

EXECUTIVE SUMMARY

1. AIR QUALITY

Northland's air is generally of a high quality however urban areas are susceptible to air pollution, particularly during the winter months. In order to protect air quality, the Northland Regional Council (NRC) developed the Regional Air Quality Plan for Northland (RAQP). The RAQP contains policies relating to air quality in Northland and provides rules for undertaking activities that may affect air quality in Northland.

NRC has been monitoring air quality since 1996. The main objective of this monitoring is to find out where air pollution might pose a risk to human health. Particulate matter (PM₁₀) is sampled at three locations in Northland – Water Street and Robert Street in Whangarei and Donald Road in Kaitia. During 2007-08, PM₁₀ levels did not exceed the national standard at any of the three sites monitored. Sulphur dioxide (SO₂) is monitored at one site – Taurikura Bay, opposite the oil refinery. Peak concentrations recorded in 2007-08 did not exceed the national standard.

2. BIODIVERSITY

The NRC is one of Northland's primary environmental guardians and is one of the key agencies involved in implementing the New Zealand Biodiversity Strategy in Northland. Over the last 160 years of European settlement, 95% of forest and wetland habitat has been lost in the region. However, Northland still has the third highest number of acutely threatened species of all regions in the country. NRC is working with other organisations, landowners and communities to conserve and enhance biodiversity values in Northland.

A report commissioned by NRC found that 37% of Northland is still under indigenous vegetation cover. Of this, 20% is classified as National Priority 1 habitat (acutely or chronically threatened). Only 5.9% of this habitat receives legal protection. There are no minimum standards of care for protected sites, i.e., no prescribed management to maintain or enhance their biodiversity values.

During 2007-08, \$520,000 was allocated through the NRC Environment Fund to 150 projects aimed at conserving or enhancing natural values in Northland. A project was also launched to map and assess all wetland habitats in the region and record these details in a central database. Twenty of the highest value wetlands have been selected from this project for ongoing monitoring to record change over time.

3. BIOSECURITY

NRC is the management authority for pest plants and animals in Northland. NRC's goal is to prevent potential pests from entering the region, in addition to managing existing targeted pest infestations. The Council works in partnership with local communities to facilitate Community Pest Control Areas (CPCAs), in addition to managing its own pest management strategies. At a national level, NRC works with other regions and organisations to develop and trial biological control mechanisms and research new or potential pest threats.

In 2007-08, the NRC biosecurity team responded to 833 enquiries relating to pest management. The team also continued its pest management operations involving nine pest plants, four pest invertebrates, and nine pest mammal species. During 2007-08, new biological control agents were trialled for gorse and boneseed pest plants. Up to 1 July 2008, 17 CPCAs had either been approved or were being negotiated with local communities in Northland.

4. COASTAL

Northland Regional Council (NRC) monitors water quality at popular coastal bathing sites in Northland through the Recreational Bathing Water Quality Programme. During 2007-08, a total of 628 samples were collected from 44 sites. These samples were analysed for levels of illness causing bacteria. 94% of samples collected complied with the Ministry for the Environment (MfE) Microbiological Water Quality Guidelines. In addition, water at 15 sites was assessed for its suitability for recreational shellfish gathering. Using the MfE guidelines, only one site, Tinopai, had water quality that complied with the guidelines.

In 2007-08, there were a total of 133 marine farm consents in Northland. These marine farms are monitored on a biannual basis by NRC. During the 2007-08 monitoring year, 25 abatement notices were issued to marine farms that did not comply with the terms of their resource consent. Northland's six marinas are also monitored annually for compliance. In 2007-08, all six complied with the relevant limits for levels of bacteria and only one, Tutukaka, exceeded the limit for heavy metals.

The Estuarine Monitoring Programme (EMP) continued in 2007-08. Ecological assessments were made of the Whangarei harbour, Ruakaka estuary and Kerikeri inlet. Results to date suggest that human activity has adversely affected biological communities in these areas. More estuaries will be added to the programme in 2008-09. Water quality and sediment surveys were also undertaken during 2007-08 in the Bay of Islands and Whangarei Harbour. Results for 32 sites indicated low levels of bacteria and contaminants in the water, except after heavy rainfall when levels of contaminants became elevated above guideline values.

5. ENVIRONMENTAL COMPLIANCE

NRC is responsible under the Resource Management Act 1991 (RMA) for the control of activities that may cause adverse environmental effects. These activities are regulated by rules in Regional Plans and, where applicable, resource consent. NRC is responsible for monitoring the effectiveness of its rules and compliance with resource consent. NRC staff undertake assessments of consented activities and grade activities according to compliance. In cases of significant non-compliance, NRC can take enforcement action to halt an activity or fine or prosecute the offender.

In 2007-08, there were a total of 4006 consented activities in the NRC database. NRC staff undertook 3002 monitoring visits of these activities; 1912 of the activities monitored were fully compliant, 799 had minor non-compliance and 291 were significantly non-compliant. Enforcement action taken during 2007-08 included the issue of 173 abatement notices, 113 infringement notices and three successful prosecution cases.

