state of the environment 2002

NORTHLAND REGIONAL COUNCIL

Highlights from the Northland State of the Environment Report 2002

Introduction

The Northland environment is vitally important as its quality governs the way we live and function every day. What is the current state of Northland's environment? Just how clean are our beaches and rivers for swimming? How clean is our air? The full report, which is on the Northland Regional Council's website www.nrc.govt.nz, aims to answer some of those questions. This booklet provides highlights from the major findings of the report.

This is the Northland Regional Council's first State of the Environment (SOE) report. It aims to inform both the Regional Council and the public on the state of Northland's environment, the human pressures on it and the Council's responses to environmental issues.

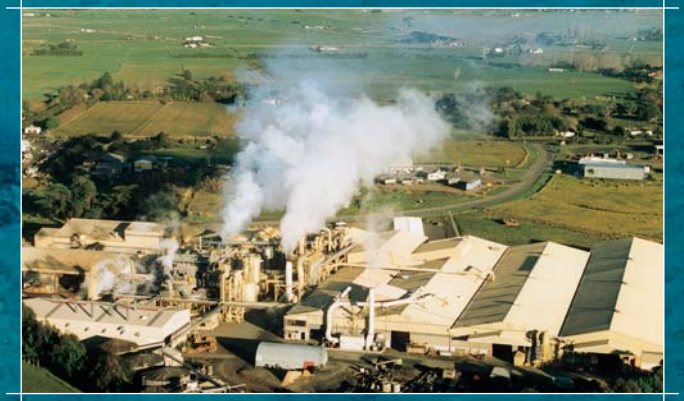
The Northland Regional Council has gathered all its monitoring results, studies and information to give a snapshot of the state of our environment today. The SOE report is the result of several years of work by Northland Regional Council staff.

The SOE report brings together information gathered by the Northland Regional Council's various monitoring programmes, including State of the Environment monitoring and compliance monitoring required through the resource consent process. Information has also been included from organisations such as the Department of Conservation (DoC) and the National Institute of Water and Atmospheric Research (NIWA). This Report provides a benchmark against which future changes can be measured.

The content of the State of the Environment report is linked to the Regional Policy Statement for Northland. The Statement provides an overview of and direction for the environmental management of the region. To achieve this, it contains objectives, policies, methods and anticipated environmental outcomes. This report also aims to provide information for measuring the effectiveness of our policies.

It does not aim to provide solutions for specific resource management problems – rather it provides information to help with environmental decision making.

This snapshot identifies issues covering air, freshwater, the coast and land.

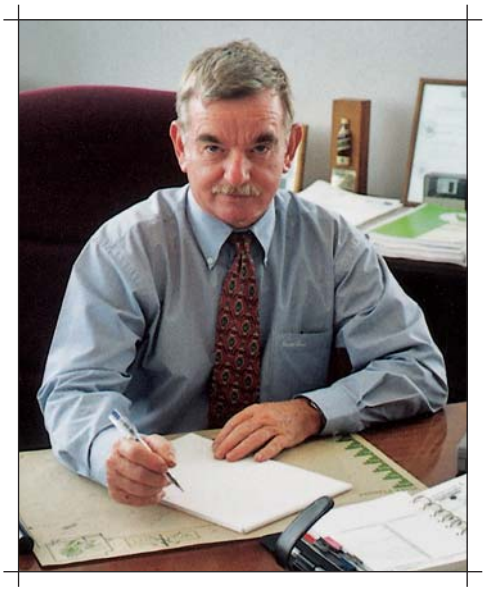


Chairman's Foreword

Welcome to the Northland Regional Council's first State of the Environment Report. This Report provides baseline information on the health of our region's natural and physical resources. It allows us to review what is happening in our environment, determine why it is happening and report on what we are doing about it. This first report is an 'accountability card' – an environmental balance sheet - against which future changes can be measured.

The Regional Council has taken an 'objective approach' in putting this report together and the findings demonstrate that real progress is being made in many areas. Notwithstanding, there are also some major issues that the region faces, particularly:

- The on-going rapid development of our coastal environs as holiday areas and the resultant sewage-disposal problems;
- The poor standard of water quality in some rural areas;
- Risk from erosion in many of the region's coastal settlements;
- Threats to the region's biodiversity from animal pests, weeds and changing land use patterns.



The report has also highlighted the areas where the Council lacks information:

- Sustainable land use management – are our existing practices sustainable? How can we intensify land use without causing environmental degradation?
- The management of our 'at risk' groundwater aquifers and the prevention of contamination - by seawater and land-use activities.

The Regional Council recognises that the region needs timely and accurate information about the environment and it has put in place programmes to monitor the state of the environment and to detect changes. The Council's monitoring programmes will give information on effectiveness of the policies of the Council's various planning documents and will provide vital direction as the Council moves to consider the implementation of more 'effects based' environmental management regimes.

Positive change in Northland's environment will not just happen on its own - we all need to be aware of the issues and there is a challenge for all individual Northlanders to take ownership and responsibility for our environment. A key element to progress is a self recognition of the need for environmental enhancement.

The Northland Regional Council will continue to work with a variety of agencies, including government departments, the three district councils, business, iwi and local communities to effect positive change in the environment.

