



Land



LAND

Marlborough's land environment is rich and varied with mountain, hill, valley, lowland and island ecosystems and the soil, plants and animals that live within them. Because of our climatical, geological and geographical characteristics we are fortunate to have a very wide diversity of native plant and animal species, some of which are found only in Marlborough.

The varied nature of our physical environment has led to a wide range of land uses across the district, including agriculture, viticulture and forestry. Our towns, roads and other infrastructure are also important occupiers of the land resource. It is important to recognise therefore, that as a community we rely on the use and development of land resources for our cultural, social and economic wellbeing.

However, both rural and urban land use and development have the potential to adversely affect our land resources. For

example, in some areas where there has been land clearance activities there is little remaining indigenous vegetation – this is particularly so in southern Marlborough. In other areas animal and plant pests infestations have invaded and damaged both indigenous and production land ecosystems. Even within the built environment we have effects in terms of trying to accommodate needs for open space (reserves), roads, industrial and commercial uses, the removal of waste and our aspirations for residential dwelling.

Gathering information on things such as indigenous vegetation, soil quality and pest numbers will enable the Council to understand the land resource and react to the pressures facing it. Learning more about our urban communities will also be important in dealing with the future needs and aspirations of Marlburians.

OPEN SPACE AND COMMUNITY RESERVES

The Marlborough Regional Policy Statement and resource management plans recognise the importance of having open space and community reserves for recreation activities, conservation values and landscape or visual reasons. These areas contribute to the overall sustainable management of resources for Marlborough. In addition, open space areas often have high levels of natural character, this being identified as a matter of national importance under section 6 of the RMA.

The substantial open space resource, which exists in the Marlborough Sounds in particular, is a significant contributor to the well-being of both Marlburians and visitors to the area for natural character and visual reasons. It also provides protection for important habitats and ecosystems and enables access to and along the coast,

another matter of national importance under the RMA. However, open space and community reserves in and adjoining the urban areas of Marlborough, are equally important in contributing to the community's overall recreational, social and cultural needs.

The Council and the Department of Conservation are responsible for managing open space areas and community reserves in Marlborough that are in public ownership. These areas are generally administered under the provisions of the Reserves Act 1977. Open space under the Department of Conservation's responsibility extends to vast areas of the Marlborough Sounds, the Richmond Ranges, the Wairau Lagoon and many other coastal areas.



McKendry Park

The Council's responsibility in managing publicly owned land includes some 8812 hectares of Marlborough's land resource. This includes parks, river reserves, walkways and sports grounds. The Council is continually working on projects that will enhance or maintain the values associated with these areas. Over the past year this has included amenity plantings in many of the existing reserves, an ecological survey of Victoria Domain in Picton, plantings on road reserve as part of state highway enhancement and taking part in the Wairau Plain Landscape Group. Several more projects are reported on in more detail below.

KOROMIKO FOREST RESERVE

In the 2002/2003 Update it was reported that a Council-owned recreation reserve at Koromiko, that was formerly operated as the Koromiko Deer Park, had been the subject of an ecological survey. The area was found to be ecologically significant, as it was representative of the great historic forests of the alluvial flats in the valleys north of the Wairau Valley. It was also the best example of valley flat treelands in the Para Ecological District, if not the wider region, and contained a nationally endangered plant, the yellow mistletoe (*Alepis flavida*). As a result of these findings, the Council decided to manage the reserve with an aim of restoring a native forest on the site.

The first landscape revegetation planting, using 200 ecosourced plants was completed earlier in 2004. (Ecosourcing means using native plants that have been grown from seed gathered from local original species. This helps maintain local biodiversity by allowing local species to be preserved.) Another 1500 plants have been grown on for planting in the spring of 2004. Seed collection will continue for ongoing plantings to re-establish an understory between remnant beech and totara trees.

Preparation of a management plan is proposed over the next 18 months, and permanent protection of the reserve is also proposed in the near future by way of a QE II covenant.

