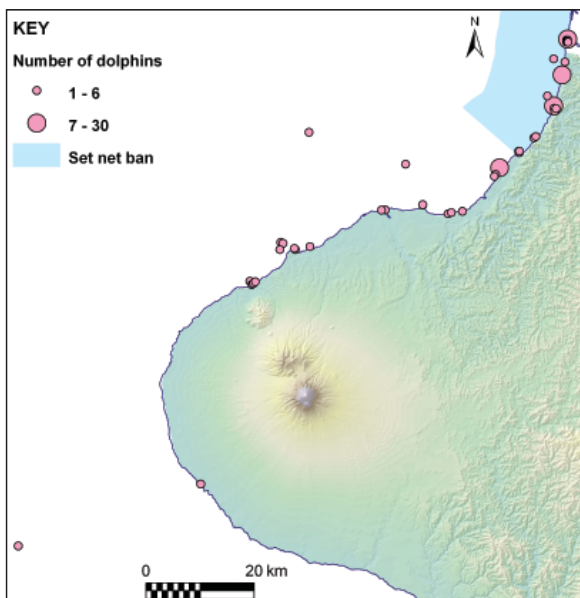


Figure 5.16: Map of Maui's dolphin sightings and set net ban.



Taranaki Regional Council

The invasive *Undaria pinnatifida*.

(G) EXOTIC PEST MANAGEMENT

The discharge of ship ballast water and ship hull cleaning have been identified as the two significant potential causes of the introduction of exotic marine organisms into New Zealand waters. Taranaki is vulnerable to the introduction of organisms from overseas through the port. The majority of port trade involves the movement of international ships. Ships are required to discharge ballast water outside of the coastal marine area (12 nautical miles) prior to entering Port Taranaki.

Undaria pinnatifida, well known to miso soup lovers everywhere as 'wakame', has been found in Port Taranaki, and is now identified as an eradication pest plant in the *Pest Management Strategy for Taranaki: Plants*. The plants have been found concentrated mainly around the public boat ramp and jetty areas in the eastern corner of the port. *Undaria* is an invasive seaweed species that can reach an overall length of 1-3 metres. The plant matures in 40-60 days and produces millions of spores. *Undaria* spreads by fouling ship hulls and can rapidly colonise many different substrate, ranging from rocky reefs, mobile cobble habitats, soft sediments, other seaweeds, ropes, buoys, wharf piles and on ship hulls.

Given that *Undaria* is very fast growing, no New Zealand native seaweeds can compete with it, giving *Undaria* a free reign to invade gaps in the substrate, grow on other organisms and change the natural character of the area. The seaweed can form dense forests resulting in competition for light and space which may lead to the exclusion or displacement of native plant and animal species.

An initial trial was undertaken where *Undaria* was removed and jetty piles were cleared and wrapped with black plastic in order to prevent anything growing back on them. The trial was partially successful, but did not eradicate *Undaria* completely. A programme of on-going monitoring and removal has been implemented and is undertaken by the Taranaki Regional Council, the Department of Conservation and Port Taranaki Ltd.



Pihama, South Taranaki.



Midhirst School students learn about the coastal environment.

(H) INFORMATION GATHERING AND MONITORING

Since the *2003 State of the Environment Report*, a working party consisting of the regional and district councils and Department of Conservation, completed an inventory of coastal areas of local or regional significance in the Taranaki region. This inventory, primarily prepared to look at public access, also collated existing information on ecological values of a number of sites⁴⁴.

In 2004, in a joint project between the Taranaki Regional Council and the Department of Conservation, an inventory was developed of all reports, scientific research and information relating to the Taranaki coastline⁴⁵. All stakeholders and consultants who work or have worked within the coastal area were contacted for a list of all research they had either commissioned or conducted. 275 reports were recorded onto a database which is searchable via the Council's website. This showed that a large amount of information exists on the Taranaki marine environment that was not previously well known, with some research dating back to the early 1900s. Information was greatest about intertidal ecological monitoring, beaches, erosion, sea floor life, sediment, water quality, the petrochemical industry and ocean outfalls. A gap analysis of the information gathered revealed that there was little information on various aspects of biology – fish tagging, seabird nesting, crayfish, shellfish – and little on aspects of marine weather, marine historical areas, and beyond the 12 nautical mile zone.

In 2006, a community-based project team was formed to research more about the marine environment along the South Taranaki coast. This was facilitated by the Department of Conservation and included representatives from Taranaki Regional Council, Ngā Rauru, Ngāti Ruanui, the Ministry of Fisheries and a number of recreational boating and diving clubs. The team conducted research into what was recorded about the coast and what local people knew about their coastal and marine area⁴⁶.

The Taranaki Regional Council carries out state of the environment monitoring in estuaries and at rocky shore sites recording the diversity

of invertebrates. The Department of Conservation carries out monitoring in the marine reserves and marine protected area. Results from these programmes are described earlier in this chapter.

