Indigenous vegetation and habitat

This report assesses the extent to which the indigenous vegetation, habitat objectives and anticipated environmental outcomes of the Waikato District Council District Plan are being achieved. The objectives and anticipated environmental outcomes are:

Objective

Indigenous biodiversity and the life-supporting capacity of indigenous ecosystems are maintained or enhanced.

Anticipated environmental outcomes

Improvements in quality, quantity and linkages between areas of indigenous vegetation and other native habitats.

Executive summary

Today less than 10 per cent of the indigenous forests and less than four per cent of wetlands that once dominated the Waikato district remain. Pressures leading to land clearance within the district include the reclamation of land for agricultural and horticultural purposes, for meeting the housing demands of a growing population, for industrial development and for economic gain. As in all countries, land of high value for agricultural production is the first to be cleared of native vegetation and now in New Zealand and the Waikato the trend is for more marginal land to be cleared, often for non-native forestry. It is these pressures that have led to the demise of our native ecosystems.

In order to effectively manage and preserve the native biodiversity that remains within our district, the Waikato District Council has put in place several effective provisions. These include the development of the Waikato Conservation Strategy 2004, the inclusion of anticipated environmental outcomes or 'goals' for the management of indigenous biodiversity within the district plan and the inclusion of specific district plan rules that enable the Council to meet the anticipated environmental outcomes or 'goals' through the provision of incentives for the protection of indigenous vegetation.
This State of the Environment report examines the pressures threatening our native biodiversity, looks at the current state in the management of indigenous biodiversity within the district and identifies proposed responses to address areas of concern.

Background

Large areas of forest and wetland once covered the Waikato district. Much of the upland forests, though modified by timber extraction, still exist but the wetlands and forests of the low lying ground have almost disappeared. The dominant forest species were typically kauri in the north, podocarp in central areas and a combination of rimu and tawa in the south. Variations were seen between coastal and inland areas. The major wetland areas were northeast of Hamilton and around the lower Waikato River. Indigenous lowland vegetation was modified by Maaori and then largely replaced with exotic pasture by Europeans to establish the district's social and economic foundation.

Today the main threats to forests are stock browsing and plant and animal pest infestation. Some forest vegetation clearance has occurred in recent years and clearance remains a potential threat. Drainage and riparian vegetation clearance continues to pose a threat to wetlands. Large areas of rimu and tawa forest remain on the hill country and most of it is in public ownership and legally protected. Scrub is present in some hill country areas. It is the first stage of forest regeneration and can contain threatened plant species. Most of the internationally recognized Whangamarino Wetland is also legally protected. These areas and the lower Waikato lakes together form a semi-continuous band of indigenous habitats from the north-east (Miranda) to the south-west (Aotea Harbour). Outside of this band, indigenous vegetation and habitats have been significantly depleted, particularly in lowland areas, and in some cases only small remnants remain. Few of these remnants are formally protected. These remnant lowland areas, including forest and internationally significant wetlands, make an important contribution to biodiversity. The major aquatic features are the Waikato and Waipa rivers, the lower Waikato lakes, peat lakes near Hamilton, and the Raglan (Whaingaroa) and Aotea harbours.

Reports by Leathwick et al (1995), Clarkson and Wallace (2004) and the Waikato Regional Council (1998) provide further information on indigenous habitats.

The Resource Management Act 1991 (RMA) requires the protection of areas of significant indigenous vegetation and significant habitats for indigenous fauna. Appendix 3 of the Regional Policy Statement prescribes how to assess significance in the Waikato region. Assigning a level of significance can help to prioritise the allocation of resources. The RMA is the legal framework that supports Council to promote sustainable management of resources.

Ecosystems work on the combination of numerous smaller factors combining to give an end result. A small change in one factor can have wide reaching consequences in the wider ecosystem. Sometimes making positive changes to a wide range of factors can be negated by the lack of change to a single other factor.

Piecemeal and small scale initiatives are the norm for environmental improvement programmes. The importance of public bodies and other stakeholders in coordinating activities is to ensure a holistic approach is achieved. Most of, if not all of, the factors affecting a habitat need to be addressed to achieve the maximum possible net benefit for the habitat. This is difficult to achieve as a change in one factor that benefits the habitat may not be beneficial to the person required to make the change.

Pressure

- **Population growth**

Over the next ten years the projected population growth for the Waikato district is estimated to be 18.6 per cent or 1.7 per cent per annum. Over the past 20 years the population growth has averaged 1.2 per cent, with the past five years being at 2 per cent. This latter increase has been in the non-urban areas consistent with higher demand for countryside living and rural residential sections, following the trend of people moving away from the cities such as Auckland and Hamilton. As detailed below, this trend is likely to remain relatively constant.

	2012	*2022*	*Change*
Estimated population	*65,114*	*77,331*	*12,217*
Estimated dwellings	*23,240*	*27,975*	*4,735*
Estimated urban/rural mix	*47/53*	*49/51*	

Note: These growth estimates are from our detailed population modelling prepared in conjunction with the National Institute of Demographic and Economic Analysis and includes base information from the 2006 census.

The census Usually Resident Population (URP) counts show that Waikato district is in the top ten territorial authority areas with an increase of population from 2006 to 2013 of 10.1% (Statistics New Zealand). The URP counts as detailed below show that the estimated population count for the district in 2013 is below the 2012 estimate and would not have taken into account the boundary change with the creation of Auckland Super City (incorporation of Franklin district).

	2001	2006	2013
Usually resident population	**51,843**	**57,585**	**63,378**

- **Land clearance and fragmentation**

There is evidence to indicate that over 50 per cent of remaining indigenous cover is classified as threatened and much of this land is not legally protected.

Of our remaining indigenous vegetation much is modified and/or fragmented and as a result is heavily impacted by the loss of seed dispersal mechanisms and by edge effects where invasive plant pests are able to infest the areas.