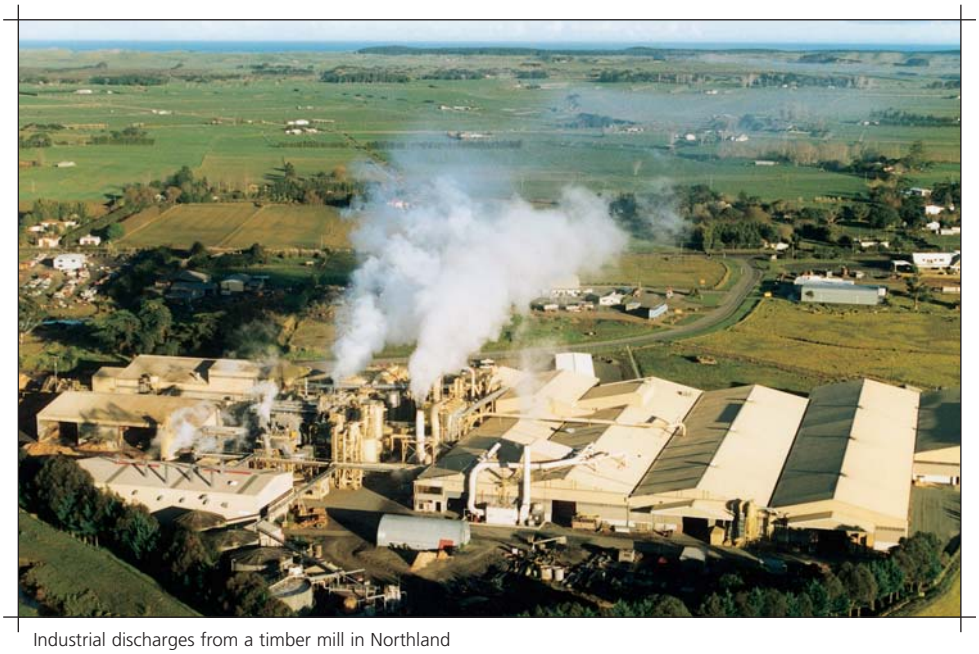
Northland's on-going prosperity will have a strong reliance on the region's unique environment. Future State of the Environment Reports will map our progress towards the achievement of a 'sustainable development' framework for Northland.

Mark Farnsworth
Chairman

what we've found in our Air

Air Quality

Clean air should not be taken for granted. While Northland generally has good air quality because of prevailing winds that quickly disperse pollutants, there is room for improvement. Air quality incidents and issues dominate the complaints received by the Northland Regional Council. There is an increasing intolerance of contamination of the air (including offensive odour, smoke and agrichemicals) from the numbers of complaints that are received. A small number of industries are responsible for the majority of trade discharges.



Industrial discharges from a timber mill in Northland

State of Environment

- Northland's air quality is dominated by the region's exposure to the prevailing south-westerly winds, which quickly disperse air pollutants.
- PM_{10} (particulate matter such as in smoke and vehicle exhaust) concentrations fluctuate on a day-to-day basis. Weather, particularly wind speed, has a significant effect on PM_{10} concentrations. Monitoring in Whangarei has shown that PM_{10} concentrations are either good or acceptable 74% of the time. At times, PM_{10} concentrations approach or exceed recommended guidelines. These excesses are not great, and are likely to occur in the early hours of the morning under cool, winter inversion conditions.
- Carbon monoxide (CO) investigations in Whangarei have shown that, at times, elevated concentrations of CO are present in the central city area. Earlier surveys revealed concentrations above recommended guideline concentrations. However, more recent monitoring showed no excesses of the guidelines. This is likely to be more related to sampling times rather than a reduction in CO concentrations.
- Monitoring of sulphur dioxide (SO_2) in the Marsden Point industrial area has revealed relatively low concentrations. However, there are occasional results that approach the boundaries set in the National Ambient Air Quality Guidelines.

What is the Council doing?

- Resource consents are required by industries that discharge contaminants to the air.
- The Air Quality Plan for Northland contains rules that permit, control or prohibit activities which cause discharges of pollutants to the air. This plan is almost operative.
- Additional State of the Environment monitoring programmes for air quality are planned.
- The NRC supports industrial codes of practice such as those published by the Agrichemical Education Trust.

What can you do?

- The rules that exist for air pollution do not allow discharges of large amounts of smoke. If you see a smoky chimney puffing out large amounts of blue hazy smoke, this should be reported to the Northland Regional Council. This should not be confused with white steam, which is allowed to be discharged.
- Get your chimney checked and cleaned regularly. Do not burn wet wood, green wood, household rubbish, coal, painted wood, cardboard or driftwood. Many of these give off a lot of smoke. Painted wood can give off dangerous chemicals and driftwood contains sea salts that can damage the wood burner. Consider other forms of heating that will reduce pollution in the air.
- Reduce car use by pooling with neighbours or friends, and keep the car well maintained. Consider biking or walking where possible.
- Be considerate to your neighbours by minimising smoke nuisances and preventing agrichemical spraydrift.

what we've found in our Water

Surface Water Quality

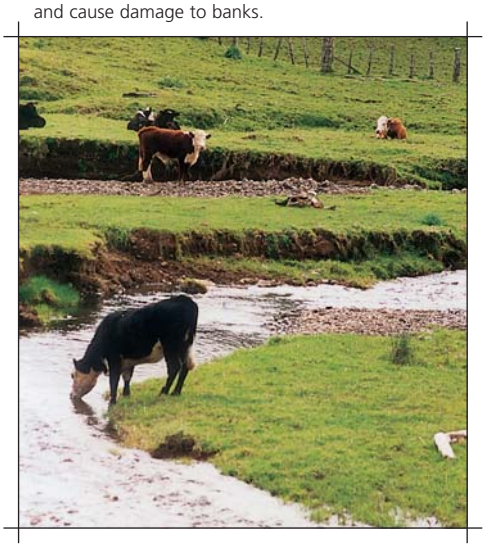
Water quality in surface waters and lakes is a major issue in Northland. Water quality varies between pristine in upper native forest catchments and highly impacted in modified lowland catchments. Many decades of forest clearance, wetland drainage and pastoral farming have substantially degraded much of the region's rural lowland water quality. Many lowland waterways in the region are in a poor state, with most being unsuitable for swimming.

Improvements in surface water quality are being made through better farm dairy effluent treatment systems, wastewater management and sewage treatment systems. However, there is still room for improvement. When the Regional Water and Soil Plan was released in 1994, farmers were given 10 years to improve their farm dairy effluent systems. Since then, Council staff have graded systems and been working with farmers on improvements. But as the 2004 target date looms closer, the requirements for stricter conditions agreed with the wider community are steadily coming into force.

