



**TOWARDS  
SUSTAINABLE  
DEVELOPMENT**

## WORKING WITH PEOPLE, CARING FOR THE ENVIRONMENT

The purpose of this document is to report to the community on the state of the environment in the Taranaki region and to record changes since the Council's last state of the environment report in 2003<sup>1</sup>.

The majority of the environmental indicators reported on here demonstrate that environmental quality and overall sustainability in the Taranaki region remain high. Significant progress has been made on a number of issues since the last report. Some issues continue to require priority attention and strategic action from the Council into the foreseeable future, but these are considered to be manageable with continued targeting of appropriate resources to the task.

Over 92% of the region's land and soil resources are sustainably managed, with 87.4% of the hill country now used sustainably with no significant soil erosion problems. The Council continues to make good progress in promoting, in partnership with landowners, sustainable land management in the hill country. At the time of the last report, the Council had prepared farm plans covering 28% of the privately-owned hillcountry land. That figure now stands at 58%.

The *Regional Soil Plan*, made operative in 2001, addresses soil erosion issues in Taranaki with the sustainable land management

programme supporting hillcountry farmers to farm in a sustainable way. The Council will continue to monitor soil erosion in Taranaki.

Taranaki is fortunate in having soils that have very low to moderate vulnerability to soil compaction, so problems of soil compaction only occur under wet winter conditions and are generally reversible with appropriate pasture and stock management. The *Regional Soil Plan*, includes policies and methods to address soil health issues in Taranaki. Actions include working directly with landowners on sustainability issues.

The Council's database shows there are few confirmed contaminated sites in Taranaki. The Council has investigated 757 sites in order of priority and 16 sites have been remediated or are currently managed so that any levels of contamination no longer pose an unacceptable environmental risk. Hazardous substances are managed under the Hazardous Substances and New Organisms Act 1996, and discharges under the Resource Management Act 1991. Council inspects industries and businesses to assess compliance with regulations under these acts.

About 20% of the region is set aside as public conservation land and managed by the Department of Conservation to safeguard biodiversity values. Programmes are targeted by a range of agencies and community groups at maintaining or enhancing the biodiversity of the region. These include protecting areas of indigenous vegetation remaining on private

land through QEII covenants; undertaking predator control programmes, aimed at protecting threatened fauna; planting both native and exotic flowering and fruiting trees in the city to attract birds; weeding coastal cliffs to protect threatened plants; maintaining low possum levels through the Council's self-help possum control programme on the ring plain and by the Department of Conservation programmes in conservation areas; and restoring areas of riparian or wetland vegetation.

Taranaki is also fortunate to have rivers and streams that are short and fast so water quality is better than might be predicted given the highly intensive land uses of the region.

The quality of Taranaki's fresh water has been monitored by the Council through a state of the environment monitoring programme. This has shown that measures of ecological health, such as the communities of invertebrates living in streams, are good to excellent in the upper catchments where there is more stream bank vegetation cover but only fair further down the catchment where land use is more intense. Over the past 12 years, ecological health has demonstrably improved, including a number of sites in the middle and lower reaches of catchments, and has not demonstrably deteriorated at any sites. The region's fresh water usually meets the bacteriological guidelines for swimming, although at certain times of the summer (immediately after a flood event) or in certain catchments (such as the small intensively farmed catchments) water quality may not meet national guidelines. Measures of levels of organic pollution (BOD), bacteriological pollution (faecal coliforms and enterococci) and toxicity (ammonia) are now stable regionally, after past improvements. The region's water quality comfortably meets guidelines for dissolved oxygen and clarity. Taranaki rivers are naturally high in phosphorus and so do not meet national guidelines, furthermore levels of phosphorus are generally deteriorating. Nitrogen levels meet guidelines in the upper reaches of catchments, but not further down, where impacts of agriculture are more intense.

The *Regional Fresh Water Plan*, made operative in 2001, contains policies, methods and rules to maintain and enhance water



Council staff discuss possum control with a farmer.

quality in Taranaki. Council officers regularly monitor for compliance with the plan and resource consents, undertaking enforcement action where necessary. Management highlights over the past five years include a decline in the number of point source discharges to surface wastewater from 1,612 in 2003 to 1,413 in 2008, significant investments made by agriculture, industry and the community in waste water treatment and disposal systems, and the high rate of compliance with consent conditions with rates averaging 96% over the past five years.