- **Economic growth**

The major impact to indigenous vegetation and habitat due to economic growth is competition for resources.

The Waikato district is included in one of the larger regional economies in New Zealand with increasing demands on its natural and physical resources. Economic pressures on the habitat include the growth of residential areas as populations increase, demand for resources and services from outside the region, pressure to convert native habitat to other uses, increased pressure on the coast and development of transport infrastructure.

The Waikato Regional Council's Regional Policy Statement (RPS), regional and coastal plans all affect how the local councils undertake economic development with an aim to ensure that economic growth is managed to ensure environmental problems are minimised.

Tourism is second only to the dairy industry in terms of foreign exchange earnings and the image of New Zealand as 'clean and green' is still very much alive abroad if somewhat on the wane internally. The importance of maintaining and improving native habitats to maintain and improve the tourism draw New Zealand has to offer is a crucial factor to consider when undertaking economic development.

Waikato District Council has a number of mechanisms for making economic development decisions, including the District Growth Strategy, Future Proof and the Long Term Plan.

- **Pollution**

The major impact to indigenous vegetation and habitat by pollution is the contamination of land, air and water through land use intensification, industry and farming practices.

The main sources of pollution within the Waikato district are land use intensification and farming practices.

A primary source of pollution that is avoidable to some degree is effluent from dairy farms entering our water courses. Management methods and application rates to land are controlled by Waikato Regional Council; however there are measures that could be put in place at a district level to assist in managing this problem.

Industrial and domestic waste management, which contributes to pollution and agricultural practices both in the arable and livestock sectors, needs to be refined to minimise environmental impact. Levels of the heavy metal cadmium have been rising in Waikato soils due to top dressing and based on recent sampling, it is estimated that 11 per cent of Waikato's pastoral soils and 17 per cent of Waikato's horticultural soils already exceed 1mg/kg soil cadmium. For horticultural soils, this would represent approximately 1775 hectares of land and for pastoral soils (sheep, beef and dairy land) this would represent about 157000 hectares. Within the pastoral soils sample set, all soil samples that have so far exceeded the 1mg/kg agricultural guideline have been from dairy farms (Waikato Regional Council, Report: TR 2005/51). The soil contaminant standards as set by the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil) Regulations 2011 have lowered the allowable levels of cadmium in soil in rural residential land use to 0.8mg/kg. As such, this contamination issue is posing a problem for subdivision and some land use applications within the district.

- **Invasive pest plants and animals**

Waikato District Council works in conjunction with the Waikato Regional Council and the Department of Conservation (DOC) to manage plant and animal pests that destroy our native flora and fauna.

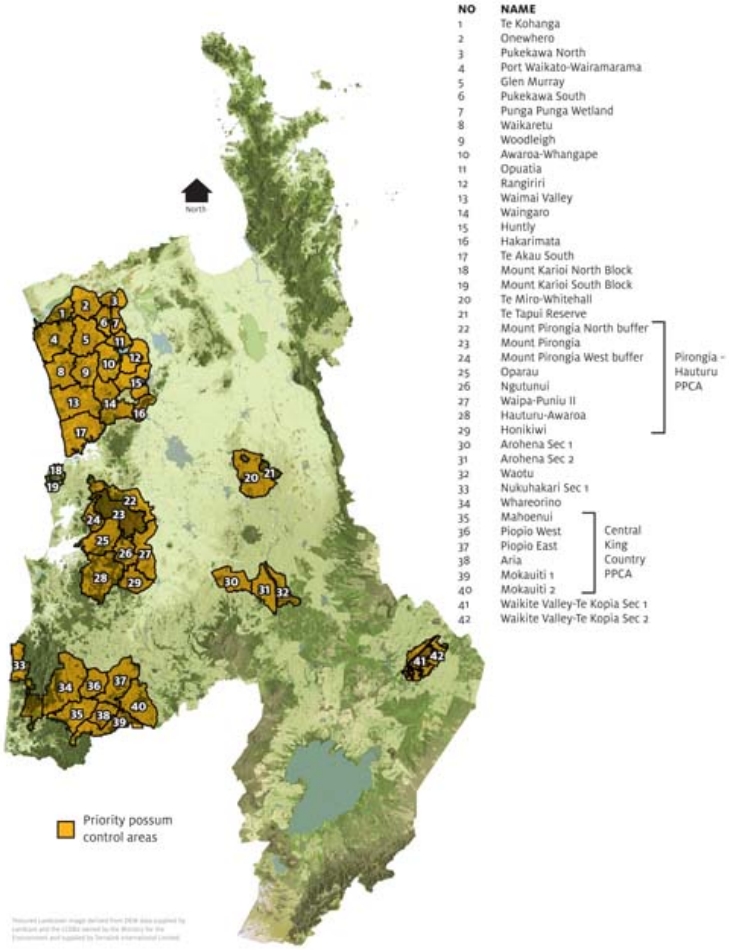
In the Waikato region, there are around 60 pest plants that are recognised by the Waikato Regional Council. These are categorised into three main types of threat and control:

- Eradication pest plants which are considered important enough pests to require control by the regional council wherever they are found.
- Containment pest plants that have to be eradicated by the landowner of the property they are found on.
- Potential pest plants that are of concern but have no enforcement rules for control.

Plant pest control needs to be rationalised into long or short term timeframes. In the short term, a pest may need to be controlled for a specific reason. Long term approaches allow for certain pest plant species to be left uncontrolled, for example to allow a native forest canopy to develop over a shade intolerant pest species – which will eventually eradicate all shade intolerant pest plant species in the long term.