Pressures

- There are more than 1000 consents to discharge to surface water or land in Northland that have the potential to result in the contamination of surface water.
- Farm dairy effluent treatment systems are by far the most numerous point source discharges to surface waters and land in Northland. Presently, 51% of systems discharge to land – the remaining 49% continue to discharge to surface water.
- Over the last few decades, through industry amalgamations and improvements in wastewater treatment, pressures on Northland's waterways from industrial discharges have decreased significantly.
- During the last decade municipal sewage treatment systems have been progressively upgraded in an effort to reduce the environmental effects of these discharges.
- Approximately 45% of Northland's population rely on septic tanks with ground soakage fields to dispose of wastewater. Potential problems exist where these are poorly maintained or where the density of septic tanks is high.
- Diffuse source runoff represents the greatest source of contaminants entering waterways. This includes run-off from pastures and races as a result of stock dung, urine and fertiliser application, and direct stock access to waterways.
- The Northland Regional Council is notified about approximately 180 incidents affecting surface water each year.

Stock drinking from a stream can foul water and cause damage to banks.



State of the Environment

- Water quality in the Northland region varies greatly from upper native forest catchments, which are often pristine, to highly impacted modified lowland catchments.
- Most lowland rivers and streams are unsuitable for swimming. Higher levels of disease-causing organisms are found in catchments with high-intensity land use.
- Water quality for aquatic ecosystems is highly variable. Guidelines are regularly not met in developed catchments, including the Wairua, Whakapara, Mangakahia, Awanui and Waitangi Rivers.
- Specific studies have shown that waterways in both the Ruawai and Te Kopuru areas are degraded as a result of intensive agricultural activity. In the Ruawai area, waterways are severely degraded.
- Most rivers are safe most of the time for stock to drink. However, faecal coliform levels increase during and after rainfall due to runoff. Some sites do exceed the stock water guidelines and could be considered a risk to stock.
- Ecosystem health in native forested catchments is excellent. However at all other sites habitat quality is moderately poor to poor. Lowland streams, especially in agricultural and urban areas, have poor ecosystem health.
- Of the 35 or so native species of freshwater fish found in New Zealand, 20 are known to inhabit the Northland region. Exotic and pest fish are widespread, with 10 known species found in Northland.

Farm dairy effluent can be treated and applied to land as fertiliser.

What is the Council doing?

- The Regional Water and Soil Plan for Northland includes specific water quality guidelines for different purposes.
- Resource consents are required for point source discharges to water and land.
- Consent compliance monitoring programmes assess the effect of the discharges on the environment.
- State of the Environment monitoring programmes have been implemented to assess the state of river water quality and ecology and how that changes with time.
- Northland Regional Council supports several streamcare groups that are involved in riparian planting, weeding and removing rubbish from waterways.

What can you do?

- Improve farm dairy effluent treatment systems.
- Form a streamcare group to remove rubbish and plant stream or lake sides.
- Keep stock out of water bodies.
- Help stop the spread of aquatic weeds and pest fish. They cause a lot of damage.

Water Quantity and Flows

Water quantity refers to the natural flows and levels of groundwater, springs, streams, rivers, lakes and wetlands.

Northland's landforms and ecology have adapted to the natural water quantities available. However, human activity has had a major effect on water quantities – about 95 percent of Northland's natural wetlands have been lost in the development of artificial drainage. Development of roads, stopbanks and drains can easily disrupt natural drainage patterns. Future water demand will require the use of alternative sources, particularly storage of water in dams or reservoirs.

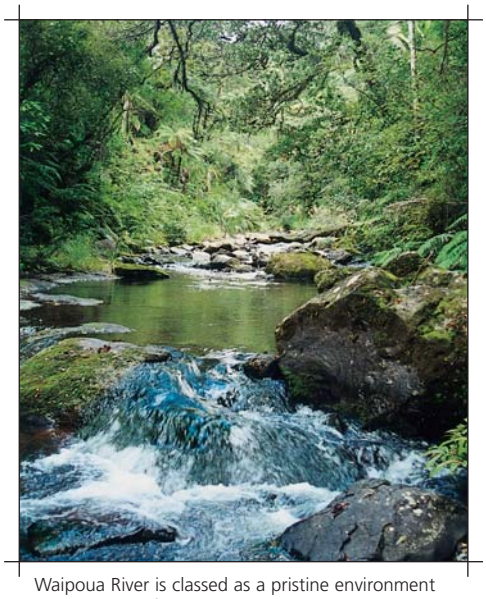
Droughts are a regular occurrence in Northland, about every three or four years.

Pressures

- Northland's water resources are under increasing pressure to meet demands from a variety of consumers – including the agriculture, horticulture, water supply and industry sectors.
- Currently, there are 416 consents allocating some 560,000 cubic metres per day of water from streams, rivers and dams in Northland.
- The Wairua, Whangarei Harbour, Waitangi and Kerikeri catchments are heavily utilised for their water resources.

State of the Environment

- Annual rainfall ranges from 900mm in low-lying coastal areas to over 2900mm in higher altitudes.
- Flows vary greatly between catchments, which can be largely attributed to rainfall patterns, catchment size and geology.



Waipoua River is classed as a pristine environment and protected from use in irrigation schemes.

In Northland, catchment geology greatly influences low flows during drought conditions.

- Northland's climate is such that it will experience a regional drought, on average, once every three years on the east coast and inland, and once every four years on the west coast and at high altitudes.

What is the Council doing?

- The Regional Water and Soil Plan contains rules that set standards for minimum water quality or minimum levels of water flows.
- The main policy on drought response is an emphasis on the data collection network, publicity and early warning of potential drought problems.
- Minimum flows have been determined to protect the many functions of water.
- The Northland Regional Council operates a hydrometric network consisting of 37 sites (24 river level, 4 tidal, 9 rainfall). The network is complemented by 55 daily rainfall reader sites, and 13 lake level monitoring sites.

what we've found in our Water

What can you do?

