

Protection of Native Bush by Waikato Dairy Farmers: a Cultural Perspective

Mairi Jay, Department of Geography, University of Waikato

Introduction

Conservation of biodiversity has become widely recognised as an issue of increasing importance for environmental management and sustainable development (IUCN, 1991; Jeffries, 1997; Peck, 1997). The publication of the New Zealand Biodiversity Strategy, *Our Chance to Turn the Tide*, in February 2000 (Department of Conservation, 2000), marked a recognition that protective management of indigenous vegetation and indigenous habitats is a necessary element of biodiversity conservation in New Zealand. The Strategy puts forward a series of goals, of which Goal Three is,

"Halt the decline in New Zealand's indigenous biodiversity: maintain and restore a full range of remaining natural habitats and ecosystems to a healthy functioning state, enhance critically scarce habitats, and sustain the more modified ecosystems in production and urban environments; and do what else is necessary to maintain and restore viable populations of all indigenous species and subspecies across their natural range and maintain their genetic diversity' (Department of Conservation, 2000:18).

Protection of native vegetation on private land is particularly important for biodiversity conservation because most of the conservation land in public ownership is 300m or more above sea level. It is thus representative of higher altitude ecosystems. Almost all New Zealand's lower altitude areas are in private ownership. Maintaining current levels of indigenous biodiversity means, in practice, persuading many of the nation's farmers and forest landowners to retain or restore native bush and wetlands on their land.

Norton and Miller (2000) have argued that protection of native biodiversity within New Zealand's production landscapes must involve better integration between protection and

production land uses, using a mix of incentive mechanisms for landowners, and a mix of management approaches (e.g. restoration plantings, remnant management, weed and pest control, use of native species for commercial and amenity plantings). But the success or otherwise of biodiversity conservation on private land will depend, to a large extent, on whether landowners can be motivated to conserve and manage native or mixed forest vegetation on their own land.

From a conservation viewpoint, Waikato region dairy farmers are a significant group to study because:

- As shown in Figure 1, the region's ecology has been almost wholly transformed in post-European times, from a mosaic of tussock grassland, scrub and native forest, to pasture. The region stands as an empirical example of past and ongoing loss of biodiversity, consequent on agricultural development.

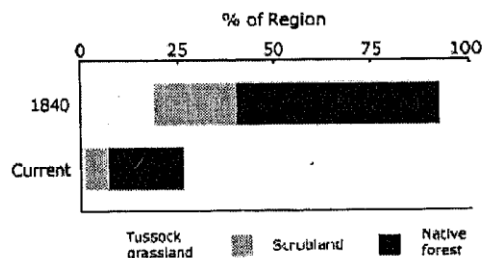


Figure 1: Percentage of the Waikato Region covered in native forest, scrub and tussock in 1840 and today
Source: Environment Waikato

- Land values are high in relative terms, and farms are valued on the basis of their production of milk-solids. Income may be \$2,000 to \$5,000 per hectare per annum. There is a significant opportunity cost for farmers who choose to keep potentially productive land for conservation purposes.
- Some of the remaining areas of remnant native forest and wetland are on private land (Burns, 2000; Cruickshank, 1989; Denyer, 2000). These include areas that could potentially be developed for dairy production

(e.g. remnant stands of kahikatea forest). They invite the question, 'Why have they not been converted to production agriculture?'

The theoretical perspective for this paper is a cultural one. Culture is important to biodiversity conservation because of the way it shapes how people think, feel and relate toward their environment (Anderson, 1996; Sahlins, 1976; Strang, 1997). The non-material aspects of culture, which include beliefs, aspirations, values, knowledge, and the like, provide motivation and meaning for why people do things. While the material aspects of culture, such as technology and physical infrastructure (e.g. food storage, roading and transport), limit, extend or otherwise shape the way that people use their environment, cultural values and beliefs influence the choices that people make, and what they consider to be important or unimportant.