There has been a significant growth in the Council's riparian management programme – 2,009 riparian plans have now been prepared (treble the number of plans that had been prepared by 2003) covering a total of 10,818 km of stream bank, and 1.3 million riparian plants have been provided at low cost to riparian plan holders since 1997. However, implementing riparian plans by landowners has been slow with only an additional 504 km of stream bank having been fenced, and 426 km of stream bank planted. Taking into account existing fencing, however, it does mean that 60% of Taranaki's stream bank on the ring plain is fenced, and 43% is vegetated.

Taranaki is well-endowed with water with over 530 named rivers and streams. The equivalent of 194 Olympic-sized swimming pools of water per day is allocated for abstraction from Taranaki rivers and streams. Most of this is used for municipal and rural water supply schemes but interest in pasture irrigation is increasing, particularly in the coastal and southern areas of the region. More than 20% of the average low flow is allocated for use in nine rivers, but flows at which abstraction must cease are set to safeguard ecological values.

The *Regional Fresh Water Plan* contains provisions to manage water use to protect aquatic life and other values. The Council consults with the community and affected parties on this. Measures are required to mitigate or reduce the environmental effects of water use and these are closely monitored by the Council.

Groundwater quality and quantity in Taranaki is generally very good. Relatively low levels of groundwater use mean that the system is not over-allocated or stressed, although groundwater abstraction is increasing. Of the 68 groundwater wells monitored, 94% had nitrate levels that met national drinking water standards. Nitrate levels have been found above the guidelines in a few wells tapping into shallow aquifers in South Taranaki, but overall groundwater quality in terms of nitrate levels is generally improving.

Over the past five years regionally significant wetlands have on the whole been adequately protected through formal mechanisms and proactive protection works such as fencing and planting. However, small wetlands and streams are under threat from land development. Of 108 structures that have the potential to impede fish passage, 49 provide adequate fish passage, two have been removed and the others need remedial work. Since 2001 fish passage has been improved over 12 structures.

Freshwater biodiversity is managed through provisions in the *Regional Fresh Water Plan* for land drainage, protection of regionally significant wetlands and provision of fish passage past structures.



Working with tangata whenua is an essential part of managing our environment.

Taranaki is also fortunate to have an exposed coastline which ensures excellent bathing water quality. Forty-three consents are held for discharges to the coast, but of these there are now only six major community or industrial treated wastewater discharges direct to coastal waters, and significant improvements continue to be made in terms of waste treatment and disposal systems. Now, the greater influences on coastal water quality are the rivers and streams discharging to the sea, carrying with them the cumulative effects of land use within their catchments. This is most noticeable from catchments draining the more erodible hillcountry rivers.

Taranaki has an active, high-energy coastline with natural erosion occurring at numerous points. Since the *Regional Coastal Plan* became operative, 238 coastal permits have been issued, reviewed or varied for activities in the coastal marine area and 96 new consents have been granted since 2003. Most coastal permits are for coastal protection works and stormwater structures with an estimated 11.6 km of seawall built to protect the region from coastal erosion (about 2 km of this has been over the past five years).

The *Regional Coastal Plan*, contains policies and methods to protect the high water quality and natural character of the Taranaki coast. Again, the Council works with resource users, affected parties and the wider community to help achieve this.

Coastal biodiversity is monitored by the Taranaki Regional Council (estuaries and rocky shore communities), the Department of Conservation (marine protected areas and threatened marine mammals), the Ministry of Fisheries (fish stocks) and the Ornithological Society (birds). These programmes have found that ecological conditions in both the Tongaporutu and Waitōtara estuaries, and along rocky shore reefs, are generally stable and more than 70 different species of birds use the monitored estuaries (which include two Waikato region estuaries). The legally protected subtidal habitats around the Sugar Loaf (Ngā Motu) Islands provide shelter for a greater diversity, and higher numbers, of fish and other organisms than neighbouring areas of reef. Extensive reef ledges in North Taranaki, now protected under a marine reserve, support a highly diverse collection of rare and exotic sponges.