- Check to see whether a resource consent is required before extracting water from rivers, streams or lakes.

Conserve water by:

- Adopting a tap in your household and make sure it is never left dripping. Dripping taps waste a lot of water.
- Turning off the tap while brushing your teeth.
- Quickly repair dripping taps or leaking pipes.
- Consider low-flush toilet options to save water.
- Wait until your dishwasher is full before using it.
- Watering the garden at cooler times of the day to reduce evaporation.
- Collecting rainwater from the roof to water the garden.

A recently cleared drainage channel in Northland.

Groundwater

Clean water is one of Northland's most scarce resources. Despite our high rainfall compared with other parts of the country, the small area of land means most rainfall drains away to the rivers and the sea. Northland's groundwater resources are under increasing pressure with changes in land use, particularly as more land is used for horticulture. There are large increases in population during summer when tourists stay for their holidays, which puts increasing pressure on coastal sewerage systems.

Most of Northland's groundwater resources are relatively small in volume and vulnerable to overuse. Salt-water intrusion into coastal aquifers has also been a problem in some areas.

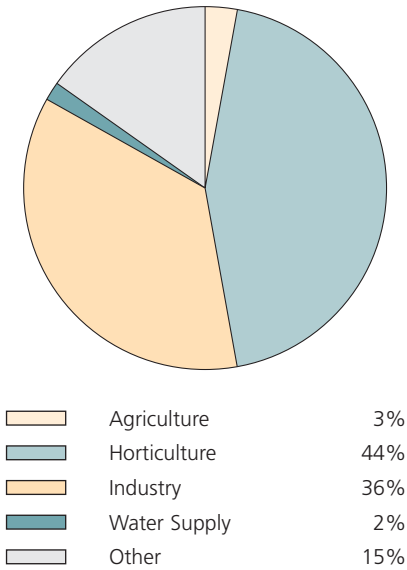
Pressures

- Changing land use practices from traditional farming to orcharding and market gardening, together with an increase in tourism, has resulted in increasing pressure on many of Northland's aquifers.
- The largest user of groundwater in Northland is agriculture, particularly horticultural irrigation.
- Changes in land use have the potential to alter the recharge rates of underlying aquifers.
- Northland's many coastal aquifers are at risk from saltwater intrusion and contamination from poorly maintained effluent disposal systems.

State of the Environment

- Northland's variable geology has a major influence on surface water flow regimes and degree of groundwater recharge.
- Groundwater quality at all sites monitored meets the 1995 Drinking Water Standards for the parameters measured.
- Pesticide surveys have shown concentrations well below the maximum acceptable value for drinking water in the aquifers sampled.

Groundwater Volume Allocated



What is the Council doing?

- The Regional Water and Soil Plan contains rules covering groundwater takes, use, diversions, and drilling activities that have the potential to affect groundwater resources.
- The State of the Environment groundwater monitoring programme gathers baseline information on the quantity and quality of different aquifers in Northland. The groundwater quality network is soon to be extended.
- A number of investigations of aquifers have been carried out as the result of specific issues arising in different areas.

What can you do?

- Keep sewerage systems well maintained.
- Bury dead stock rather than dumping in holes which feed into streams and aquifers.
- Keep bores sealed to prevent waste and contamination.

Lakes

Northland has a large number of shallow lakes. Most of these have been formed between stabilised sand dunes along the West Coast. The dune lakes are grouped on the Aupouri, Karikari and Pouto peninsulas. They vary in size, with the majority being between 5 and 35 hectares in area and generally less than 15 metres deep. Lake Taharoa of the Kai Iwi Group is one of the largest and deepest dune lakes in the country, covering an area of 237 hectares and being up to 37 metres deep.

Dune lake (Stick lake) at Pouto Peninsula. *DoC.*

Pressures

- Aquatic weeds are a major threat to Northland's lakes. Some species pose a significant threat to both the water quality and aquatic biodiversity by smothering native species. In some shallow lakes aquatic weed growth can be over the entire area of the lake.
- Lake water quality is affected by land use in the surrounding catchment. Unrestricted stock access to foreshore areas as well as pasture and groundwater inputs contribute to nutrient enrichment of lakes, promoting weed growth and algal blooms.

State of the Environment

- Kai Iwi Lakes have exceptionally high water quality, with high visual clarity and no obvious signs of eutrophication (a buildup in nutrients which leads to excessive plant growth and reduction in oxygen).
- Pouto dune lakes have shown some variations in water quality. Some of the lakes inspected showed signs of eutrophication.
- Populations of the endangered native dwarf inanga fish are present throughout the Pouto dune lake system, the only place they can be found in New Zealand.
- Variable levels of water quality have also been recorded in the Aupouri dune lakes. Surveys have shown that the lakes with the highest levels of faecal bacteria are where stock have access, and are the same lakes which show higher levels of algae and reduced water clarity.
- Lake Omapere has 'flipped' between algal and weed dominated states since 1985. Currently, the oxygen weed Egeria densa and a potentially toxic algal bloom continue to be a major problem.

Clearing boats and trailers of aquatic weed is important to prevent spread to other lakes.

What is the Council doing?

- The Regional Water and Soil Plan contains rules that prohibit the discharge of any sewage and animal effluent into the dune lakes as specified in the plan.
- Recently, 31 lakes in Northland were surveyed for aquatic plants. Aquatic plants were first surveyed in 1986 and by visiting the lakes again, NRC hopes to be able to compare changes in aquatic plant communities.
- The Council continues to monitor Lake Omapere for water quality and weed quantities.
- Education programmes emphasise the importance of clearing boats and trailers of aquatic weeds to prevent weed spread.

What can you do?