Like many other parts of the world that support Western-style commercial agriculture, the dairy industry of Waikato seems to show a collision between economic and ecological sustainability. Numerous reports and publications testify to the drastic impact of dairy farming on the region's environment (Boothroyd, 2000; Burns, 2000; Environment Waikato, 1999; Van t, 2000).

Research methods

The research methodology comprised three main methods: participant observation of five farm families over nine months of the dairy farming year; in-depth interviews with ten 'conservation' farmers; and a questionnaire survey of a random sample of 130 dairy farmers. Preliminary results only are available for the questionnaire survey.

The families involved in the participant observation research were average to above average in terms of milk production. They are here termed 'conventional' in the sense that they had no native bush on their farms, and no particular concern or interest in protecting native bush. The research involved regular monthly visits to each family, lasting three to four hours.

The ten 'conservation' farmers had withdrawn land from production and actively managed it for protection of native forest (or, in two cases,

wetland). Five had covenanted bush on their property under a Queen Elizabeth II Trust conservation covenant. The remaining five had fenced off their bush or wetland, but not placed it under covenant. Interviews involved both partners and lasted two to three hours.

The questionnaire survey involved a sample of individuals who identified themselves as 'dairy farmer' in the Karapiro, King Country, Hamilton West, and Port Waikato electoral rolls, selected at random. A letter was sent to prospective respondents beforehand, with an explanation of the research, and a request for an interview. It was followed within a few days by a telephone interview. Of the 164 people contacted, 34 refused to be interviewed (a 21% refusal rate). Comparison of farmers in the sample with the dairy statistics for South Auckland indicated that the sample was biased in favour of farmers who were above average in terms of milk production.

Results and Discussion

Table 1: Number and per cent of dairy farms reported with native bush

All farms	No.	
Farms with bush	56	43
Farms without bush	73	56
Total	129	99
Not stated/missing	1	1
Total	130	100

As indicated by Table 1, 43 per cent of farmers reported that they had some native trees or scrub on their farm.

Table 2: Number and per cent of dairy farms with bush having productive potential

All Farms	No.	%
Farm has bush with potential	30	23
Farm has bush with no potential	26	20
Total farms with bush	56	43
Has no bush	73	56
Not stated/missing	1	1
Total	130	100

Table 2 indicates that of the farms with bush, in more than half the bush had productive potential. Thus, it is not the case that bush remains on areas that are too steep or too wet for livestock production.

The survey results indicated that just over half the farmers with bush allowed access by stock, and thereby gained some productive benefit from their bush. However, 25 farmers (19% of the total sample of 130) had bush that was actively protected from stock.

So why are there still remnants of kahikatea forest or other native bush or wetland within the region? A number of studies have indicated the importance of values and attitudes for farm management practices and conservation of native bush (Cocklin and Doorman, 1994; Fairweather and Keating, 1994; Parminter and Perkins, 1997; Saunders, 1996; Wilson, 1992).

Fairweather and Keating analysed the responses of a sample of 50 Canterbury farmers, and identified three different groups on the basis of their goals and management styles. They named these 'dedicated producers', 'flexible strategists', and 'environmentalists'. Each of these groups had different lifestyle priorities and management goals. On the basis of a survey of 680 farmers in Hawke's Bay, King Country and Taranaki, Parminter and Perkins identified ten value clusters which influenced the management goals that farmers pursued. These value clusters included 'business', 'production', 'family', 'autonomy', 'environment', 'community', 'personal growth', 'farm capital value', 'off-farm interests' and 'respectability'.