Animal pests are considered by the regional council on the basis of being a production, public, environmental or potential threat. The management categories for plants are not used for animals, and instead each animal has a management programme description which describes how long term objectives for that animal are to be achieved.
The Waikato Regional Council and DOC are the main sources of data on invasive plants and animals, and pest control strategies are currently in place as highlighted in Figure 1.0a and 1.0b.

Figure 1.0a: Priority possum control areas for the Waikato region

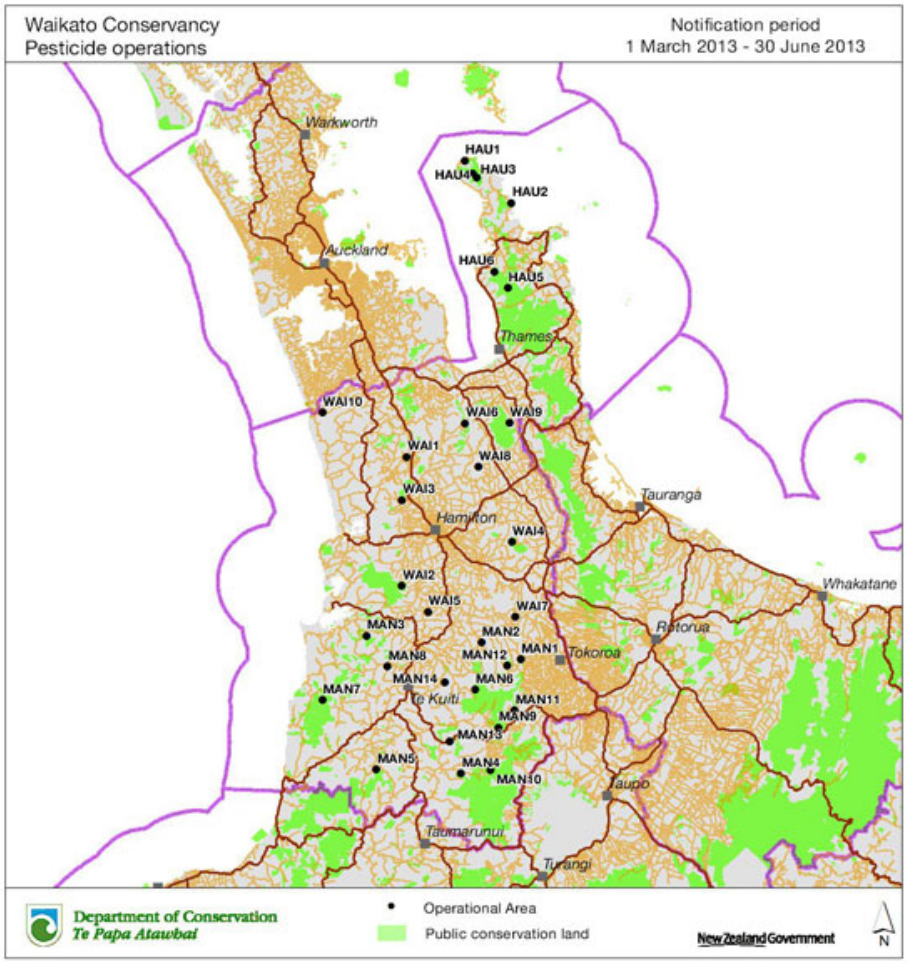


Source: Waikato Regional Council

Invasive plants and animals are not only destroying habitat but are also a threat to agricultural and other economic productions in New Zealand. The Biosecurity Act 1993 was established to keep pests out of New Zealand and to manage pests that are in the country, with DOC and the regional councils having the major responsibilities for managing the removal of pests within the country. Recent revisions have been made to the Biosecurity Act further defining the way in which pest control must be managed.

The DOC lays pesticides at staged intervals across land which they own to try to control invasive pests as detailed in Figure 1.0b below.

Figure 1.0b: Department of Conservation pesticides operations map



Source: Department of Conservation

Plant pest control and native habitat regeneration are closely linked and this is still a developing field of expertise. Attitudes can change with a good example being that in the past crack willow was seen as prohibitive to native vegetation rehabilitation, where as now the shade offered by crack willow is seen as beneficial as it allows native seedlings to grow without having to compete against shade intolerant weeds.

Further collaboration between Waikato District Council, other governing bodies, private landowners and community groups would be beneficial in the management of invasive plant and animal pests in the long term.

- **Lack of education**

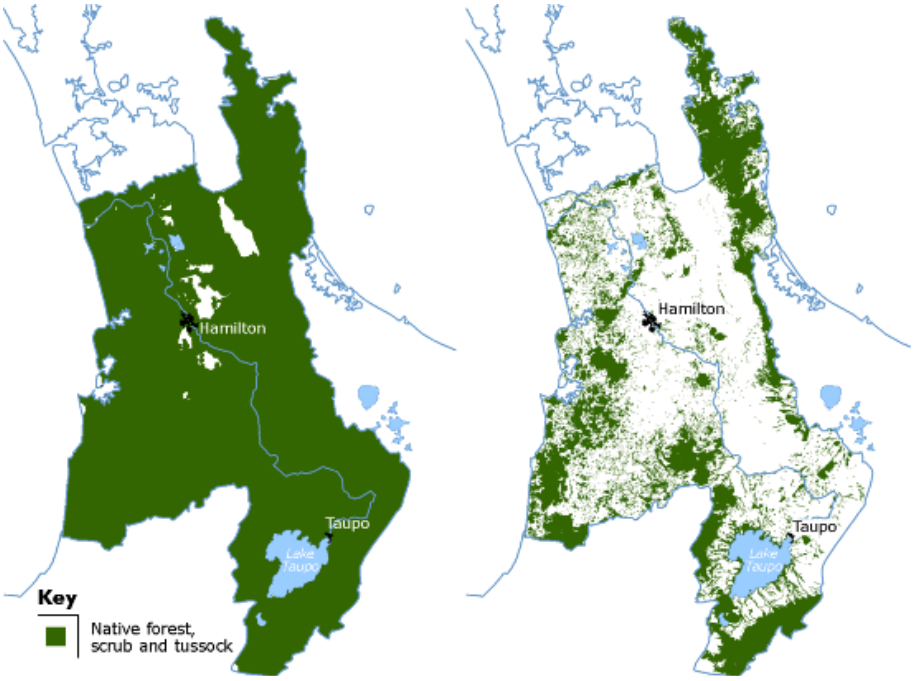
The major impact to indigenous vegetation and habitat through lack of education is the loss or impairment of habitats due to a lack of knowledge. People are often unaware of how to identify or eradicate invasive weed and pest species, do not understand the necessity to fence off waterways to create stock exclusion zones, are unaware of the effects of fragmentation and without any incentive to do so, have little motivation to undertake restoration projects.