- Revegetate lake margins to improve water quality, provide habitat for birds and fish and reduce bank erosion.
- Fence off lake margins to prevent stock excreting directly in waterways and degrading water quality. Investigate ways of providing alternative water supplies.
- When hunting, fishing, tramping or boating:
- Ensure your boat and propeller are cleared of weeds after use on a lake.
- Use toilets provided, or dig a shallow pit at least 10 metres from the lake, river or stream.

what we've found on our Coast

Coastal Hazards

Northland has an extensive coastline of about 1700km, featuring many harbours, estuaries and bays. There are also many islands.

The coastline is rich in cultural and natural heritage features, and is an important source of food and minerals. Shellfish and fish stocks support many local communities as well as marine farming and fishing industries.

Modification of the coastline has substantially changed the natural vegetation and about one-third of the region's population lives in coastal settlements. More houses are being built in popular areas, putting pressure on the coastal environment. Ports, marinas and industrial developments have been established at Marsden Point, Portland, Whangarei and Opua. New Zealand's only oil refinery is at Marsden Point and a new deepwater port is also being built there.

Pressures

- Coastal subdivision with inappropriate setbacks and poor consideration of coastal processes has increased the risk or threat of coastal hazards.
- It is likely that future climate change may result in increased periods of storminess and sea-level rise, both increasing the threat of coastal hazards.

State of the Environment

- La Nina weather conditions have been dominant in the past few years. This has caused increased wave energy to the east coast of Northland, shifting large volumes of sand offshore.
- Northland's west coast beaches are considered to be accreting, moving large volumes of sand onshore and building healthy vegetated foredunes along its length.

Matapouri Bay presents many challenges in the management of coastal hazards.

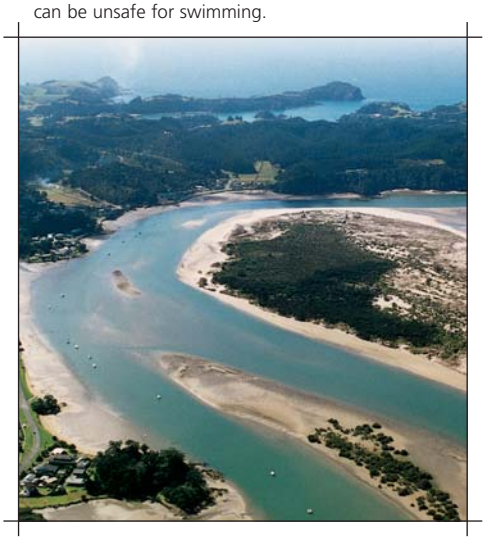
What is the Council doing?

- The Regional Coastal Plan for Northland includes methods to manage coastal hazards in Northland.
- Coastal Hazard reviews are continuing to assess coastal areas that are likely to be subject to coastal hazards.
- Consent monitoring includes measures to monitor the effects of sand extraction on the shoreline.

What can you do?

- Any modification of the coast requires a resource consent from the Northland Regional Council. Make sure permission is obtained before any work commences.

Ngunguru estuary – after rainfall many estuaries can be unsafe for swimming.



Coastal Water Quality

High standards of coastal water quality are important for activities such as swimming and water sports, marine farming, shellfish gathering, tourism and cultural uses. The quality of water on Northland's coastline is affected by contaminants in rivers, streams and runoff from the land. In some confined areas of the coast, water quality is also affected by septic tank contamination. Most of the time, coastal water quality is safe for bathing. However, at times – especially after rainfall – runoff makes swimming or collecting shellfish unsafe in some places.

Pressures

- Oil spills, sewage overflows, and dumped refuse are the most common incidents recorded by the Council each year affecting coastal water quality.
- At times of high rainfall, rivers and stormwater are the main sources of contaminants discharging to the coast, carrying runoff from urban and agricultural land.
- Untreated sewage discharges from boats have the potential to contaminate shellfish, marine farms and swimming waters.
- Boat maintenance facilities have been shown to be sources of heavy metals and toxic antifoulant residues in the Whangarei Harbour and Bay of Islands.

State of the Environment

- The water quality at the majority of Northland's bathing sites is reasonably good for bathing purposes.
- Water quality, at virtually all sites monitored, is reduced to a reasonably poor level for several days following heavy rainfall.

- Sites in semi-enclosed estuaries/harbours and in the vicinity of river mouths have the highest proportion of unsafe sites.
- Many sites in harbours and estuaries may be at times unsuitable for shellfish gathering.

What is the Council doing?

- The Regional Coastal Plan for Northland includes rules for the control of the extent and type of discharges to the coastal marine area.
- Resource consents and compliance monitoring programmes minimise the effects of discharges in the coastal marine area.
- State of the environment monitoring programmes include the study of harbour water quality and the suitability of water quality for bathing.
- The introduction of marine pollution regulations has made it illegal to discharge untreated sewage from boats into shallow coastal waters.

What can you do?

- Use rubbish disposal facilities rather than contaminating roadsides and estuaries and spoiling the coast.
- Install sewage holding tanks on boats or use onshore facilities on day trips.
- Take care when refuelling boats as many accidental spills add up to a major pollution source. Keep absorbent pads handy to mop up any fuel spills. Keep bilges clean.
- Let the Northland Regional Council know of any contamination sources on the coast – such as oil and fuel spills, dead animals and abandoned vehicles.
- Keep your septic tanks and soakage fields well maintained.

Natural Character of the Coast

One of the major natural features of Northland is its coastline. Settlements serve as a focus for water-based recreational activities and tourism. Farmland has been developed and subdivisions have resulted in a greater concentration of people living and holidaying along the coast. Extraction of sand is also a potential factor in changing the natural character of the coast, which is monitored. Mangroves and saltmarshes in estuaries serve as important nursery areas for fish species and breeding areas for birds.