Looking more particularly at studies that relate to the protection of native forest on farms, it is clear that motives of landowners can vary considerably from one part of the country to another, depending on socio-economic factors and the opportunity costs of retaining land in native bush. Cocklin and Doorman found, for a study of 80 rural landowners in Rodney Ecological District, north of Auckland, that of the 40 respondents who had covenanted native bush, 33 identified subdivision rights as being the 'primary motivating factor' (1994:275). In a sample of 26 landowners on Banks Peninsula who had covenanted native forest, Saunders found that "sixty per cent of respondents stated that their main motive for placing land under covenant was to preserve features for the future. . . None had entered to secure the right for housing or tourism development" (1996:326). In the Catlins, a region which is more isolated than Rodney or Banks Peninsula and where farming is relatively much more marginal, Wilson found that 61 per cent of his respondents

indicated utilitarian aspects (steep terrain, shady location) as the main reason why native forests were still present on the holding. Wilson found at the beginning of the 1990s that a pioneer frontier ethic prevailed among the landholders of the Catlins. Only 25 per cent of Wilson's landholders regarded forest remnants as very important, compared with the residents of Rodney Ecological District, where 75 percent of those who had covenanted land said it was very important, as did 59 per cent of those who had retained but not covenanted their bush.

In the case of this study, comparison between the five conventional farm families and ten 'conservation' farmers failed to show any specific characteristics that would distinguish conservation from conventional farmers. The conservation farmers held no common ideology or set of distinctive values, such as might be shared by, say, a group of organic farmers or permaculturalists. Instead, there was a collection of characteristics that applied to some but not all the farmers, and which could also apply, with greater or lesser intensity, to many conventional farmers. The characteristics were not so much clearly distinguishing qualities, as common tendencies. On average, conservation farmers:

- tended to be older than the average dairy farmer when they covenanted or fenced off their land (although not necessarily when they first fenced the land off), and appeared to be farmers who had proved their ability to their own satisfaction;
- tended to have lived on their land for a long time, either because they grew up on the farm, or because they saw it as their final farm. Most of the people I talked to had been on the land that they were farming for 20 years or more;
- tended to know the farm very well (a follow-on from the above);
- tended to have farms that included land that was more difficult than average. For example, the farm may have included gullies or steep slopes, or wet patches that somehow kept filling in even after they had been drained. As farmers they took the attitude, "If you can't beat 'em, join 'em, and make an asset out of a problem";

There was also a practical element involved. They all said that fencing off the area of bush or wetland in some way made their farming

operation easier or more efficient. In most, it meant that they could focus the management effort on the more productive parts of their farm. More than half said that leaving the trees in place provided shelter for animals and grass.

They all received non-utilitarian benefits from the areas they had protected, including recreation and aesthetic enjoyment. I gained the impression that in most cases the main satisfaction was aesthetic – they liked the beauty of having bush or wetland on the property and the pleasure of seeing more birds.

In some cases, there was a heritage element. For example, in one case the bush was associated with the death of a father, and scattering of the ashes. Additional anecdotes suggested that the spiritual significance of native bush may not be uncommon. In another case, the bush had symbolic importance as a place for family gatherings on New Year's Day.

The farmers involved tended to be strongly individualistic in their views and not afraid to stand apart from their peers. They had strong family support (e.g. from a partner), or personal characteristics that allowed them to resist peer pressure.

Thus, in the case of Waikato dairy farmers, although practical considerations might reinforce the reasons for retaining bush, non-utilitarian values can sometimes be of primary importance. The conservation farmers I spoke to all owned their own farms, had lived on the farm for a long time, knew their farms well, and were emotionally committed to the farm. While they may have emphasised the practical and utilitarian reasons why they had conserved the bush, other comments (including comments from their wives) indicated that non-utilitarian and emotional attachments to the bush were also important.

