# State of the Environment Report Card

# Coast 1

**This report card is one in a series produced to explain the current state of Northland's environment. The cards are based on the 2007 State of the Environment Report and keep you up to date on the work being done to improve our environment.**

## What is the current state of Northland's coast?

Northland is a narrow peninsula, 80km across at its widest and surrounded by the Tasman Sea and Pacific Ocean. Our coastline features 15 harbours, numerous smaller estuaries and long stretches of rocky and sandy open coast.

Tourism centres around our beautiful coastline and internationally renowned marine environment. Balancing the impact of human activity and natural processes – made worse by increasing land-use activities – is a key role of the Northland Regional Council.

The state of our coast is assessed in three ways – coastal management, coastal hazards, and coastal water quality.

### Coastal management

Northland's coastal environments have been changed by land-use activity – most coastal forest has been cleared; no completely natural dune system remains and coastal salt marsh wetlands now cover less than 5% of their original area.

Coastal protection work – seawall protection – has grown on the coast, where early development was in high erosion areas. This one at Rangiputa Beach on the Karikari Peninsula is causing serious erosion where the wall ends.

Most barrier spits – fingers of land built up through tidal movement – have been fully developed, and demand for coastal property means increased pressure on other coastal systems in Northland. The greatest coastal subdivision pressure is around Whangarei Harbour, Mangawhai, Kerikeri, Eastern Bay of Islands, Ngunguru/Pataua and the Otamatea arm of the Kaipara Harbour.

Coastal structures – jetties and moorings – have also increased in number, with 98% of mooring consents and 85% of permits for coastal activities being located on Northland's east coast.

Habitat loss and modification for land-use activities has had a major negative impact on Northland's coastal environment. For example, studies show increased sediment and nutrient runoff from land-use practices may have contributed to the expansion of mangroves in estuarine areas, which in turn has altered the natural character of our estuaries. Once-sandy estuarine beaches are slowly disappearing under layers of sediment and mangrove "swamps".

Coastal structures put increasing pressure on the marine environment.

## What are the pressures on Northland's coastal environment?

Building development at Coopers Beach on the east coast of the Far North.

**Coastal development** – the scale of coastal development, and the infrastructure and coastal protection works needed to support this development, threatens landscape values and causes habitat loss.

**Coastal land-use** – changes to, and the loss of natural coastal systems – wetlands, estuaries and sand dunes – due to forestry, farming, flood control schemes and drainage, vehicle usage and vegetation clearance.

**Coastal waters** – increased coastal structures – jetties, boat ramps, moorings and marinas – change coastal landscape values. Recreational and commercial boats, energy generation, aquaculture and commercial fishing also put pressure on the marine environment.

**Climate change** – predicted impact of increased high-intensity storm events and coastal flooding on the built and natural coastal environment.

**Pollution** – contamination from environmental incidents and non-consented discharges – sediment and nutrients, bacteria and viruses, oil, metals and biocides.

**Pest species** – introduced species, such as Spartina and Asian date mussel, replace indigenous flora and fauna, and increase sedimentation.

## How is water quality monitored?

### Recreational bathing water quality monitoring

The Council tests water at up to 57 sites during the summer months for illness-causing bacteria. Samples are ranked:

- Green (safe to swim);
- Amber (alert/caution); or
- Red (action/unsafe to swim).