Pressures

- Increasing coastal subdivision and use of the coastal area has resulted in increased pressures on coastal margins, particularly foredune environments (especially where there is unformed access).
- Extraction of sand has concentrated around the entrances to harbours and estuaries. Where extraction occurs close to the shore, there is potential for impact on the adjacent shoreline.
- Historically, development in coastal catchments, including land clearance and associated catchment development, has resulted in pressures on estuaries and harbours from sediment-laden waters.

State of the Environment

- The greatest loss of natural character has occurred along the east coast of the Northland region.
- Where coastal erosion has been a problem, the coastline has been armoured with hard materials, and this has significantly degraded the natural character of the coastline.

At Pouto Peninsula, sand extraction has recently been stopped because concerns for the sustainability of the operation.

- Coastal subdivision developments have degraded the natural character of many beaches in the region.
- Northland's west coast remains largely unmodified with only a few small settlements along its length of several hundred kilometres.

What is the Council doing?

- Regional and District Plans cover a range of issues related to coastal development and resource use.
- Studies are presently being undertaken to determine the sustainability of sand extraction in the Kaipara Harbour.
- Methods are being developed to assess the state of health within estuarine environments.
- A number of community coast care groups have been formed throughout the region.

What can you do?

- Do not take sand or shells from beaches. Leave them for everyone to enjoy.
- Check to see if a Resource consent is required from the Northland Regional Council before undertaking any modification of the coast.

what we've found on our Land

Indigenous Biodiversity

Northland supports a wide variety of natural areas, including indigenous forests and shrublands, wetlands, rivers, lakes, streams, dunelands, coastal and marine habitats. Each has its own diverse plant and animal species creating a unique biodiversity in Northland. Biodiversity is important for the maintenance of resilient ecosystems and provides for future economic, scientific and cultural development, and also provides less tangible aesthetic and spiritual benefits as well as a more interesting environment in which to live.

Pressures

- Since 1850, approximately 80% of Northland's indigenous vegetation has been converted to pasture, horticulture, pine plantations or urban areas.
- Remaining habitats are small and fragmented. This increases the pressures from surrounding land uses.
- Introduced pests and weeds are a major threat to Northland's indigenous biodiversity.

Endangered New Zealand Dotterel makes its home on Northland beaches. *DoC.*

Invasive forest weeds carpet the floor of a bush remnant at Maungatapere. *DoC.*

State of the Environment

- Today, approximately 22% of the Northland region remains in indigenous forest.
- Only 5% of the original coastal and freshwater wetlands remain.
- There are more than 100 threatened plant and animal species in the Northland region. This is greater than any other region in New Zealand.

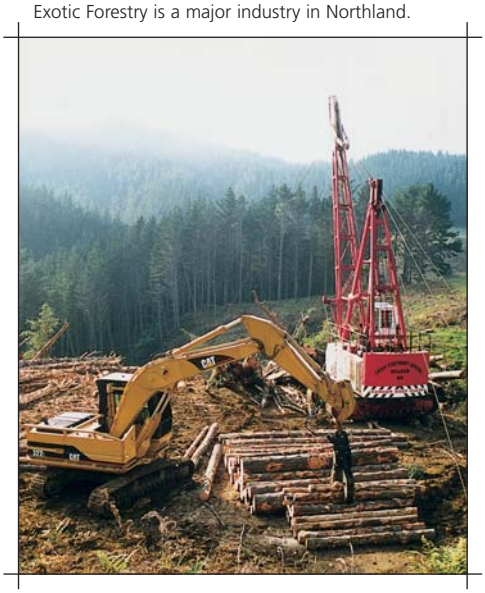
What is the Council doing?

- The major focus for Council pest management is possum control operations.
- Biological controls have successfully been released for a number of pest plants.
- About half of the remaining indigenous vegetation is protected by the Department of Conservation, or through other legal means such as covenants.
- Northland Regional Council has set up an environmental fund to help improve and protect Northland's natural environment, including its indigenous biodiversity.
- The Council is part of a regional forum, the Northland Biodiversity Enhancement Group, formed to co-ordinate efforts in promoting and enhancing biodiversity in Northland.

What can you do?

- Consider creating a covenanted area on your land. This will protect the land for the future, no matter who owns it. The QE II Trust and Whangarei District Council both administer covenants.
- Join or form a landcare group to address land management concerns in your area.
- Enhance biodiversity by planting native trees and restoring wetlands.
- Support the Northland Regional Council in its fight against possums. Keep your land free of possums and help neighbours in trapping an area.

Exotic Forestry is a major industry in Northland.



Hazardous Substances and Contaminated Sites

Hazardous substances comprise substances that present a significant danger to people and the environment because they are chemically reactive, explosive, flammable, corrosive, toxic or can cause diseases. They range from oil-based products used in road construction and vehicles to metallic products used in engineering, tanning and timber treatment. Pesticides and other agricultural chemicals are also used widely in Northland.

Hazardous substances are stored safely at this depot at Pohe Island.

Pressures

- There are around 450 industrial sites in the Northland Region that on a daily basis use hazardous substances as part of their operations. These industries include the agriculture, horticulture and forestry sectors. In addition there are many other smaller industries that as part of their process use hazardous substances. These include boat builders, panelbeaters and vehicle spray painters.
- Hazardous Substances Records (formerly Dangerous Good Records), show there are approximately 700 premises in Northland licensed to store hazardous substances.
- Between 1993 and April 2001 a total of 115 incidents involving hazardous substances excluding oil spills at sea were recorded by the Northland Regional Council. Most of these incidents involved the spillage of a hazardous substance ranging in volume from a few litres to a 100,000 litre spill of premium grade petrol. This large spill was recorded at Port Road, Whangarei.
- Between 1993 and April 2001 a total of 598 incidents involving oil spills into the sea were recorded by the Northland Regional Council.
- There are large volumes of petroleum products and flammable liquids stored and transported within the region.
- The use of pesticides in the region is widespread.