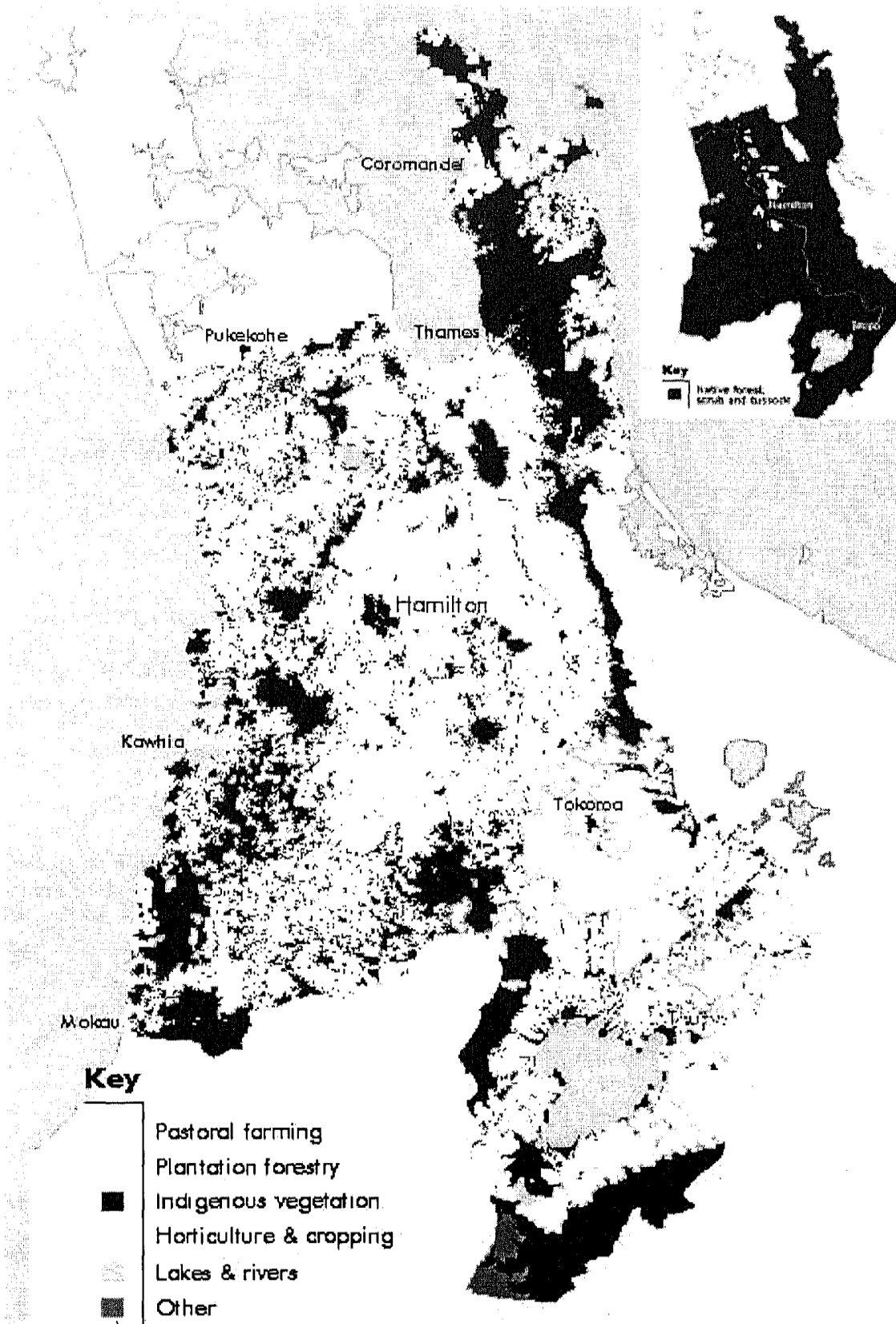
Farmer M reported that the trees were a feature of the landscape, and were very visible to the neighbours and community. Their destruction would have been widely noticeable. He enjoyed

seeing the bush from his house and "felt sad" when the neighbouring farmer cut down a patch next to his. For M and his wife, the bush had become a source of aesthetic pleasure and family heritage.

B & A covenanted five acres of paddock to replant in native trees. A gave me the explanation for their covenant and restoration almost as soon as I entered the house. She took me to her kitchen window and asked me to look onto a kahikatea remnant in the neighbour's farm. She explained how much pleasure the trees had given them over the years, and how much they felt they owed the people who had left the trees standing. They decided that they "wanted to leave something for the next generation". B noted, "We can still make a living without the extra five acres".