Below: Local school children preparing to plant at the reserve

Below right: Yellow mistletoe



MCKENZIE STREET DRAIN ENHANCEMENT



McKenzie Street Drain - before and after enhancement works



The Wither Stream runs from the Wither Hills and forms part of a network of waterways draining the southern part of Blenheim. Over time its management for weed control has been typical of the traditional spray management of open waterways and drains which run through the Blenheim urban area. While this has been effective in maintaining weed growth in the channels, the visual appearance of the waterways is generally unsightly and the ecological values have been negligible. Slumpage of the unstable banks of the channels has also been a constant problem.

Over the past couple of years enhancement activities of the upper section of the stream (referred to as the McKenzie Street Drain) have taken place with the support of students from Witherlea School. Wooden sleeper edging has been used to concentrate the low flows and native plantings have been used to stabilise the banks. This has proved very successful in turning an unsightly utility drain into an attractive urban amenity. As the plants have become established, the need for maintenance of both the banks and channel has also been reduced. Ecological values of the waterway have now been greatly enhanced, with an improved habitat providing for invertebrates, native eels and native birds.

The next stage of this project will occur in the second half of 2004 with further plantings being undertaken by the school, together with Council staff, in the area of the waterway leading up to the Harling Park flood retention area.

WITHER HILLS FARM PARK

The Wither Hills Farm Park (Farm Park) is located on the southern boundary of the Blenheim urban area. The Farm Park has many different experiences to offer the community, including mountain biking, walking and running tracks, spectacular views and the feel of being in the 'country' amongst the sheep and cattle grazing on the farm. It has become increasingly popular in the last 10 years and is recognised as an "iconic" backdrop to the town.

The Farm Park comprises some 1100 hectares, and aside from its recreational aspects, has as one of its principal functions, soil conservation. This was behind the original purchase of 165 hectares of the current Farm Park land back in 1944. The geological characteristics of the Wither Hills and their historical pastoral management combined to create a severe erosion problem, which was recognised as a potential threat to the township of Blenheim. Over time the need for improved and controlled soil and

Enjoying the spectacular views from the Farm Park



vegetation management of this area was recognised and successive land purchases have now resulted in a large area of land being managed by the Council for this purpose.

A management plan governs the use of the Farm Park and, not surprisingly, the main objectives are for soil conservation and recreation. A significant part of the management plan has been the inclusion of an amenity planting master plan. This identifies the potential extent of planting areas within the Farm Park whilst protecting the iconic tussock grassland character of the hills.

The 2002/2003 Update reported that there had been amenity tree planting beside Quail Stream, with approximately 3000 mixed species being planted. Further plantings have occurred in this area with 6000 oaks planted during the winter of 2004. An additional 1200 ecosourced native plants are currently being planted within the QEII Trust Covenant Area along Sutherland Stream. This covenant area, which comprised some 41 hectares of dryland forest remnant and riparian habitat, was largely devastated in the Boxing Day fire of 2000, with only a little of the kanuka forest and planted cabbage trees and flaxes surviving.

Regular vegetation surveys in the covenant area have taken place as part of the post-fire vegetation monitoring programme. (Annual reports and data from this survey have been forwarded to Landcare Research for research purposes.)

Weed control has been a major issue in the covenant area since the fire. Little broom and gorse occurred within the area prior to the fire, but since the fire broom seedlings have sprung up. As there is no grazing within the covenant area the broom was initially able to grow unchecked. A major knapsack and helicopter spraying effort has now seen broom control being very successful within the covenant area.



RIVERSIDE PARK REDEVELOPMENT

The section of the Taylor River in Blenheim, now known as Riverside Park, was once a busy river port providing for the transport of passenger and goods between Blenheim and other coastal ports of early New Zealand. This area was pivotal in the growth of the district and saw some surprisingly large vessels berthed alongside the numerous wharves and warehouses that once overlooked it. Trading vessels continued to use this area until the scow known as the Echo made its last journey in 1965. (The Echo is now permanently berthed in Picton.)

The Council has been undertaking a major redevelopment of this waterfront area, which was completed in June 2004. Featuring extensive wharves, a new arched pedestrian bridge and a nine metre high fountain in mid stream,

the development has had as its focus, the linking of the Blenheim town centre with the Taylor River to enable greater public use and enjoyment of the area.