Additionally modern society is driven by consumerism and there is worldwide pressure to show social status through high levels of resource consumption. Simple examples of excessive consumerism and unsustainable resource use include the luxury automobile industry, international air travel, meat consumption levels and the continued use of throw away plastics. Consumerism is championed by the retail industry and a lack of education and awareness of the consequences, short term thinking and simple denial by the consumer exacerbates the problem.

State

Indigenous vegetation cover

Figure 1.1: Current land cover map showing loss of indigenous vegetation since 1840

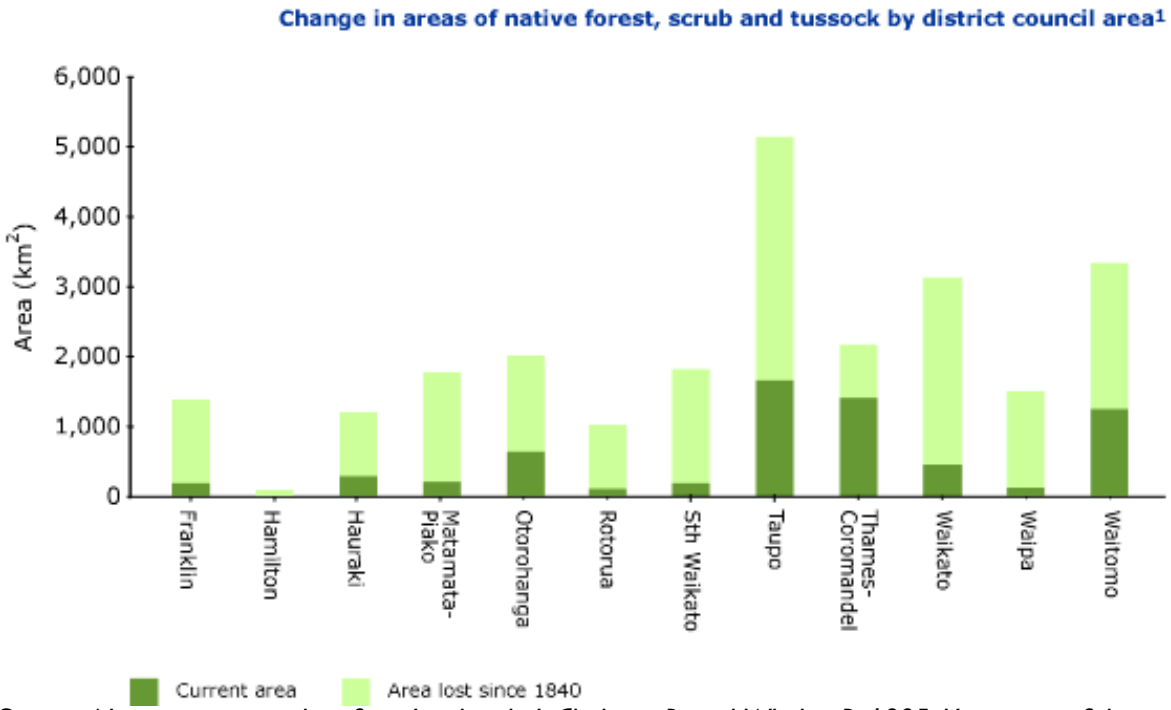


Source: *Historic (around 1840): Regional Indigenous Vegetation Inventory (1840)*[1]*.*
Current: Land cover database[2]

1. *Leathwick, J. Clarkson, B. and Whaley, P. 1995: Vegetation of the Waikato Region: Current and Historic Perspectives. Landcare Research Contract Report LC9596/022. Landcare Research, Hamilton.*
2. *Terralink International Limited. COPYRIGHT RESERVED.*

Figure 1.2: Breakdown of area of indigenous vegetation lost within each district

The graph below shows the change in the amount of native forest, scrub and tussock within each district since 1840.



Source *Native vegetation data from Leathwick, J. Clarkson, B. and Whaley, P. 1995: Vegetation of the Waikato Region: Current and Historic Perspectives. Landcare Research Contract Report LC9596/022. Landcare Research, Hamilton.*

In the Waikato district less than 10 per cent of our original vegetation remains. Waikato District Council has recognised the requirement to preserve the remaining indigenous vegetation within our district and have rules within the district plan that restrict the clearance of significant areas of native vegetation. Subject to specific criteria, rules and exemptions, clearance exceeding 1000m2 is generally restricted in a Landscape Policy Area and Conservation Area and clearance exceeding 3000m2 is restricted in all other zones.

Since 2009, Waikato District Council has granted six resource consents for vegetation clearance. Granted consents average two per year and no trend indicating an increase or decrease in the number of granted consents over time appears evident.

- **Conservation lot subdivisions**

A primary mechanism for the protection of indigenous vegetation within the Waikato district is through planning provisions. Rules within the district plan allow landowners to gain additional titles through the protection of indigenous vegetation that meet specific criteria set out in the district plan rules, being Rural Zone Rules 22.9 (Franklin section) and 25.73 (Waikato Section) and Coastal Zone Rule 26.73 (Waikato Section).