State of the Environment

- There are approximately 1500 contaminated sites in the Northland region. These range from sites that have been confirmed contaminated, those that are currently under investigation, to those that have been remediated. The majority of potentially contaminated sites in Northland are small and relatively low risk.

What is the Council doing?

- The Council requires contingency plans for industries that use hazardous substances.
- The Council has an ongoing programme of preliminary investigation, assessment and remediation of contaminated sites.
- The Council provides a collection, storage and disposal service for waste hazardous substances and provides a rapid response in the event of a hazardous substances incident.
- The Council participates in various cross-organisational groups that manage hazardous substances and wastes.

What can you do?

- Ensure hazardous substances are stored correctly, and make sure they are disposed of safely. Contact the Northland Regional Council if you are unsure of the correct methods.

what we've found on our Land

Land and Soils

Northland has a wide variety of landforms, soil types and an almost subtropical climate, which provides ideal conditions for many different land uses. Pastoral farming is the dominant land use in the region. Exotic forestry has been a growing land use in the North, which is likely to reduce soil erosion and improve water quality.

Pressures

- Land use change has had the greatest effect on soil health and erosion.
- Unsuitable land management practices can place significant pressures on soil health. Stock overgrazing and increased stocking densities on farms increases the potential for soil compaction, pugging and erosion.
- Exotic forestry now occupies approximately 10% of the region, and has positive effects on soil erosion and subsequent water quality when the trees are growing and fully established. However, soils can be adversely affected during harvesting.

State of the Environment

- Information on soil types, geology, slope and drainage have been used for classifying land in the Northland region. The New Zealand Land Resources Inventory (NZLRI) assesses capability based on eight land use capability classes.
- The most widespread form of erosion on pastoral land in Northland is gully erosion. Sheet erosion is also common throughout the region.

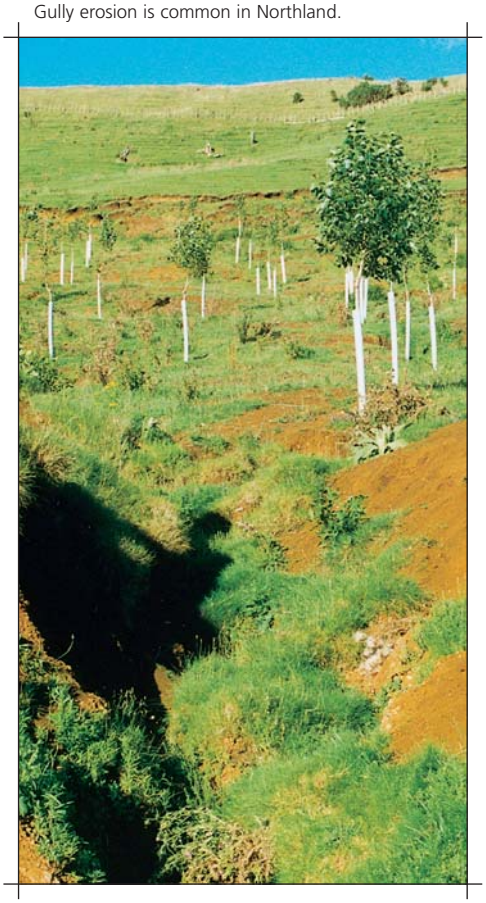
What is the Council doing?

- The Soil and Water Plan for Northland contains rules relating to land disturbance and vegetation clearance.
- The Council promotes sustainable land management through environmental education, field days, and by supporting industry Codes of Practice.
- A sustainable land use monitoring programme has been proposed, and work has started on the '500 soils' project to assess soil health and aerial photos of the region are being updated to assess land use change.
- District Councils are largely responsible for controlling land use. District Plans contain rules controlling land use, such as those for subdivisions.

What can you do?

- Plant trees and revegetate areas of bare soil to reduce erosion.
- Manage stock to avoid pugging and erosion.

Gully erosion is common in Northland.



Natural Hazards

Flooding is the most common natural hazard in Northland. Many towns in Northland are susceptible to flooding because they have been built on floodplains. The region is also vulnerable to tsunami from earthquakes around the Pacific Rim. Fire is also a risk for the region, because droughts occur regularly and the region has a lot of forestry, scrub and grass areas that are prone to fire. Many coastal areas are particularly dry during summer and autumn, increasing the risk of scrub and grass fires. There are also large tracts of forestry planted in these areas.

Pressures

- Many towns in Northland are built on floodplains that are prone to flooding.
- Large areas of productive farmland and associated structures are located near rivers and on floodplains.
- Similarly, flooding of land adjoining the coast and around tidal estuaries by storm surges and exceptionally high tides has only become a problem since that land has been developed for urban or farming uses.

State of the Environment

- Flooding from rivers is by far the most widespread and most frequently occurring natural hazard affecting Northland.
- Northland is outside of the more active tectonic and volcanic zones, but some parts of the region may still be susceptible to localised earthquake damage.
- Because of its long coastline and the encircling shape of many of its east coast bays, Northland is susceptible to tsunami generated by major earthquakes around the Pacific Rim.
- The Aupouri, Karikari and Pouto Peninsulas and the coastal area from

Flooding is the most common natural hazard in Northland.

Doubtless Bay to Mangawhai tend to have lower rainfall than inland areas, and there is a risk of scrub and grass fires during summer and autumn in most years.

- During high-intensity rainstorms, debris avalanches are a common phenomenon on some of the steep to mountainous country in Northland, regardless of vegetative cover.

What is the Council doing?

- River management in Northland is the responsibility of both the Regional and District Councils.
- Northland Regional Council operates a flood warning service, based on information collected by river flow meters, rain gauges and tidal gauges.
- During an emergency, the Northland Regional Council's Civil Defence Plan, together with the various District Council plans, provides the framework to co-ordinate the organisations, services and people of Northland to guard against the effects of a disaster.

What can you do?

- Have an emergency kit prepared in case of an emergency such as a flood, earthquake or tidal wave.
- Do not build on flood plains.
- Keep streams clear of blockages such as fallen willow branches.