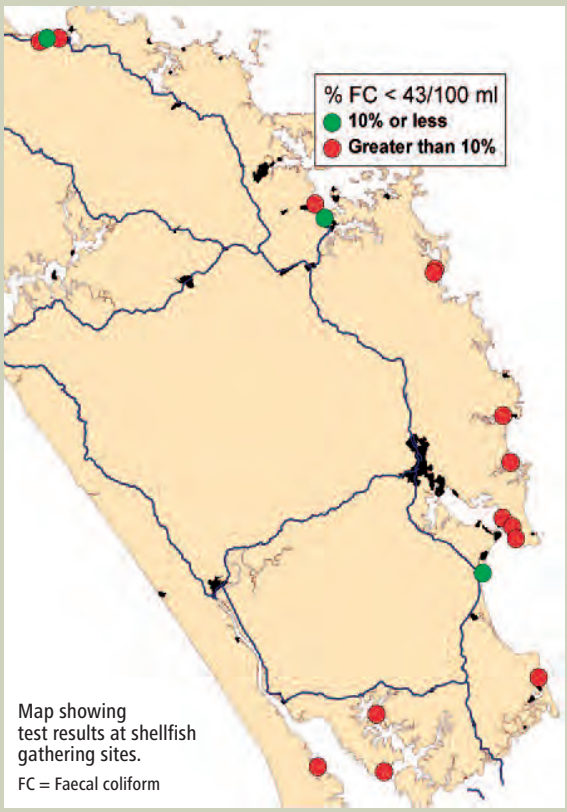
Over a period of five years, more than 2500 samples were collected. Of these, 93% were 'safe' for swimming, 3% were ranked 'caution' and 4% were 'unsafe'. Water quality at virtually all semi-enclosed sites or sites next to major river outflows is adversely affected for several days after heavy rainfall.

### Water quality for shellfish gathering

Sampling of water quality for recreational shellfish gathering is done at up to 17 popular sites in Northland.

Data collected over four summers (2003-2007) shows that, of the 17 sites sampled, only three were compliant with water quality guidelines – Cable Bay, Ruakaka and Paihia. Samples taken from the remaining 14 sites did not comply with the guidelines for recreational shellfish gathering during this time.

The results are heavily influenced by the semi-enclosed nature of most sites and by the influence of rainfall causing run-off into these areas.




Map showing test results at shellfish gathering sites.
FC = Faecal coliform

### Coastal hazards

Coastal hazards are natural physical processes with the potential to cause loss of life or property, including flooding, erosion and sand drift.

Northland's beaches fit into three categories: eroding (retreating landward), equilibrium (stable) or accreting (extending seaward). There are 24 beaches monitored on a regular basis. West coast beaches show a long-term trend for equilibrium or accretion while our east coast beaches are more diverse. Highly modified beaches are generally eroding as modification reduces the ability of the natural systems to retain sand.

Beach Road, Onerahi in Whangarei during the July 2007 floods – projected increases in water levels will affect coastal settlements.

A number of coastal communities are already exposed to coastal flooding. The projected sea-level rise due to climate change to the year 2100 is likely to substantially increase the extent of areas at risk from this hazard.

Records show that New Zealand has been affected by more than 40 tsunami in the last 150 years, and a general tsunami hazard-risk model shows Northland has a moderate tsunami risk. There is a moderate risk for most of the north-west and east coast, high hazard and moderate risk for the north, and low hazard and risk for the south-west. Coastal hazard zones identify areas of coast that may be subject to coastal hazards.

In Northland, approximately 1092 properties – of which 638 are dwellings – are located within or partially within identified coastal hazard zones, with a total capital value of $453 million.

### Coastal water quality

Coastal water quality is mainly affected by contaminants from the land, which enter the water via rainfall run-off or via rivers and streams. On the open coast, the effects of the tide and low freshwater input mean the water quality is generally high.

All our rivers discharge into harbours creating high volumes of freshwater in areas of limited mixing. In these areas, water can be of poor quality, particularly after heavy rainfall.

Stormwater drains deliver potential contaminants to the sea.

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# Coast 2

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## What is the response to pressures on Northland's water quality?

### Regulation

Two plans regulate Northland's coastal environment. The Regional Policy Statement (RPS) recognises and looks to the preservation of the natural character of the coast and maintenance of coastal water quality at acceptable levels. It also aims to avoid and limit the impact of natural hazards on people who live on the coast. For more information: **www.nrc.govt.nz/rps**

The Regional Coastal Plan (RCP) contains the rules that govern the management of the Coastal Marine Area (CMA) in Northland. It provides a framework for allocating space to, and controlling the effects of, activities in this area. The coast is divided into "Management Areas" which provide for certain activities in certain areas to avoid conflict between uses. For more information: **www.nrc.govt.nz/rcp**

Several changes to this plan are underway, including changes that will:

- Restrict moorings outside identified mooring areas;
- Assist mangrove management in key areas;
- Identify and formally recognise areas of important conservation value within Whangarei Harbour;
- Create Aquaculture Management Areas; and
- Prohibit all stock access to the CMA from 1 July 2009.