The Rural Plan Change 14 which raised the requirement for protection from 0.5ha to 1.0ha and introduced a scoring system to identify the intrinsic value of indigenous areas. This influences a landowner's entitlement for gaining new titles through the protection of indigenous vegetation.

Figure1.3: Number of conservation features created by ward within the Waikato district, 2010 to 2012

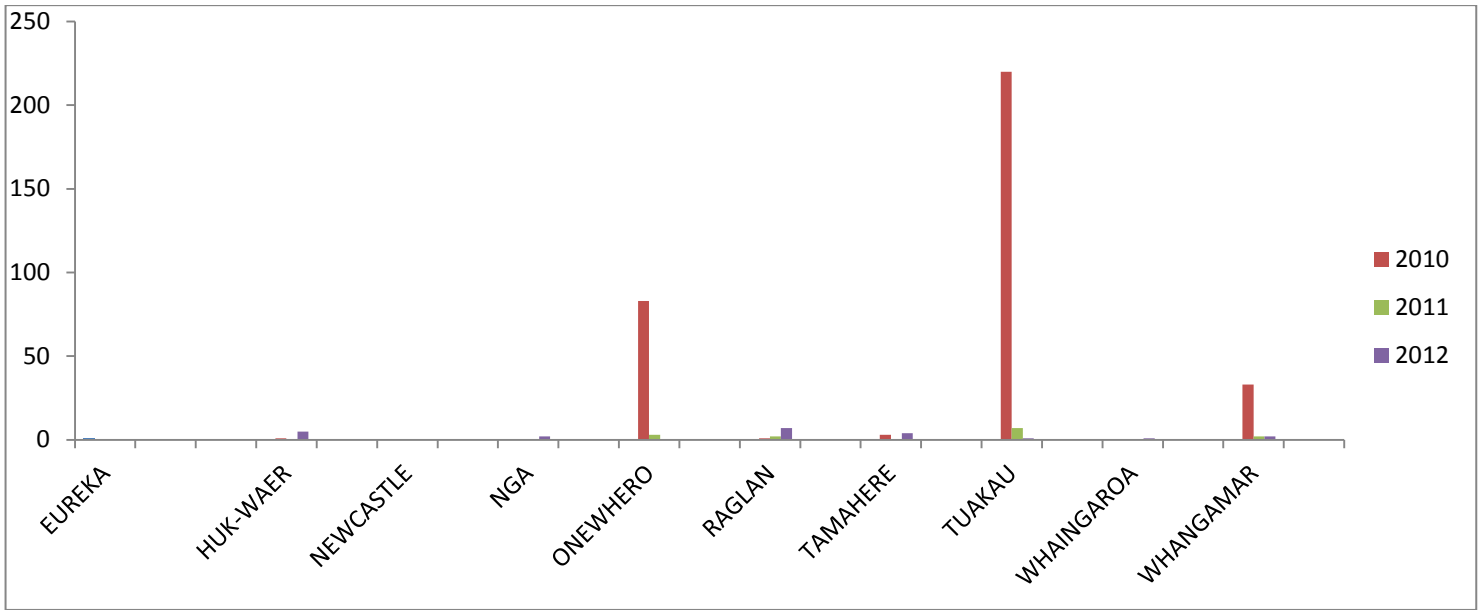
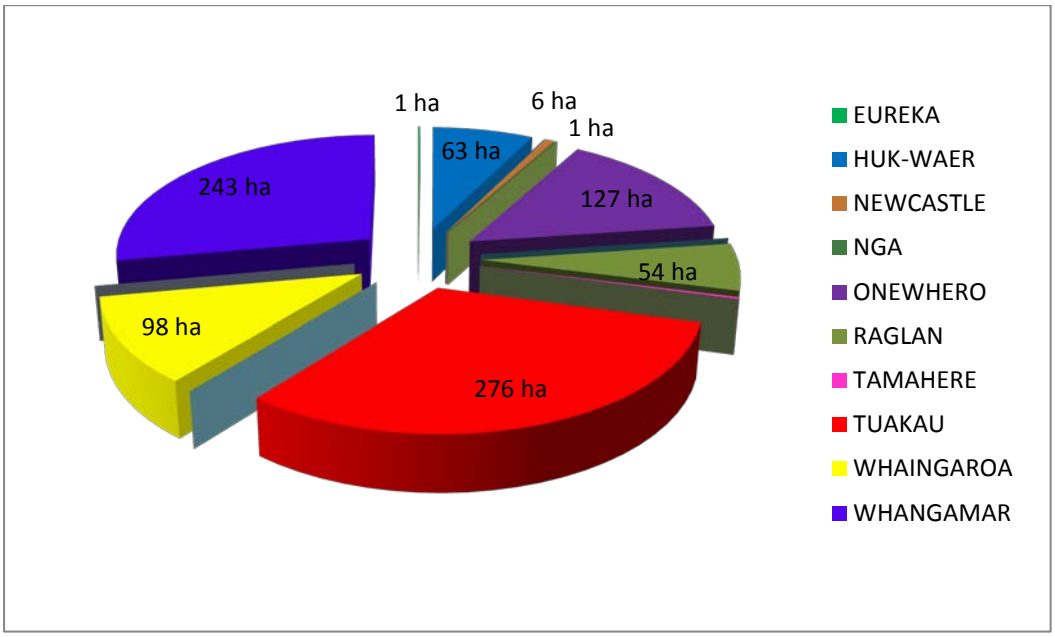


Figure 1.4: Number of conservation features and area in hectares protected per ward within the Waikato district



Ward	Number of conservation covenants
EUREKA	3
HUK-WAER	16
NEWCASTLE	5
NGA	3
ONEWHERO	86
RAGLAN	38
TAMAHERE	14
TUAKAU	227
WHAINGAROA	39
WHANGAMAR	46
Total covenants	**477**

The Waikato district has a total of 477 registered conservation covenants protecting approximately 872ha of indigenous vegetation. Of those protected, 372 or 78 per cent are less than 2ha in size. All features less than 2ha in size are located in the Franklin section of the Waikato district.