Having farmed the one property for all his farming life, R has seen how much the land has changed from his father's time. He has a detailed practical knowledge of the underlying soils, geology, and topography of the farm. This knowledge is a reason why in some areas he has come to feel it is pointless to try and keep the land in pasture, and better to let it revert to wetland or bush. So he has recreated wetlands where pasture production was limited by poor drainage, and covenanted some five hectares of kahikatea forest as a reminder of the large stands that once covered the entire region. He is motivated by childhood memories of school holidays with his grandfather in the bush, and the pleasure that the bush gives him and his wife as habitat for birds.

PB is the third generation farmer on his family farm. He argues, "a lot of the environmental things you do, like if you take some land out, there's a positive. Often there's a bigger positive to putting some trees in, or a pond, or doing something different, than what you take out of production. Even though you can't see anything financial, you're not losing any production. In fact sometimes you actually *gain* production because you've made the animals happier."



Land cover data supplied by Terralink NZ Limited (from 1996 Waikato Land Cover Database);
 Copyright Reserved
<http://www.govt.nz/ourenvironment/land/landusewaikato/RegionalLandUseMap.htm>

Figure 2: Present distribution of native vegetation in the Waikato Region (vegetation at 1840 shown top right)

Conclusions

Qualitative research involving a small sample of conventional and conservation farmers has shown that there are no significant ideological differences that might distinguish between the two groups. Both place a high priority on production of milk solids, and share common values about the importance of lifestyle, personal satisfaction and independence as sources of motivation. But the existence of native bush or wetland on the farms of conservation farmers reflects significant differences in the priorities that they accord to production, profit, lifestyle, and caring for the land. Productionist farmers are more likely to view the land in single-purpose terms as a production medium, whereas conservation farmers are more likely to view the land in multi-purpose qualitative terms as a source of aesthetic pleasure or family heritage as well as their source of livelihood. Conservation farmers seem more likely to follow a strategy of low input - low output, as compared with a production maximising strategy of high input - high output.

The results confirm and reinforce the findings of Fairweather and Keating, and Parminter and Perkins about value clusters and management priorities. They suggest that the management goals of dairy farmers are multi-faceted, and perhaps change over time, in accord with age and family circumstance as well as time on the farm and the fulfilment of personal goals.

It is interesting to compare attitudes and values towards bush between Waikato dairy farmers and the farmers of the Catlins. Comparison suggests both similarities and differences, which perhaps reflect elements of regional culture. The dairy farms of the Waikato have been well settled, sometimes for over a hundred years. Areas of remnant native bush are small and widely scattered, in a sea of grassland. They provide aesthetic diversity, a reminder of the past, and perhaps a hint of something spiritually 'other' in a heavily managed landscape.

For the farmers of the Catlins, native bush is still a major part of the landscape. At the time of Wilson's research, 60 per cent of the original forested area of 131,400ha remained, 23 per cent of it in private ownership. Wilson noted that utilitarian reasons were the primary reason for

retaining native forest for 61 per cent of his respondents. He also remarked that the Catlins district "still has an active 'pioneer frontier'" (Wilson, 1992:125). However, respondents also mentioned that native forests were important for their aesthetic value, and that for many, "without the bush it just wouldn't be the Catlins" (Wilson 1992:131). Thus for Catlins farmers, the bush has important symbolic and identity values.

Wilson concluded that the attitudes of Catlins farmers to native bush were not unique, but that "there is a growing appreciation of the aesthetic values of native forest on farms in the Catlins among some of the landholders, and that attitudes are slowly changing. The findings show that future large-scale removal of native forest on farmland in the Catlins District is very unlikely" (Wilson, 1992:134).

The research results from this brief study of Waikato farmers, as well as those from other areas of New Zealand offer some hope that many landowners throughout the country are favourably disposed toward the protection of native bush, particularly where practical advantages can be demonstrated. Even in the absence of strong utilitarian reasons, however, there are non-utilitarian reasons for many farmers that give reason for hope to those concerned with conservation of biodiversity.