The Ministry of Fisheries gathers information from commercial fishers, as well as carrying out research into recreational fishing.

(I) COMPLIANCE AND LAW ENFORCEMENT

The Ministry of Fisheries enforces the regulations around the taking of fish, shell fish and aquatic life. The Ministry of Fisheries and the Department of Conservation undertake joint compliance work in the Sugar Loaf Islands (Ngā Motu) Marine Protected Area. This work is assisted by members of the public who keep an eye out for those fishing in the wrong areas.

Although there have been reports of illegal fishers in the Parinihihi Marine Reserve, the level of compliance has generally been good. Local fishers have been active in discouraging poachers from the reserve and as yet there have not been any prosecutions.

(J) INFORMATION, ADVICE AND EDUCATION

As part of its environmental education programme, the Council works with teachers and school children to raise awareness of rocky shore issues and encourage wise and sustainable use of the coast. The Council provides a unit of work and a teaching resource kit to teachers that link water studies to the New Zealand curriculum. The Council also offers support and equipment for rocky shore field trips where children participate in monitoring or beach clean-up or monitoring activities.

Seaweek, held annually in March, provides a focus for raising awareness in the community on coastal and marine biodiversity issues. The week is facilitated by the Department of Conservation and includes the New Plymouth and South Taranaki district councils, the Ngā Motu Marine Reserve Society, Forest and Bird and corporate sponsors such as McDonald's and local book stores. Public talks, walks, beach clean-ups, competitions and events are held to raise public awareness.

⁴⁴ Taranaki Regional Council, 2004. *Inventory of Coastal Areas of Local or Regional Significance in Taranaki*.

⁴⁵ Taranaki Regional Council, 2004. *Coastal Information Inventory for the Taranaki Coast*.

⁴⁶ Rush, 2006. *Netting Coastal Knowledge: South Taranaki-Whanganui Marine Area*. Published by the Department of Conservation, Wanganui Conservancy.



Students getting a hands-on experience of the rocky shore.

The Ministry of Fisheries undertakes a number of activities aimed at increasing and improving fishers' knowledge about fishing legislation and the consequences that may arise from breaching the regulations. Improving fishers' knowledge and understanding of these regulations will help maximise voluntary compliance across the sectors (commercial, recreational and customary).

(K) COMMUNITY INVOLVEMENT

The Ngā Motu Marine Reserve Society Incorporated is a diverse community group representing scientific, educational and recreational

interests. Their objectives are to establish a network of marine reserves in the Taranaki region, to ensure the marine life and other natural resources within the region are protected, to encourage the scientific study of marine life on the Taranaki coast and to foster community awareness of the coastal environment by education. The Society was the applicant for the Tapuae Marine Reserve established in 2008.

Forest and Bird advocates the importance of looking after little blue penguins along the coast by promoting the importance of keeping dogs under control and building penguin boxes.

Community coast care groups work with district councils on sand dune restoration programmes.

(L) SUMMARY OF PROGRESS

A summary of progress in implementing regional objectives and policies on coastal and marine biodiversity is set out in Table 5.12 below.

5.3.3 HOW DO WE COMPARE?

The Ministry for the Environment has recently reported on the proportion of mainland coastal biogeographic regions protected through marine reserves⁴⁷. This highlights that no mainland region has more than 0.4% of its total area in marine reserve. The Western North Island region and the North Cook Strait regions have just over 0.1% and just over 0.15% of their areas in marine reserve respectively.

Table 5.12: Summary of progress with objectives and policies on coastal and marine biodiversity.

Issue	What do we want to achieve	How is it measured	What progress are we making
Reducing threats to marine habitats, flora and fauna.	<ul style="list-style-type: none"> An increase in the number and areal extent of ecosystems, habitats and areas with regionally significant indigenous biodiversity values in the Taranaki region, and which are formally protected. Maintenance and enhancement of the ecological condition of ecosystems, habitats and areas with regionally significant indigenous biodiversity values. 	<ul style="list-style-type: none"> Extent of the territorial sea (ha) protected through marine reserves or marine protected areas. Levels of consented activities in areas of significant conservation values. Biosecurity monitoring and surveillance undertaken. 	<ul style="list-style-type: none"> The Sugar Loaf Islands (Ngā Motu) Marine Park was established in 1983 and the protection status of the area was upgraded in 1991 to SLIMPA. Parininihi Marine Reserve came into effect October 2006, followed by the Tapuae Marine Reserve in 2008. Levels of compliance in the reserves have been good and they are generally self-policing. As yet there have not been any prosecutions. 27 coastal permits have been granted, reviewed or varied in coastal area A (areas of outstanding coastal value) since the <i>Regional Coastal Plan</i> was made operative. Port surveillance programme and <i>Undaria</i> control programme.

47 Ministry for the Environment, 2007. *Environment NZ, 2007.*