It is apparent that there was a spike in areas protected in the Franklin section of the Waikato district in 2010 as shown in Figure 1.3. This can be attributed to the restructuring of the pre-existing councils. During this restructure, the southern portion of the Franklin district became a part of the Waikato district. Residents seemed unsure of whether the right to gain titles through the protection of conservation features would be retained and so many applied for conservation lot subdivision throughout this period.

As shown in Figure 1.4, the majority of land protected within the Waikato district is within the Whangamarino and Tuakau wards. The Tuakau ward however has a total of 227 conservation covenants comprising the area in protection, while the Whangamarino ward has only 46 conservation covenants. The conservation features within the Tuakau ward are therefore much smaller in size than that of the Whangamarino ward and are therefore more likely to be fragmented and subject to edge effects. This is evident when mapped spatially as shown on the map below (please follow provided link). It is clear from the visual representation of the features that the areas within the Tuakau ward are fragmented pockets of native vegetation that would require a much more concerted management effort than those on a larger scale and may also be restricted in their seed dispersal mechanisms.

..\Conservation Covenant.pdf

Figure 1.5: Conservation/environmental lot subdivision rules of the Waikato District Council District Plan

	Waikato Section		**Franklin Section**	
	Operative Rules	**PC2**	**Operative Rules**	**PC14** (The number of additional lots is based on the biodiversity significance of the feature being protected).
Minimum area of feature to be protected	2ha	2ha	0.5ha	Critical - 0.5ha High - 0.5ha Moderate - 1.0ha
Number of additional lots per area of feature to be protected	1 lot – 2ha to <5ha 2 lots – 5ha to <10ha 3 lots – 10ha to <20ha 4 lots – 20ha or more	1 lot – 2ha to <5ha 2 lots – 5ha to <10ha 3 lots – 10ha or more	1 lot – 5000m to 8.9ha 2 lots – 9ha to 15ha and so on, on the basis of 1 extra lot for every 6 hectares of bush/feature protected	Critical - 2ha High - 3ha Moderate - 7ha

Given the findings of our monitoring programme, in which those areas that are 0.5ha in size display a lower level of compliance and require a more concerted management effort to maintain due to edge effects and fragmentation, it is our recommendation that the rules of the Waikato section of the district plan be extrapolated throughout the district.

How do we manage the covenanted areas?

Waikato District Council has a monitoring system in place to check that landowners are remaining compliant with those obligations set out in their covenant agreement. The current target is to visit 100 conservation features per year.

Over the previous two years since amalgamation, monitored consents have averaged 105 per annum. These have been limited to the northern Waikato area only.

We currently use a ranking system for conservation features based upon criteria such as size class, shape factor, understory growth and weed and pest management efforts to give a feature a ranking of Poor, Fair, Good or Excellent.

Overall those features within the former Franklin section of the Waikato district that have been monitored rate as fair/good. Those that rate lower are generally of small size or are narrow in shape and are often isolated in nature from other native vegetation. These areas have a higher edge area to volume ratio and are therefore more readily exposed to the effects of invasive weed species and external influences and require more time and money to manage.

Over the past two years (since amalgamation) there have however, only been two major non-compliances, one in relation to *Tradescantia* (Wandering Jew) which was inhibiting regeneration within the feature and the other in relation to stock being allowed to enter a protected area, trampling all new growth and preventing regeneration of the feature. The Council has worked with each of the landowners to resolve both of these matters.

Overall the Council finds that education and onsite advice to landowners is the most effective method of achieving results in terms of maintaining and enhancing the integrity of the protected features within the district. To carry out this role effectively and to implement an optimal monitoring programme of bi-annual inspection of features, it is recommended that a full time staff member be engaged in this position. To fund such a position however, the monitoring of the features would need to be cost-recoverable. This is a possibility under section 36 of the RMA and it is our view that this should be further explored. The person engaged in this role could make up a part of the recommended Waikato District Council Environmental Task Force team.

With regard to those that relate to feature size, PC2 and PC14 respectively take steps to remedy this issue.

Significant Natural Areas (SNAs)

SNAs are recognised under section 6(c) of the RMA as a matter of national importance ("areas of significant indigenous vegetation and significant habitats of indigenous fauna"). Waikato Regional Council is currently commissioning a desktop analysis and report to determine Significant Natural Areas within the Waikato district. The report on desktop analysis is scheduled to be completed in June 2015.This report and will assist in informing the district plan review.

Esplanade or reserve area

In accordance with Section 230 of the RMA, where any allotment of less than four hectares is created when land is subdivided, an esplanade reserve 20 metres in width shall be set aside from that allotment along the mark of mean high water springs of the sea, and along the bank of any river or along the margin of any lake, as the case may be, and shall vest in accordance with section 231.

Pollution incidents

The Waikato River is much cleaner than in the 1960s when sewage and industrial effluent was regularly discharged into the river. It is not pristine but initiatives such as the Waikato River Clean-up fund and riparian restoration efforts are current trends targeted at improving water quality.

Please refer to Figure 1.6 for a general overview of trends relating to Waikato River water quality.

Air quality is generally good in the Waikato, but contaminants are released into the air from human activity and natural events. Human activity includes localised issues from industry and power generation, global issues resulting in ozone depletion and climate change as well as motor vehicle and domestic heating issues mainly in the larger urban areas. Geothermal activity, respiration and decomposition are all natural pollutants with volcanic eruptions being a major potential pollutant source.