Solid Waste

Solid waste includes any refuse or waste material, including semi-solid sludges, produced from domestic, commercial, or industrial premises or processes.

Over the last decade a number of changes have occurred in landfill management in Northland. Many of the small rural tips, which were poorly sited near harbours and tidal estuaries, have been closed, covered and sealed. These closed tip sites have been replaced with more appropriately sited modern transfer stations.

The disposal of refuse is now undertaken at larger, more centralised landfills. At a number of landfills the overall management of the site has been improved by excluding the general public from the landfill face.

Pressures

- There are now four waste disposal sites operating in the Northland region. This compares to 39 disposal sites in 1992.
- It is difficult to provide an accurate amount of the total volumes of solid waste produced in the region. However, the volumes of wastes produced in the region appear to be increasing.
- The incidence of illegal dumping has declined over recent years.

State of the Environment

- For the foreseeable future it is likely that landfilling will continue to be the preferred option for the disposal of the region's refuse, either in the region or exported to Auckland.

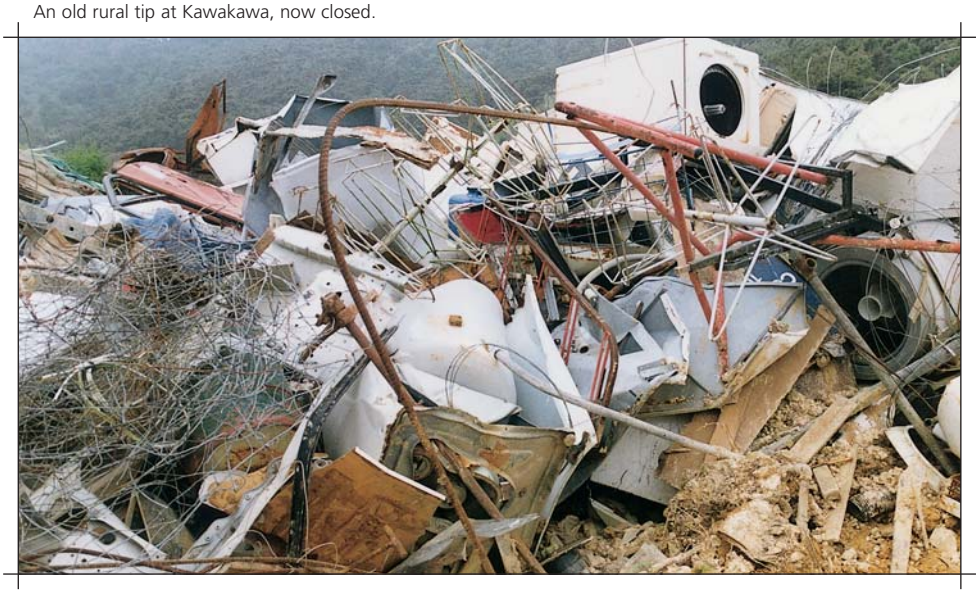
What is the Council doing?

- Open and closed landfills are regularly monitored for compliance with consent conditions.
- The completion of waste audits and cleaner production guidelines have been prepared and promoted for a number of targeted industries.

What can you do?

- Use transfer stations and landfills. Never litter or dump waste elsewhere.
- Try to minimise household and business waste through recycling.
- Contact the Northland Regional Council for advice on cleaner production for businesses to reduce wastage in byproducts.

An old rural tip at Kawakawa, now closed.



how are we doing ?

The Northland Regional Council, together with the people and industries in the Region, are making progress towards sustainable management of the environment.

This State of the Environment Report provides a benchmark for future reports, so we can see any changes that are occurring in the environment and develop policies and plans to deal with any problems.

We can also identify gaps in our knowledge and work towards allocating funding and staff to conducting monitoring in those areas.

The Northland Regional Council has set out desired outcomes for the management of the Region's resources in the Regional Policy Statement 1999. In addition, the Council has a Regional Coastal Plan, Regional Air Quality Plan, Regional Water and Soil Plan. These contain rules that may allow, restrict or prohibit activities related to our environment.

The NRC, like all other local authorities, is required under the Local Government Act 1974 to prepare an Annual Plan, which outlines the nature and scope of significant activities undertaken by the organisation over the financial year.

Any monitoring aims to identify what is happening to the state of the resource and whether we are achieving the outcomes specified in the plans. These goals are listed in the full State of the Environment report.

Copies of the full report are available from the Northland Regional Council's website at www.nrc.govt.nz

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Feedback from the community is important to help the Council make decisions. Your views are welcome.

Please fill out the feedback form opposite and return it to the Northland Regional Council.

Matapouri

feedback form

How interesting did you find this publication?

☐ Very interesting ☐ Interesting ☐ Not very interesting

What will you use this material for?

☐ Study ☐ Teaching/Presentation ☐ Planning/Decision Making
☐ Learning more about the environment ☐ Consultancy Work
☐ Other: _____

_____

What topics mentioned here would you like to have read more about?

_____

_____

Was the material...

☐ Too technical ☐ Too simple ☐ Just about right?

What aspects of the environment are you most concerned about?

☐ Air Quality ☐ Surface Water Quality ☐ Water Quantity and Flows ☐ Groundwater
☐ Geothermal ☐ Lakes ☐ Natural Character of the Coast ☐ Coastal Water Quality
☐ Coastal Hazards ☐ Land and Soils ☐ Natural Hazards ☐ Indigenous Biodiversity
☐ Hazardous Substances and Contaminated Sites ☐ Solid Waste ☐ All of it

What user group do you belong to?

☐ Private person ☐ Education ☐ Business/Industry ☐ Environmental Organisation
☐ Media ☐ Political Organisation ☐ Local Government ☐ Central Government
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What age group are you in?

☐ 0-15 ☐ 16-25 ☐ 26-45 ☐ 46-60 ☐ 61+

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Any other comments?

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