This is being further enhanced over the second half of 2004, with extensive native plantings proposed along the banks of the Taylor River, both upstream and downstream of the development site. In addition to the visual amenity value of these plantings, the ecological habitat value created is significant along a section of the Taylor River that has been largely devoid of native riparian plantings for the past 100 years.

The redevelopment has brought some of this history back to life in an attractive and exciting way and opened up a previously little-used community asset for all to enjoy.

Riverside Park





Above: Kahikatea tree

Right: Ecological District Boundaries

MARLBOROUGH SIGNIFICANT NATURAL AREAS PROJECT

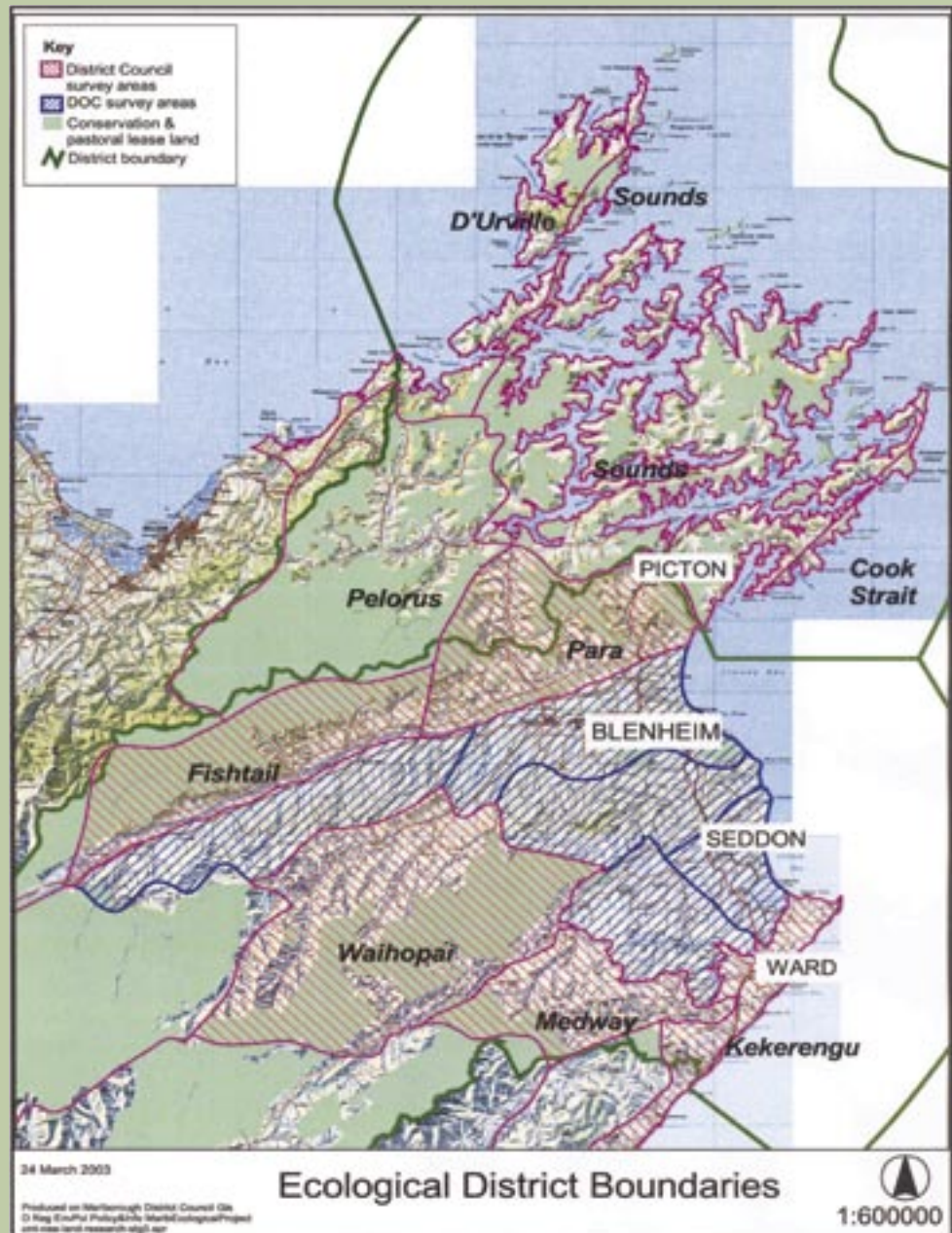
The Marlborough Significant Natural Areas Project was established in 2000 to identify and assess the remaining areas of natural significance on private land in the Marlborough region. Survey work on private land has been completed over most of the south Marlborough area (in conjunction with the Department of Conservation's Protected Natural Areas survey), and the Northbank, Havelock and Koromiko areas. It is now continuing in the western Marlborough Sounds area around French Pass, Okiwi Bay and on d'Urville Island. The Council is continuing to receive a positive response from landowners.