References

- Anderson, E.N. 1996: *Ecologies of the Heart*, Oxford University Press, New York.
- Boothroyd, I.K.J., Crush, J.R. Ledgard, S.F. Huser, B. and Selvarajah, N. 2000: The impact of nitrogen flows from agricultural production environments on non-agricultural ecosystems in the Waikato region, New Zealand, in, Craig, J.L., Mitchell, N. and Saunders, D.A. (eds.) *Nature Conservation 5: Conservation in Production Environmental: Managing the Matrix*, Surrey Beatty and Sons, Chipping Norton, New South Wales, 236-245.
- Burns, B., Barker, G.M., Harris, R. and Limes, J. 2000: Conifers and cows: Forest survival in a New Zealand dairy landscape, in, Craig, J.L., Mitchell, N. and Saunders, D.A. (eds.) *Nature Conservation 5: Conservation in Production Environmental: Managing the Matrix*, Surrey Beatty and Sons, Chipping Norton, New South Wales, 236-245
- Cocklin, C. and Doorman, P. 1994: Ecosystem protection and management in New Zealand: A private land perspective, *Applied Geography*, 14, 264-281.
- Cruikshank, F. and Peukert, G. 1989: *The Views and Opinions of Landowners with Native Vegetation on their Property in*

the Waikato County, Department of Conservation, Hamilton, New Zealand.

Denyer, K. 2000: Maintaining Biodiversity in a Production Matrix: The Effects of Adjacent Land Use Indigenous Forest Fragments in the Waikato Region, Masters Thesis. Environmental and Marine Science, University of Auckland, New Zealand.

Department of Conservation and Ministry for the Environment, 2000: *The New Zealand Biodiversity Strategy, Our Chance to Turn the Tide*, Department of Conservation Wellington, New Zealand.

Environment Waikato 1995: Percent of the Waikato Region covered in native forest, scrub and tussock in 1840 and today, in Leathwick, J., Clarkson, and Whaley, P. *Vegetation of the Waikato Region: Current and Historic Perspectives*, Landcare Research Contract Report LC9596/022. Landcare Research, Hamilton. Internet Source: <http://www.ew.govt.nz/iourenvironmentfindicators/land/biodiversity/veg1/kevooints.htm>

Environment Waikato 1998: Waikato State of the Environment Report 1998, Waikato Regional Council, Hamilton, New Zealand.

Fairweather, J.R. and Keating, N.O 1994: Goals and management styles of New Zealand farmers, *Agricultural Systems*, 44,181-200.

IUCN, UNEP, WWF, 1991: *Caring for the Earth, A Strategy for Sustainable Living*. Published in partnership by The World Conservation Union (IUCN), United Nations Environment Programme (UNEP) and World Wide Fund For Nature (WWF), Gland, Switzerland.

Jeffries, M.J. 1997: *Biodiversity and Conservation*, Routledge, London and New York.

Norton, D.A. and Miller, C. J. 2000: Some issues and options for the conservation of native biodiversity in rural New Zealand, *Ecological Management and Restoration*, 1(1), 2634.

Parminter, T.G. and Perkins, A.M.L. 1997: Applying an understanding of farmer's values and goals to their farming styles, *Proceedings of the New Zealand Grassland Association*, 59, 107-111.

Peck, S. 1998: *Planning for Biodiversity, Issues and Examples*, Island Press, Washington DC.

Sahlins, M. 1976: *Culture and Practical Reason*, University of Chicago Press Chicago.

Saunders, C. 1996: Conservation covenants in New Zealand. *Land Use Policy*, 13(4), 325-329.

Strang, V., 1997: *Uncommon Ground, Cultural Landscapes and Environmental Values*, Berg, Oxford, New York.

Wilson, G.A. 1992: A survey on attitudes of landholders to native forest on farmland, *Journal of Environmental Management*, 34, 117-136.

Vant, B., Taylor, A. and Wilson, B. 2000: Land use and river condition in the Waikato Region, *Proceedings of Water 2000 Conference*, NZ Water and Wastes Association, Auckland.