6. ENVIRONMENTAL INCIDENTS

The Council operates a 24/7 freephone 'Environment Hotline' for people to report environmental incidents in Northland. Incidents reported include breaches of resource consent conditions, activities outside of rules contained in a Regional Plan but also natural phenomenon. All incidents are investigated by trained Council employees and the results of each investigation are recorded in a central database.

During 2007-08, a total of 1037 incidents were reported to the Council. The highest number of incidents was reported in Whangarei, which correlates with a higher population density and the urban nature of this area. The most common type of incident reported in 2007-08 was smoke related (21% of the total) and overall, the highest percentage of incidents reported were recorded as affecting air (37% of the total) or inland waters (25% of the total). 77% of the incidents reported in this financial year had no, or only a minor, impact on the environment.

7. GROUNDWATER

The main aquifer systems in Northland are found in areas of basalt geology, such as Kaikohe and Whangarei, and in the Aupouri sands. Rainfall is the main source or recharge for the region's aquifers. NRC monitors groundwater resources via State of the Environment (SOE) and compliance assessment monitoring. Groundwater quality and quantity is measured, in addition to age testing and recharge estimates. This data allows NRC to understand how each aquifer functions and how much water is available for use.

In 2007-08, groundwater level monitoring was undertaken at 82 bores in Northland. Groundwater levels were found to be above average at most bores. Water quality testing was undertaken at 54 bores in the region. Major determinants in the majority of bores sampled were found to comply with the New Zealand drinking water standards. Specific groundwater investigations found areas of saline contamination at Ruawai; elevated nitrate levels at Taipa and bacterial contamination in the Russell aquifer.

8. HYDROLOGY

NRC operates a hydrometric network consisting of rainfall, river, groundwater, tidal and lake water level monitoring stations. This network comprises 208 active stations, of which 81 are automated while the rest are manually read. 80 of these automated stations are on a radio/cellphone telemetry network. All data gathered from these stations is stored in a hydrological database.

In 2007-08, rainfall records showed a record wet July, with two severe storm events; a wet September, December, February and April; dry conditions in August, October and January and variable conditions for the remainder of the year. River flows were generally above average in July, August, December, February and May, but below average from September through to November and January. A total of 245 flow measurements were taken across the region, of which 45 were taken during flood conditions.

9. LAKES

NRC established the Lakes Water Quality Monitoring Network (LWQMN) in 2005. Water quality samples are taken from 31 lakes around Northland every three months and are analysed for a range of parameters, such as nutrients and bacteria. Each lake is given a Trophic Level Index (TLI) according to the amount of nutrients present in the water. In addition, 82 lakes around the region are surveyed annually to assess their ecological value. Each lake is given a ranking according to its ecological significance.

In 2007-08, of the 32 lakes surveyed as part of the LWQMN, 53% were classified as mesotrophic or oligotrophic and 47% were classified as eutrophic or worse. Of the 82 lakes surveyed for ecological value, 51% were found to have moderate to low value, while 28% were found to have moderate to high value. 21% were found to have outstanding ecological value. No new infestations of the pest plant 'oxygen weed' were found during survey work in 2007-08 however, the pest plant 'bladderwort' was found for the first time at Kai Iwi Lakes.

10. RIVERS & STREAMS

NRC undertakes water quality sampling at the most popular freshwater bathing sites in the region for 12 weeks over the summer months, as part of the Recreational Bathing Water Quality Programme. Samples are taken each week from these sites and analysed for illness causing bacteria. Sites are graded as red "unsafe", amber "caution" or green "safe" depending on the results. Results are posted weekly on the NRC website and forwarded to the three district councils and the District Health Board, for action where necessary.

A number of rivers and streams across the region are also sampled as part of the River Water Quality Monitoring Network (RWQMN). Samples are taken from each site once a month and analysed for a range of parameters. At the end of each financial year, sites are graded from best to worst water quality based on the season's results.

During 2007-08, 19 freshwater bathing sites were sampled. At the end of the season, the median for nine sites was within the green (safe for recreational use) range; the median for six sites was within the amber (caution) range and the median for four sites was within the red (unsafe for recreational use) range. The suitability for recreation grade (SFRG) has now been calculated for 16 freshwater sites with sufficient data. Of these sites, eight have been graded as "poor" and eight have been graded as "very poor".

Ten sites were added to the RWQMN in 2007-08, bringing the total number of sites in the network to 34. The river rated as having the best water quality in 2007-08 was the Waipoua River. The river rated as having the worst water quality was the Manganui River.

11. WASTE MANAGEMENT

The Council is responsible for the collection and management of waste hazardous substances and the monitoring of contaminated sites throughout Northland. The Council also undertakes inspections of workplaces in the

region which handle or store hazardous materials, and provides a 24/7 emergency response team for incidents involving hazardous substances.

During the 2007-08 financial year, approximately 5 tonnes of waste hazardous substances were collected from throughout Northland for subsequent disposal or recycling. 360 workplace inspections were undertaken and the emergency response team attended 27 incidents involving hazardous substances.

In addition, 15 contaminated sites were visited and inspected and all monitoring data was input into the central Contaminated Sites database (Selected Landuse Register). Both operational landfills in the region were also monitored. All landfill sites monitored in 2007-08 met the conditions of their Resource Consents.