Those landowners, whose properties have been surveyed under the SNA work, have

each received a report on the ecology of their property, including significant sites, while the PNA survey results will be published early in 2004, as a single report.

North of the Wairau River, the Council has completed surveys in the Fishtail and Para Ecological Districts and is now working on d'Urville Island and the outer Sounds.

An extract from the Council's December 2003 newsletter on the survey work is reproduced on the following page. This extract entitled "What's hot in South Marlborough?" provides an overview of the types of species found by the Council and Department of Conservation ecologists carrying out the survey work.





WHAT'S HOT IN SOUTH MARLBOROUGH?

South Marlborough boasts extreme natural diversity with its complex geology, dramatic topography and climatic extremes.

“Generally, this is a harsh, dry landscape bare of forests,” say SNA ecologists, Geoff Walls and Philip Simpson. “Yet here uniquely tough Marlborough flora reach full expression.”

Natural features such as forest remnants and thriving wetlands in arid landscapes, good populations of endemic Marlborough plants including pink broom and New Zealand lilac and rare species such as fierce lancewood, shrubby tororaro and sand tussock were among significant discoveries.

Other species were located at their limits of distribution. Marlborough rock daisies, for example, were found at their northernmost coastal limit (just south of Cape Campbell) and highest ever recorded altitude (at 1350 metres). Black beech was located at its driest extreme (near Ward) and the last remnants of lowland totara in dry country near the Omaka and lower Awatere Rivers.

For PNA survey leader, Mike North, some of the most exciting finds were remnants of broadleaved and podocarp forest, which covered much of South Marlborough before being destroyed by massive fires around 600 to 800 years ago.

*“It is not only rare and endangered plants which are significant”, says Mike. “Characteristic of South Marlborough, and thus precious, is the “grey scrub” that some farmers spend a lifetime fighting.” Similarly, manuka/kanuka scrubland is distinctive; in some areas widespread but in others becoming threatened.

“Shrublands appear to have survived because under most farming regimes they will be knocked back but not destroyed, then will recover and regenerate.”

“At the time of European settlement, densely growing silver tussock covered vast tracts of the Wairau district, having replaced the original forest cover where burning had occurred. Continual burning confined large areas of tussock to the southern half of the Flaxbourne district, lower Awatere and a small part of central Hillersden”, Mike observes.

A surprise was several large tracts of cabbage trees growing on south-facing, mid-altitude hill-slopes often alongside harakeke and bracken; “a unique combination of vegetation and landform.”

Mike remarks on the black fronted tern as “probably Marlborough’s most significant bird species”. Populations alongside the Wairau River and the Awatere represent “almost one third of the world’s total”.

In parts of South Marlborough, forest birds like bellbirds, robins and wood pigeons which once would have been common, are now few and far between due to a lack of suitable habitat.

“The reception from landowners has been outstanding,” says Geoff Walls. “Those who agreed to ecological surveys have been welcoming, hospitable and interested. They have shared their time, insights and knowledge building what feels like a true partnership.”

“In all, this project is revealing the majestic natural tapestry of Marlborough and community goodwill towards restoration.”



LANDOWNER ASSISTANCE PROGRAMME

Running alongside the continuing survey work is the Landowner Assistance Programme, set up by the Council to support landowners in voluntarily protecting sites on their properties. Both the Council and central government have provided funding to help landowners in this work, in recognition of the importance

of protecting significant areas on privately owned land. In Marlborough this funding can be made available to protect sites identified by either the Council's significant natural areas survey, or the department of Conservation's Protected Natural Areas Survey of the Wairau Ecological Region.