### Monitoring

A beach-profile monitoring programme is carried out at selected coastal sites to assess changes in foreshore location and beach profile. This data helps the Council assess the suitability and effect of developments on coastal systems.

Northland Regional Council estuarine monitoring officers taking shellfish samples.

Coastal Hazard Assessments are conducted to determine Coastal Hazard Zones (CHZ) in Northland. The Council is also assessing tsunami hazard for the region, which may lead to the identification of tsunami hazard zones. CHZ are used to avoid or reduce inappropriate development in areas subject to coastal hazards.

The Council also implements the National Estuarine Monitoring Protocol (EMP), which is a programme to assess estuarine habitat health and changes over time. This data allows informed decisions on the management of estuarine areas and activities that may impact on these systems.

## Harbour studies

Water quality in Whangarei Harbour is regularly monitored at 20 sites to identify trends in water quality over time.

Data shows water quality is poor in the upper harbour near the Town Basin and improves down the harbour. This trend is most likely caused by the greater number of discharges, more concentrated boating activity and more freshwater, along with lower dilution rates in the upper harbour compared to the lower harbour area.

An oil spill into the Town Basin, Whangarei. Northland Regional Council staff stop the flow and mop up.

Selected Far North harbours are also tested. West coast harbours have the highest levels of suspended sediment, most likely caused by land-use activity and steep hills within these catchments. All harbours have elevated levels of nutrients, which reflects the level of development and land-use activities – for example, pastoral farming and forestry.

Sediment run-off caused by one dirt track.



NORTHLAND REGIONAL COUNCIL

## Vehicles on Northland beaches

Public concern about the misuse of vehicles in the coastal environment is behind the Council's 'Vehicles on beaches' education campaign.


Signs display safe beach driving messages at popular accessways on Northland's beaches.

The multi-agency campaign is co-ordinated between the Council, the Department of Conservation, NZ Police and Northland's District Councils.


### Investigation

Aquaculture is an important and growing industry in Northland. The multi-million dollar industry has the potential to be severely affected by run-off from pastoral farming activities, fine sediment discharge and associated microbiological and nutrient input.

The Council has a Catchment Management Officer to look at land-use in catchments that feed into oyster growing areas.

The aim of the work is to identify potential sources of contamination and to work with landowners, farmers and coastal users to avoid or reduce environmental impacts.

### Education

The Council plays a major role in educating residents and visitors about coastal issues and management. Environmental education officers work with schools and other groups on a range of environmental issues including how to take care of Northland's coastal environment. The annual Youth Summit has featured a marine theme, focusing 20 schools in the region on marine issues.

The Council has an Environment Fund that is used to assist with funding projects designed to restore and enhance the natural environment, including CoastCare initiatives, the fencing of coastal margins, biodiversity enhancement and other coastal projects.

### You can help to protect Northland's coastal environment

- Establish a CoastCare Group. For more information, contact the CoastCare co-ordinator on 0800 002 004 or go to **www.nrc.govt.nz/coastcare**;
- Keep vehicles and motorbikes off the dunes. Do not ride your horse through the dunes, sand-board down the dunes, or leave litter on the beach. Check with your District Council which beaches can be used for exercising your dog. Keep dogs on a lead and pick up their waste;
- Contact the relevant District Council or the Regional Council before purchasing or developing on a coastal property to find out if you're in a coastal hazard zone;
- Be prepared for coastal hazards, especially if you live near the coast;
- Report any coastal water pollution to the Northland Regional Council 24/7 Environmental Hotline – 0800 504 639;
- Keep stormwater drains for the rain. Do not tip any chemicals, detergents, paints, oils or fuel down stormwater drains;
- Recreational and commercial boat users should comply with the Marine Pollution Regulations at all times. For more information, go to **www.nrc.govt.nz/marinepollution**; and
- If you are a farmer or landowner, restrict stock access to waterways or the Coastal Marine Area. For more information, go to **www.nrc.govt.nz/stockexclusion.**