In the Waikato livestock are responsible for a much higher percentage of the total greenhouse gasses produced than in other countries where fossil fuel use is the major contributor. Livestock are also implicated in high nutrient levels in the environment and a cause for poor water quality. Additionally the high level of peat land being drained leads to increased levels of carbon dioxide in the atmosphere as drained peat becomes oxidised.

The accumulation and disposal of waste products is an ongoing pollution issue that affects indigenous vegetation and habitat.

Figure 1.6: Water quality trends in the Waikato River between 1992 and 2011 (based on methods in Environment Waikato Technical Report 2008/33)

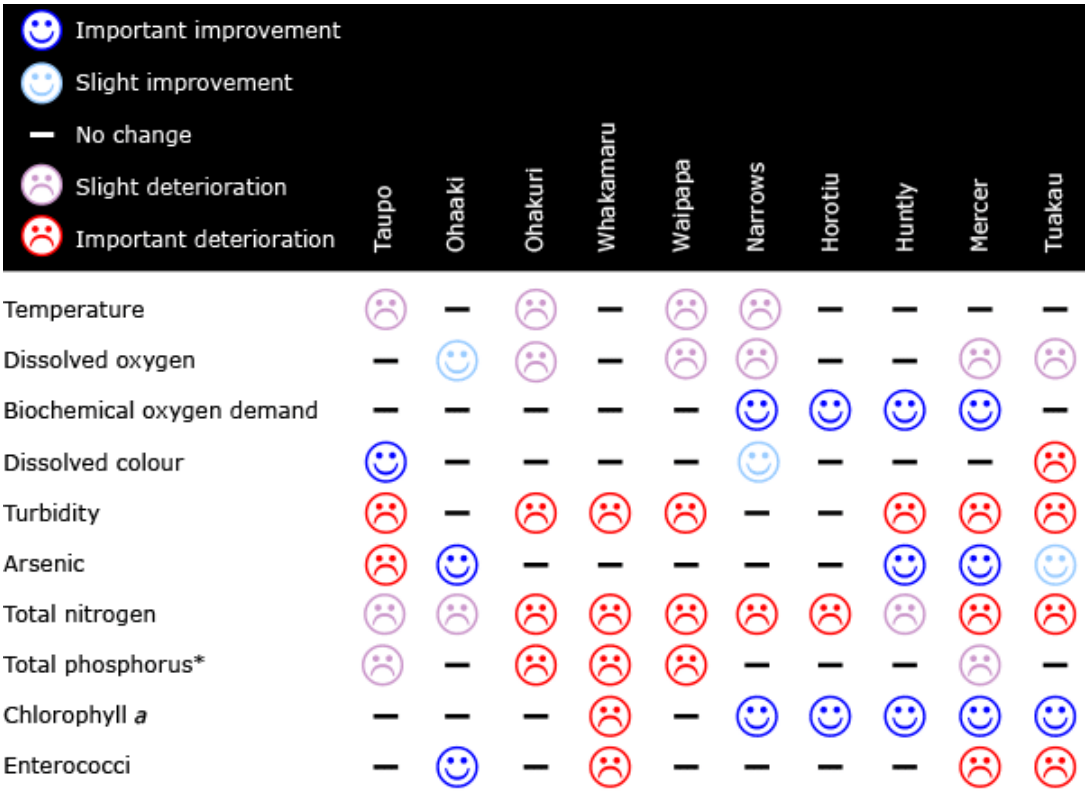


Table 1: Water quality trends in the Waikato River between 1992 and 2011
(based on methods in Environment Waikato Technical Report 2008/33)

Turbidity is for the period from 1995 to 1998. Results for total nitrogen and total phosphorus at Taupō are from NIWA's site at Reids Farm.
** Under review*

Flow-adjusted data, n ≤ 240
LOWESS span 30%
Seasonal Kendall slope and test
Significance: p < 5%

Education initiatives

- **Educational planting programme**
  Waikato District Council has an educational planting programme with schools in the district which is run in association with Ecosourced Waikato and Forest Flora. Local school children learn about the restoration of native habitat and take on a small area of riverbank to weed control and plant with native species.

- **Beachcare programme**
  Waikato District Council runs a beachcare programme in partnership with Waikato Regional Council and the local communities. This programme involves restoring dune habitats and creating designated access to our beaches, with the help of local volunteers and iwi.

- **The Waikato District Conservation Strategy**
  The Waikato District Conservation Strategy 2004 (WDCS) outlines the Council's approach to protecting remaining indigenous vegetation. The WDCS presents the Council's approach to fulfilling its RMA obligations and to implementing the New Zealand Biodiversity Strategy at the local level.

  Emphasis is placed on a lead by example approach by incorporating environmental objectives into the Council's service delivery functions, improving biodiversity on Council-owned land through restoration and maintenance works, and improving biodiversity on private land through education and incentives.