SOME OPPORTUNITIES FOR PROTECTION

Marlborough District Council Landowner Assistance Programme

This programme is a first point of contact for farmers wanting to protect sites identified as significant in Protected Natural Area (PNA), or Significant Natural Area (SNA) surveys. Practical options for protection are assessed on the ground with landowners and a funding package developed. Information on other agencies offering protection options is also available.

Contact Nicky Eade, Marlborough District Council, 578 5249

Biodiversity Condition and Advice Funds

Established by Government to encourage the protection of indigenous vegetation and species on private land.

www.biodiversity.govt.nz/land/nzbs/land/condition.html

NZ Landcare Trust

Encourages land user groups to integrate the conservation of native species with sustainable production. Grants are available to help with relevant projects.

Contact Barbara Stuart, 03 545 0443

Department of Conservation

Staff will advise on nature conservation values.

Contact Steve Cranwell 572 9100

Nature Heritage Fund

Government administered, the fund will purchase natural areas at a fair market price if the landowner wishes to sell.

Contact Simon Moore, DOC Nelson 03 546 9335

QE II National Trust -

Open space covenants with the Trust legally protect natural features while preserving private ownership and management. Nelson/Marlborough regional representative Philip Lissaman says the Trust will look favourably at covenanting any Marlborough sites identified as significant, following Natural Areas surveys. The Trust assists with costs, including fencing and surveying covenant areas. As at 20 August 2003, there were 1762 registered open space covenants in New Zealand totalling over 64,000 hectares. Nineteen are registered in Marlborough, totalling 733 hectares.

Contact Philip Lissaman, 03 540 3442

Nga Whenua Rahui

Provides funding to help Maori owners identify and protect land with significant indigenous forest on it.

Contact Jack Hayward, DOC Nelson 03 546 9335



Other projects related to the significant natural areas project include:

- the development of a South Marlborough Native Plant Planting Guide (available through the Council or Department of Conservation in late 2004);
- research into the distribution and characteristics of the weed old mans beard in south Marlborough, and assessing the issues and options for control work to protect ecological values on private land (report available from the Council); and
- the development of practical guidelines to assist landowners manage native vegetation and habitats on south Marlborough farms.

Rarangi Beach working bee



OLD MANS BEARD IN SOUTH MARLBOROUGH

Old mans beard has been identified as a threat to many areas of ecological importance on private land in south Marlborough. A study of the history, ecology, distribution and control options of this weed was carried out for the Council by Tom Stein. Many landowners have taken part, allowing Tom to get an accurate picture of where old mans beard occurs and the level of threat it presents.

While old mans beard is well established in some areas, other areas are relatively free of the weed. It seems that old mans beard prefers more fertile moist sites, typically streams and gullies on mudstones and alluvial gravel plains, while it is rarely found on the drier and less fertile greywacke derived soils. Biological controls have been widely distributed in Marlborough and appear to be slowing the plant's vigour in some cases, however direct targeted control over several years would be necessary to eradicate the weed from specific areas or sites. The Council will be considering a range of control options in consultation with interested landowners in specific areas.



BIODIVERSITY SUMMIT

This national event was held at Te Papa in Wellington in May 2004. Over 200 people attended, including local government representatives, landowners, environmental scientists and community groups. Its purpose was to reflect on progress made towards protecting New Zealand's unique biodiversity on private land and to look at the realities and successes of this goal.

Marlborough farmer Kevin Loe featured at the Summit, explaining his experiences and new perspectives gained through his involvement in the Significant Natural Areas survey and associated landowner protection programme. The Marlborough approach of providing practical information and financial support to landowners to carry out voluntary protection was featured in a panel discussion at the Summit.

Toutouwai or robin

SUSTAINABLE COMMERCIAL FORESTRY IN THE MARLBOROUGH SOUNDS

Over time there have been large areas of the Marlborough Sounds that have been planted in commercial forestry. However, a number of things influence how well commercial forestry does in the Marlborough Sounds. Two of these include market forces, along with the cost of isolation, and the environment. Environmental issues include water quality and, given the Sounds' tourism status, landscape.