Coastal and marine biodiversity is managed by a number of agencies operating under various pieces of legislation. Coastal biodiversity

protection has been enhanced recently with the establishment of two new marine reserves. It is safeguarded through the *Regional Coastal Plan*, the fisheries quota management system, and through the setting aside of marine reserves or marine protected areas.

In the previous state of the environment report it was noted that on the basis of national guidelines, air quality in Taranaki is rated as excellent. Given that there are no significant widespread pressures on air quality, levels of monitoring of general air quality have been reduced, although the Council still carries out comprehensive monitoring of consented activities. Consent conditions are generally more stringent, reflecting better control options and heightened community expectations, and so major air discharge permit holders continue to make significant investments in emission controls and production technology.

The *Regional Air Quality Plan*, made operative in 1997, contains policies, methods and controls to maintain and enhance air quality in Taranaki and is in the process of being formally reviewed, in consultation with the community.

The Government and other members of the international community are addressing climate change through a range of initiatives, including actions to implement the Kyoto Protocol. Initiatives at the regional level include management of point source emissions through the *Regional Air Quality Plan*, and

advocacy for sustainable land management which may lead to increased numbers of trees which will mitigate greenhouse gas emissions.

Issues in this report concerning natural features and landscapes, and amenity and heritage values, are largely the domain of the district councils. This report shows such features to be of a high quality in Taranaki and recognised and provided for in both district and regional plans.

Taranaki is subject to a range of natural hazards, the most significant of which are flooding, volcanic activity, earthquakes, high winds and land instability. The Council operates an extensive water level monitoring and flood warning system, as well as wind and rainfall recorders. In addition, eight seismometers (instruments used to measure earthquakes) are located around Mount Taranaki to monitor potential volcanic activity. Over the past five years monitoring has shown no volcanic activity, four significant flood events and a number of minor events. Each year in Taranaki, on average, 200-300 minor earthquakes were recorded. The swarm of tornadoes that hit Taranaki in July 2007 triggered a declaration of a state of emergency. The emergency response systems functioned well and the Taranaki community rallied around to help.

Both regional and district plans identify natural hazards and contain controls to reduce hazard risks. Significant hazards and risks to be managed by the Taranaki Civil Defence

Emergency Management Group are identified in the *Taranaki Civil Defence Emergency Management Plan*. A volcanic strategy has also been prepared and updated. The Taranaki Regional Council has prepared and updated a flood event standard operating procedure. Community awareness and education of natural hazards and responses are carried out.

In our increasingly consumer-driven society, with its throwaway philosophy, the management of waste is a major issue, with the challenge being to find new uses for materials no longer required (i.e. recycling) or to find ways of cutting down on the quantity of materials that end up being discarded (i.e. minimising the amount of waste generated). There is also a need to ensure that large volumes of waste can be safely disposed of. The whole Taranaki region is now serviced by just one well managed landfill, at Colson Road in New Plymouth, but the quantity of waste discharged to the landfill has increased by 20%. Increasingly wastes are discharged to cleanfills, which have increased in number from 13 (in 2003) to 23, and council kerbside recycling collections have expanded in the region with a kerbside green waste collection now being offered in South Taranaki. Since 1991 the Council has collected and disposed of more than 40 tonnes of redundant, unknown or hazardous wastes.

The *Regional Waste Strategy* has been prepared and adopted by all four councils in the region. The Strategy provides specific waste minimisation and management goals for local authorities, industry and the community on matters relating to waste minimisation, hazardous wastes and waste disposal.

Finally, in relation to energy, Taranaki produces energy from both non-renewable fossil fuels (oil, gas, coal) and from renewable sources such as water (hydroelectricity), wind, solar or biomass. Taranaki uses 3.2% of the total energy consumed in New Zealand with industry using 38% of all energy consumed in Taranaki and with households consuming the next greatest proportion (28%). 477 resource consents have been issued by the Council relating to petroleum exploration activities over the past five years and 48 relate to production stations. Four hydroelectric power generation



Riparian planting. Taranaki Regional Council Chairman David MacLeod, Fonterra Shareholders Chairman Blue Read and Shareholders Council member Shona Glentworth.

schemes in Taranaki can produce up to 47 megawatts. Taranaki has currently no wind farms, although one is proposed in South Taranaki.