Response

- The Council will seek to work in partnership with landowners, interest groups and other agencies to further investigate significant indigenous habitats with a view to reconsidering priorities and management methods. This approach is incorporated into the Waikato District Plan. The Council sits on a number of environmental committees including RiverCare (a riparian restoration charity) and has agreements with stakeholders, eg Lakes MOU.
- Improved collaboration with other agencies in pest management initiatives.
- The Council works with Waikato Regional Council on pest control issues. Further collaboration opportunities exist, especially via roading operations along road corridors.
- Auditing all the Council's reserve and habitat assets with the aim of creating corridors of environmentally and recreationally 'useful' areas and disposing of land that has no use to the Council is an ongoing project that the Council is undertaking.
- Enhancement, maintenance or creation of linkages between ecological areas in the district or along the margins of lakes, rivers and the coastline, including indigenous forests on hill country from Pirongia to Miranda, Waikato and Waipa rivers and associated wetlands, lakes, Raglan Harbour (Whaingaroa), Aotea Harbour and their tributaries is also being undertaken on an ongoing basis. Waikato District Council's Project Development Officer works with private and public stakeholders to improve linkages.
- Improved monitoring framework and data capture/analysis, including the inclusion of compliance rating within the events of the monitoring application for ease of reporting.
- Establishment of Environmental Task Force team within the Council to address environmental issues across the board. This will improve efficiencies and coordinate effort when addressing environmental issues in the district and could potentially work in partnership with outside resources. This team could also be involved in sourcing outside funding for environmental projects in the district. Staff already exist that can form this team, which could include members from Planning, Monitoring and Service Delivery teams.
- Establishment of a full time, cost-recoverable role for monitoring protected conservation features within the district. This person could also sit on the Environmental Task Force team.
- Review permitted activities rules within the district and further develop policies regarding modification or removal of indigenous vegetation.
- Extrapolate conservation lot rules from the Waikato section of the district plan across the entire district to reduce fragmentation and edge effects.
- Encourage riparian planting to protect waterways (Waikato District Council's Project Development Officer is the chair of RiverCare).
- Improved education of the community and stakeholders to encourage effective restoration, management and protection of indigenous vegetation undertaken by monitoring staff and others as opportunities present themselves.
- Continued improvement for standards of wastewater treatment, pollution reduction and contamination, recycling and reusing, and finding synergies with other programmes to combine effort. The Council has a Waste Not group active in this area.
- Continued encouragement of environmental education in the form of grants and support, dissemination of environmental information and the production of signage. Minor grant scheme.

Note: Information available to assist with this work includes an indigenous vegetation cover database, the Land Environments New Zealand database and GIS information at Waikato District Council and other sources.

District Plan rules

Vegetation clearance

The Waikato section of the district plan contains rules restricting vegetation clearance within each zone of the district where relevant.

Vegetation clearance of up to 1000m^2 is permitted in a Landscape Policy Area or Conservation Policy Area where the clearance is for a building platform for an approved building; or to gather plants for Maaori custom. Up to 3000m^2 of vegetation can be removed if the vegetation is dangerous or a fire hazard to allow for the construction of conservation fencing or for the maintenance of production pasture where the land has been used for production in the previous five year period and the removal is limited to Kanuka, Manuka and tree ferns.

Up to 3000m^2 of vegetation clearance is permitted in the Pa Zone, Rural Zone, Coastal Zone, Country Living Zone and Industrial Zone subject to meeting specific criteria and where the council has verified that the vegetation is not significant.

We have granted six resource consents for vegetation clearance since 2009. Overall the number of consents granted for indigenous vegetation clearance remains constant, averaging two per year, with the exception of 2011 where no consents for vegetation clearance were granted.

The zone rules generally permit clearance of indigenous vegetation for production forestry, harvesting timber under a sustainable management plan, for the removal of dangerous vegetation or a fire hazard, to allow for the construction of conservation fencing, for the maintenance of production pasture, or for a building platform up to 3000m^2 where the Council has verified that the vegetation is not significant.

There is a flaw in these rules in that a permitted activity should not require a specialist report to be considered as such, and the rules governing vegetation clearance within each of these zones should therefore be considered controlled activities.

Another issue with the permitted activity rule status is that it is very difficult to gauge or monitor permitted activities and as such the Council has no real understanding of the cumulative loss of indigenous vegetation within the district allowed by these rules.

It is recognised that the Significant Natural Areas project will assist in the identification of areas of significant vegetation within the district and through the introduction of a rule framework for these areas through the Waikato Regional Council's RPS.

It is recommended however, that the Council undertakes a bi-annual assessment of the Land Cover Database to review vegetation clearance in each period and to determine whether resource consents were required and sought, and to identify the cumulative loss of indigenous vegetation under the permitted activity rules within the district. This in itself is a fairly comprehensive assessment and should be undertaken by the recommended Waikato District Council Environmental Task Force.

The Franklin section of the district plancontains no rules governing vegetation clearance. Clearly, there should be some governance on the loss of indigenous vegetation within the district and accordingly it is recommended that, taking into account the above recommendations, the rules of the Waikato section of the district plan are extrapolated across the entire district for consistency.

Conservation lots

The Waikato and Franklin sections of the district plan both contain rules surrounding the creation of environmental lots through the protection of significant indigenous vegetation on private land. Please refer to table below for a comparison of lot entitlements between the two sections of the district plan and the relevant Plan Changes (PC) affecting these entitlements.

Conservation / environmental lot subdivision rules

	Waikato Section		**Franklin Section**	
	Operative Rules	**PC2**	**Operative Rules**	**PC14** (The number of additional lots is based on the biodiversity significance of the feature being protected).
Minimum area of feature to be protected	2ha	2ha	0.5ha	Critical - 0.5ha High - 0.5ha Moderate - 1.0ha
Number of additional lots per area of feature to be protected	1 lot – 2ha to <5ha 2 lots – 5ha to <10ha 3 lots – 10ha to <20ha 4 lots – 20ha or more	1 lot – 2ha to <5ha 2 lots – 5ha to <10ha 3 lots – 10ha or more	1 lot – 5000m to 8.9ha 2 lots – 9ha to 15ha and so on, on the basis of 1 extra lot for every 6 hectares of bush/feature protected	Critical - 2ha High - 3ha Moderate - 7ha

Note: PC14 Environmental lots are only provided for in the Hunua Rural and Southern Rural Management Areas.

Given the findings of our monitoring programme, in which those areas that are less than 2.0ha in size, display a lower level of compliance and require a more concerted management effort to maintain due to edge effects and fragmentation, it is our recommendation that the rules of the Waikato section of the district plan be extrapolated throughout the district.