As part of a wider review of forestry policy for the Sounds, the Council decided to look at a different approach to replanting trees after harvesting of commercial forestry had finished. This involved looking at the use of different tree species, rather than re-planting a second rotation with radiata pine. The approach was based on values needed to achieve sustainable landscape and water quality outcomes.

A report has been prepared that sets out this different approach and describes a proposed Forestry Landscape Model

(FLM) for the Sounds. The FLM would mean retiring the less accessible, less productive and harder to log areas and using high value alternative species as well as radiata pine. Can this approach create a commercially viable, environmentally and socially sustainable, forestry alternative to a plantation made up entirely of radiata pine? The model suggests different species might be sited, managed and harvested in a way that would enhance their productivity, as well as the aesthetic appeal of the landscape.

Whilst offering positive results at other levels, the report's economic analysis points out that the FLM might be a little less commercially attractive than the traditional radiata pine clear-fell forestry. It also indicates that forestry, whether it be radiata pine or alternative species, becomes progressively more marginal, in the Marlborough Sounds, the more remote the site. This is because of the high cost of logging and difficulties faced in transporting logs.



The report does conclude, however, that there is no doubt that the FLM is more suited to the Marlborough Sounds environment, having greater aesthetic and environmental benefits than traditional radiata pine forestry. The overall aim of the report is to prompt discussion, and generate ideas to support decision-making and management practices for tomorrow's forests in the Sounds.

Marlborough Sounds forestry

NATIVE VEGETATION AND BIRD BEHAVIOUR - A PILOT STUDY

The issue of bird behaviour in vineyards in Marlborough has most often been linked with bird-scaring devices, particularly those that use noise to scare birds. The Council has had its share of involvement in this area of bird management, but it has also worked alongside Lincoln University on broader issues of bird behaviour.

Most recently, the Landscape Groups working on implementing the Wairau Plan Landscape Concept Plan, have been looking at how to use native vegetation in landscape enhancement work for the Wairau Plain. The two issues, bird behaviour and native vegetation, have come together for a pilot project.

During the first half of 2004, the Council worked with a Lincoln University team, to test the idea of whether or not native vegetation would attract native birds. This was in response to the damage that is done by some bird species, mostly exotic species, to grape or other high value

crops. The aim of the project was to look at reducing the population of bird species that are pests in vineyards in favour of birds that do not eat fruit or that are not considered vineyard pests. The possibility that native vegetation, rather than exotic trees and hedgerows, would host native birds and other species that don't eat or damage fruit, was explored.

Lincoln student Dale McEntee and Council staff, worked with property owners and managers to find a number of sites of native vegetation, for the survey work. Then, over a number of weeks, these sites were surveyed for the proportion of pest birds to non-pest birds present as well as the diversity and numbers of native birds and endemic species at each site. The number of pest birds present against the size of the site was also assessed. The sites with groupings of birds that are the most suitable to be located near vineyards were identified so that these could be repeated elsewhere.

The results of the survey work concluded:

"This was a preliminary study, and results should be treated with caution. It would be desirable to confirm these results by further sampling or other means to increase data.

*Low numbers of starlings (*Sturnus vulgaris*) in the study sites indicate a high level of avoidance by starlings of native*

Piwakawaka or fantail



vegetation. Numbers of blackbirds (*Turdus merula*), and song thrushes (*Turdus philomelos*) were also low. This indicates that further plantings of native trees in the Wairau Plain area would probably not significantly increase populations of these bird species.

Silvereyes (*Zosterops lateralis*) were present in large numbers in these sites and that poses a problem, as silvereyes are a significant vineyard pest species. A further study of silvereye ecology to identify factors that might limit silvereye populations is recommended. The results of this study suggest that they may not be present in large numbers in kanuka."

Copies of the report: "What are the bird populations of native tree remnant? Research into one aspect of bird management in fruit crops", may be obtained, free of charge, from the Council.

The Council is seeking feed-back from those who are interested in this issue over the next 10 months. It will then determine how, or if, the project might be developed further.