Energy production and use are primarily managed by Central Government (e.g. the Ministry of Economic Development). Two national-level strategies guide energy development, transmission and use: *The New Zealand Energy Strategy to 2050* and the *Energy Efficiency and Conservation Strategy*. At the local level, energy, and effects associated with the production of energy, are managed under the *Proposed Regional Policy Statement*, and regional and district plans.

Many of the programmes described in this report have relied on a combination of methods. The Council has continued to implement its suite of regional plans prepared in the late 1990s. These contain formal policies and rules to manage the adverse environmental effects of activities. Resource consents issued in accordance with the plans are monitored and enforced. This is a necessary part of effective environmental management and the Council places considerable emphasis on compliance with the conditions of resource consents to ensure that acceptable environmental standards are maintained in the use and development of our natural and physical resources.

The overall approach of the Council to all of its environmental work, however, is encapsulated in its slogan "working with people, caring for our environment". The Council has continued to give effect to this slogan and to strengthen it further in the past five years by getting alongside farmers, landowners, industries and individuals and taking practical actions to protect and improve the environment. This can be seen not only in the sort of actions taken to continuously improve environmental performance through the resource consent process, but also in the efforts of the Council and the community in the very significant voluntary programmes run by the Council such as its riparian and sustainable land management programmes. The Council is set to expand its voluntary programmes further in the area of biodiversity protection and enhancement following a review of biodiversity policy and adoption of a *Biodiversity Operational Strategy* in 2008.

The ability to successfully develop effective programmes that involve partnerships, facilitation and advice, instead of a major reliance on rules to force change, has been due to a continuation of positive shifts in environmental awareness and responsibility over the past decade or more, and which was noted in the Council's 2003 *State of the Environment Report*.

## **SUSTAINABLE DEVELOPMENT: THE PATH TO A SUSTAINABLE FUTURE**

Another way of looking at our level of sustainability is to examine the ecological footprint of the region which is the total amount of productive land required to support a given population. Using this definition, Taranaki was included among the best performing regions, and was below the New Zealand average, in a recent study on the ecological footprint of regions throughout the country. This suggests that the region's population is living within the carrying capacity of the land and not in an ecological deficit situation<sup>2</sup>.



Sustainable development means looking after the environment for future generations.

The combined effect of all the actions noted in the preceding sections of this report represents a significant step along the path to sustainable development, which meets the needs of the present without compromising the ability of future generations to meet their own needs<sup>3</sup>.

The New Zealand Government has endorsed the concept of sustainable development for New Zealand as the foundation for enhancing the well-being of people and the environment<sup>4</sup>. Sustainable development involves looking after people, taking a long-term view so that each generation plans for the next generation and takes into account social, cultural, economic and environmental dimensions. In short, sustainable development is best understood as a balanced, integrated approach to development that ensures we look after people and the environment now and in the long term.

The international community has agreed that governments cannot achieve sustainable development on their own. Any progress depends on the efforts of primary producers and industry, Local Government, communities and other sectors of society – each has its strengths and particular contributions to make. Local Government is seen as playing a pivotal role in educating, mobilising and responding to the public to promote sustainable development because it is the level of governance closest to people. This is reflected in New Zealand's own Local Government Act 2002 which has an expectation that local authorities will play a broad role in promoting the social, economic, environmental and cultural well-beings of their communities by taking a sustainable development approach<sup>5</sup>.

Local authorities are required to include in their long term council community plans an outline of how they will work with other local and regional organisations, Māori, Central Government, non-Government organisations and the private sector, to further the community outcomes desired for the future of the region or district.

This reflects international approaches where practical actions based on participation and commitment from all parties at the local level are essential for building sustainable economies and communities. It also recognises that working in partnership with people is more conducive

<sup>2</sup> McDonald G, & Patterson M, 2003. *Ecological Footprints of New Zealand and its Regions*. Ministry for the Environment, Environmental Reporting Technical Paper.

<sup>3</sup> World Commission on Environment and Development, 1987. *Our Common Future*. The Commission's definition of sustainable development is widely used internationally.

<sup>4</sup> New Zealand Government, 2002. *The Government's Approach to Sustainable Development*.

<sup>5</sup> Local Government Act 2002 Section 3

# TOWARDS SUSTAINABLE DEVELOPMENT

Table 11.1: Community investment in the environment in Taranaki 2002-2007<sup>6</sup>.

Taranaki Region (\$ Million)	Capital Cost		Annual Operating Cost	
	1997-2002	2002-2007	1997-2002	2002-2007
<b>Surface Water</b>				
Community	\$16.1	\$83.4	\$10.0	\$21.7
Agriculture	\$5.1	\$7.2	\$0.9	\$1.5
Industry	\$26.7	\$16.3	\$1.7	\$1.3
<b>Sub-Total Surface Water</b>	<b>\$47.9</b>	<b>\$106.8</b>	<b>\$12.7</b>	<b>\$24.5</b>
<b>Air</b>				
Community	-	\$0.0	-	\$0.0
Agriculture	-	-	-	-
Industry	\$18.2	\$48.7	\$1.6	\$0.8
<b>Sub-Total Air</b>	<b>\$18.2</b>	<b>\$48.7</b>	<b>\$1.6</b>	<b>\$0.8</b>
<b>Land</b>				
Community	\$7.9	\$4.7	\$4.2	\$8.7
Agriculture	-	\$12.3	-	-
Industry	\$14.0	\$32.0	\$1.5	\$1.5
<b>Sub-Total Land</b>	<b>\$21.9</b>	<b>\$49.1</b>	<b>\$5.7</b>	<b>\$10.2</b>
<b>Energy</b>				
Community	-	-	-	-
Agriculture	-	-	-	-
Industry	-	\$7.1	-	\$0.8
<b>Sub-total Energy</b>	<b>\$0.0</b>	<b>\$7.1</b>	<b>\$0.0</b>	<b>\$0.8</b>
<b>Environment Services</b>				
Community	-	-	\$5.9	\$4.2
Agriculture	-	-	-	-
Industry	\$3.2	\$4.9	\$3.0	\$1.3
<b>Sub-Total Environment Services</b>	<b>\$3.2</b>	<b>\$4.9</b>	<b>\$8.9</b>	<b>\$5.5</b>
Total Community	\$24.0	\$88.0	\$20.1	\$34.6
Total Agriculture	\$5.1	\$19.5	\$0.9	\$1.5
Total Industry	\$62.0	\$109.1	\$7.8	\$5.7
<b>Total</b>	<b>\$91.1</b>	<b>\$216.7</b>	<b>\$28.8</b>	<b>\$41.8</b>

<sup>6</sup> Business & Economic Research Ltd has indicated that the investments figures provided are conservative.

to building co-operation and commitment than working in isolation. This is why many of the policies and programmes described in this report represent a step along the path to sustainable development in Taranaki. They represent an attitude of 'doing' – of taking action on practical initiatives for the environment. This is a significant shift in approach from the 1970s when increasing levels of regulation were applied to address the pressures being placed on the region's natural resources. The Council still applies rules and regulations as these provide certainty and clarity for everyone as to the environmental standards required. However, with increasing understanding and goodwill, the Taranaki community has continued to embrace environmental stewardship. Successive councils have taken up the challenge to work with the community to achieve outcomes that are sustainable in the long term.

Taranaki's generally high-quality environment has been maintained, and in many instances enhanced, through these efforts, despite continuing economic development and intensification of resource use. Again, this



Opening a new farm dairy on a PKW farm.

## A QUESTION OF BALANCE

How can we maintain and expand agricultural production while at the same time protect and enhance environmental quality?

That is one of Taranaki's big sustainability questions. And for the Parininihi Ki Waitōtara Incorporation (PKW), the answer in today's modern business world lies in traditional and timeless kaitiakitanga.

This is more than just words. PKW's practical brand of kaitiakitanga is backed with serious money.

For example, its subsidiary PKW Farms Ltd spent \$120,000 on a 22 m centre-pier bridge on one of its Taranaki dairy farms, as part of wider efforts under its land management plan to protect waterways. So committed is PKW to these efforts that it is considering a Memorandum of Understanding with the Taranaki Regional Council agreeing to meet the *Dairy and Clean Stream Accord's* regional targets for riparian protection early.