DISCHARGES TO LAND

There are many day-to-day land use activities that discharge waste (contaminants) to land, for example, the disposal of effluent from dairy sheds and piggeries, the disposal of waste in landfills and farm dumps and the disposal of agricultural processing waste. All these activities, and others, have the potential to create adverse environmental effects if they occur in a certain location or are carried out without any controls. Problems that can arise include poor surface and groundwater quality through infiltration and runoff, soil contamination, disruption to land ecosystems and odour issues. Some activities, such as the disposal of human and agricultural effluent, could have more significant adverse effects on the environment. Therefore some discharges to land need a resource

consent before they can occur. Others are permitted, but still need to meet some standards that are set out in the resource management plans.

With the way Marlborough's economy and population are growing, there is potential for an increase in the nature and amount of waste being discharged to land. Ongoing monitoring of these discharges, to see what their environmental effects are, will be very important. For some discharges the Council already carries out monitoring to see how well the existing standards or resource consents are being complied with. Two specific surveys undertaken annually are on discharges from wine processing activities and from dairy sheds. The results of the most recent surveys are described below.

WINERY WASTE SURVEY

The Council's 2004 survey was carried out during vintage, with follow up visits in response to non-compliance being undertaken where necessary. During the survey all of Marlborough's wineries and grape marc composting/storage facilities were visited. The term "winery waste" refers to winery wastewater (wastewater resulting from the wine making process, excluding human sewage) and grape marc (grape skins, seeds and pulp).

With some 35 wineries now operating in Marlborough, and a significant increase in the tonnages of grapes being harvested, there is a huge amount of waste to dispose of from the harvesting and wine making processes. Most wineries spread wastewater to land using a variety of irrigation systems including travelling irrigators, fixed irrigation lines, subsurface drainage and moveable stationary irrigators. Some wineries also discharge





Spraying winery waste water in vineyard



Winery effluent overflowing into waterway



Vineyard rubbish

Table 3: Comparison of Previous Years Survey Results

Year of Survey	Grape Marc Facilities			Wastewater Facilities		
	Compliance	Non-Compliance (Minor)	Non-Compliance (Major)	Compliance	Non-Compliance (Minor)	Non-Compliance (Major)
2004	97%	3%	0	89%	5%	6%
2003	94%	3%	3%	75%	19%	6%
2002	51%	39%	10%	72%	17%	11%

directly or indirectly into the Council's trade waste system. Common methods of dealing with grape marc include composting, spreading to land and feeding to stock.

During the 2004 survey, 31 (89%) of the wineries were in compliance at the time of the first inspection for the season although three had minor issues to address. Of the four wineries not complying with the rules or their resource consent conditions, only two were considered to be in major non-compliance.

The first non-compliance occurred because a wastewater screen became blocked and wastewater and solids overflowed into the Council's stormwater system. The discharge then entered a waterway, which flows into an ecologically important lagoon. The second issue of non-compliance resulted in wastewater from the grape receiving area being discharged into a stormwater pipe and subsequently entering an ephemeral waterway. This occurred when the

stormwater/wastewater diversion valve was changed over by an unauthorised person. In both cases action was taken to remedy the discharge. Procedures were also put in place to ensure the same problem does not arise again.

In addition to the winery inspections, 36 grape marc facilities were visited to check on compliance with rules relevant to leachate and solid waste disposal. None of these facilities were considered to be in major non-compliance at the time of the first inspection for the season. Only three had minor issues to address.

Over the past three years there has been a significant improvement in the rates of compliance with rules in the resource management plans or resource consents at the time of first visit. This is the case for both grape marc and winery wastewater facilities.

In the 2004 survey report, two matters not directly related to the discharge of winery wastewater or grape marc, were highlighted. The report noted that the disposal of general vineyard rubbish and the disposal of human waste needed attention as part of the overall management of all wastes generated from the wine industry.

It was noted during visits that there were different methods in which vineyard rubbish (e.g. packaging, plastics, pipes, spray guards and treated timber) was being disposed of. While most rubbish is appropriately disposed of in the landfill, some is being burnt on site.

Dependent on what is being burnt, this may be contrary to rules in the resource management plans or to recently released national environmental standards for air discharges.

The second issue noted was that because of the increased numbers of staff at wineries during vintage this year, combining with the end of season

tourists, there was an increased loading on human waste water disposal systems. This increased loading had resulted in human sewage overflowing from systems at a number of wineries.