Formed in 1976, PKW looks after the interests of the 8,000 owners of some 20,000 ha of West Coast lease land between Parininihi in the

has not been achieved by accident or by good luck but by the combined efforts of industry and agriculture and the community at large.

The *2003 State of the Environment Report* included an independent economic analysis of the level of spending by the Taranaki community on environmental protection and enhancement over the previous five years and earlier. The Council commissioned a repeat of that work to provide up-to-date information on the level of investment being made on the environment in Taranaki in the past five years. The results have shown capital investment by the Taranaki community in excess of \$216 million in the period 2002-2007 compared with \$91 million in the preceding five-year period. Annual operating costs are of the order of \$41.8 million (\$28.8 million in the preceding four-year period). Total spending on the environment by the Taranaki community has been conservatively estimated at \$85.1 million per annum<sup>7</sup> (Table 11.1). This is an increase of \$28 million per annum from the \$57.1 million per annum reported in our 2003 report.

north and Waitōtara in the south. About 2,400 ha of this is dairy land, operated as 13 farms with 50:50 sharemilkers milking about 7,000 cows.

Besides riparian fencing and planting, and replacing fords with bridges, PKW Farms Ltd is fencing native bush remnants and encouraging regeneration – so successfully at one site that a former farmhouse has been transformed into a tourist lodge and corporate retreat.

It is replacing substandard effluent ponds with spray irrigation systems that allow aerobic, ultra-violet sterilisation of the effluent, with no surface run-off into creeks.

PKW is also installing road underpasses, at about \$60,000 each, to keep the solid waste off public roads and prevent disease transfer by vehicles.

All this environmental care and stewardship that is the essence of kaitiaki duties has taken place against a backdrop of increased milk production. PKW Farms Ltd and its sharemilkers are producing at well above the region's average, with the farms expected to overwinter 7,000 cows, and produce 2.3 million kgs of milk solids, an average of about 1,077 kgs/ms per hectare.

"PKW is committed to be a leader in the field of on-farm environmental protection and restoration," said the Chairman, Spencer Carr. "The continuation of the land management plan will see PKW become a state-of-the-art on-farm dairy producer, with a scale that will make it potentially significant in the international market.

"This scale and commitment to leading technology and environmental management means that PKW Farms Ltd can create a base for enlightened processing and innovation in the range of dairy products, from foods to health and sport supplements and medical remedies."

7 Wu, J. Sanderson, K. 2008. *Community Investment in Environmental Improvements in Taranaki*. Prepared by Business and Economic Research Limited for the Taranaki Regional Council.



Environmental monitoring by schools increases environmental awareness and understanding.

These levels of investment represent a significant commitment by the Taranaki community to the maintenance of the high-quality environment that we all enjoy. Much of what has been achieved is the result of proactive initiatives supported and encouraged by the Council and the wider community.

Harnessing the commitment of all sectors to a sustainable future is the way forward. The Council will continue to work within and alongside the people of Taranaki to this end.

## WHERE TO FROM HERE?

This report is the third state of the environment report to be prepared by the Council. It builds on the findings of the *2003 State of Environment Report* and the *1996 State of the Environment Report*. It makes extensive use of information gathered from specified state of the environment monitoring programmes established in 1995 and earlier, and from monitoring programmes undertaken by other agencies and community groups. State of the environment monitoring is a core function of the Council. Accurate trend analysis and early warnings of issues require a long-term, focused and scientifically-designed monitoring programme. The Council has committed resources to have an appropriate programme in place into the long term as evidenced in its *Long Term Council Community Plan*.

The Council will continue to report on the state of the environment, through various media such as annual reports, reports on special investigations and research, or on particular aspects of the environment and through the Council's *Recount* newsletter and via the Council's website<sup>8</sup>.

If readers require further information about any of these issues or information presented in this report, staff of the Taranaki Regional Council are happy to assist.

The Taranaki Regional Council welcomes and encourages feedback on the issues discussed in this report – phone 06 765 7127, email: [info@trc.govt.nz](mailto:info@trc.govt.nz) or visit the Taranaki Regional Council at 47 Cloten Road, Stratford.







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