Effluent irrigator

DAIRY SHED EFFLUENT SURVEY

The 2003/2004 survey was carried out between December 2003 and March 2004. The purpose of the survey is to prevent contamination of groundwater, waterways and soil; provide farmers with information about dairy effluent systems and their management; and provide the Council with details regarding

Example of serious non-compliance

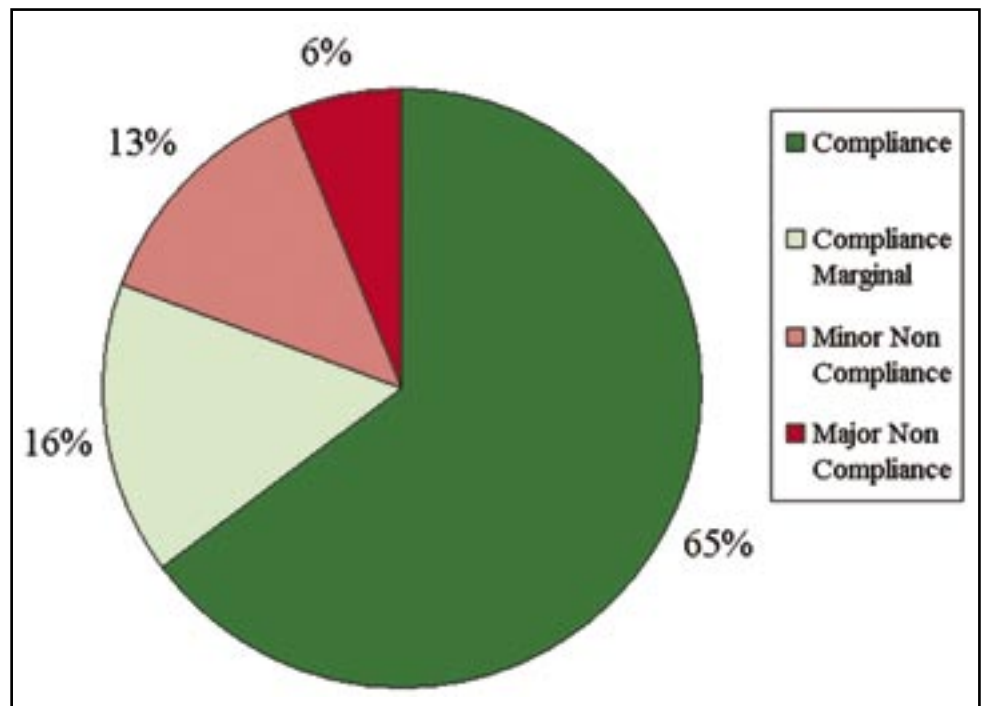


the level of compliance with resource consents or resource management plan requirements.

All 82 of Marlborough's dairy farms were visited and the performance of each dairy shed effluent system was rated using the following terms:

- **Compliance**
Full compliance with rules or resource consents.
- **Compliance (marginal)**
Complying with rules or resource consents at time of visit. The system, or its management, should be improved to ensure continued compliance.
- **Non-compliance (minor)**
A level of non-compliance with rules or resource consents, with some potential for environmental degradation.
- **Non-compliance (major)**
Non-compliance with the rules or resource consents resulting in greater potential for environmental degradation.

Figure 20: 2004 Dairy Effluent Survey Compliance Rates



The compliance rates are shown in Figure 20. The areas of major non-compliance included:

- Effluent being discharged through a pipe directly into a river;
- Overflowing of an effluent pond;
- Effluent flood irrigated onto land resulting in ponding of effluent;
- Overflowing of a sump resulting in effluent entering a creek; and
- A boom not attached to a travelling irrigator resulting in a large area of ponded effluent entering a waterway.

Most of the minor non-compliance resulted through overloading of effluent to land. Follow-up action was taken to ensure that non-complying farmers upgraded or improved the management of their effluent system. Abatement notices were issued to four dairy farmers as a consequence of the dairy effluent survey. In addition the Council has initiated a prosecution against one dairy farmer for breaking the provisions of the resource management plan and the RMA.

Overall the 2003/2004 survey showed similar levels of compliance to those noted last year. As shown in Figure 21 the compliance rates were relatively high.

Figure 21: Compliance Rates for Dairy Shed Effluent Surveys

