

***Kaitiakitanga:***  
**Protecting New Zealand's Native Biodiversity**

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Species diversity is a very important component of a healthy ecosystem, and a necessary condition for long-term sustainable development. However, it is widely recognised that species extinction is on the increase in New Zealand, as biological diversity comes under pressure from landuse activity and environmental change.

Despite an active official conservation programme, the indigenous biodiversity of New Zealand (and its major regional partner Australia) is under threat. As international experience elsewhere has shown, the restoration of biological heritage (in the form of biodiversity conservation) draws greatly on the commitment of local resource users and communities, rather than government intervention or planning regulations alone. Nevertheless, environmental planners can have an important role to play in this respect, because they are often experienced in mediating between the, somewhat incompatible, interests of conservationists, resource users and local communities. But, in order to be effective in this mediation role, planners have to consolidate their professional skill base with greater awareness of landscape ecology and species biology, and with more commitment to the involvement of indigenous Maori in the process.

The current rates of species loss, at both global and regional levels, are estimated to be several times higher than they have ever been over the last 65 million years (Jeffries, 1997: 37, 113-148). This rate of extinction has heightened concern within the environmental planning profession about the long term ecological consequences of biodiversity degradation. Diversity within (and between) species and ecosystems is widely recognised as a prerequisite for environmental resilience, as well as a significant source of goods and services. Biodiversity loss is likely to affect directly the production of raw materials (food, fuel, building materials, fodder, genetic resources, medicines etc), biological control of pests and diseases, water supply, waste recycling, pollution control, nutrient cycling, soil building, climate and atmospheric regulation, and recreation.

Biodiversity or 'biological diversity' is the variety of life in all its forms, levels and combinations, including ecosystem diversity, species diversity and genetic diversity (IUCN, UNEP and WWF, 1991: 210). In the context of a particular country, such as New Zealand, biodiversity is normally taken to mean the diversity of native species, excluding introduced species such as exotic weeds, pests and cultivars. Therefore, the conservation of biological diversity means developing ways to help native plants and animals to survive in the landscape wherever they are (whether in developed and undeveloped landscapes), and finding ways to help native ecosystems to continue to function.

Biodiversity has become globally recognised as a key player in sustainable development. The importance of protecting biodiversity was articulated in chapter 15 of the 1992 report of the United Nations Conference on Environment and Development in Rio de Janeiro (the Earth Summit); and the political momentum generated by this concern resulted in the signing of the United Nations Convention on Biological Diversity by 157 government delegates.

New Zealand's 1997 State of the Environment report indicated that "Biodiversity decline is New Zealand's most pervasive environmental issue, with 85 percent of lowland forests and wetlands now gone, and at least 800 species and 200 subspecies of animals, fungi and plants considered threatened" (Ministry for the Environment, 1997: 10.6).

The potential for conflict between urbanisation and agricultural production, on the one hand, and the need to preserve biological heritage, highlights the potential role of environmental planners in the areas of process, community consultation, and conflict resolution. Planners can look for compromises and trade-offs within land production systems that encourage landowners and farmers to retain areas of native vegetation wholly or in part, to allow the survival of some elements of native flora and fauna within farmed, residential or urban landscapes.

### **Biodiversity loss**

Areas of greatest habitat value for conservation of native biodiversity also tend to be those used for food production and forestry. Increasing pressures for production in the future are likely to mean increasing potential for loss of biological heritage and diversity. The 1997 *State of the Environment report* listed the main causes of NZ biodiversity loss as the shrinkage of lowland habitat (including lowland forest, wetlands and estuarine habitats), declining quality of remaining land and freshwater habitats, impacts of pests and weeds, and, in the case of some marine species and ecosystems, human overexploitation (Ministry of the Environment 1997: 10.6).

In New Zealand, agriculture has been one of the greatest causes of land use change and habitat destruction. Before European emigration began in the nineteenth century, the areas in New Zealand of highest biodiversity were the flood plains and coastal lowlands. These have also been the areas which witnessed the great amount of human settlement and conversion to agriculture. Not only did these areas include the greatest diversity of ecosystems (coastal and low altitude forest of various structure and species composition, bog, swamp, flood plain, estuaries, dunes, lakes, rivers, and streams), they were also critical for the ecology of many birds. Today, most of the land below 300 metres is privately owned and contains only fragments of the original native vegetation. Such fragments suffer ecological disturbance and continued biodiversity loss, though they continue to serve as the seed banks of a depleted biological heritage and need special protection to restore some of the hybrid landscapes in which exotic and native species coexist.

Conservationists have increasingly recognised that future protection of biodiversity will have to include cultivated and pastoral landscapes rather than just national parks or areas especially set aside for such purposes. McIntyre et al (1996: 156) comment that while reserves will continue to be important for the protection of biodiversity, the opportunities to extend or create new reserves are decreasing as pressures on land resources increase. With specific reference to New Zealand context, Holland (1996: 6) has argued that if we are to occupy islands in a sustainable manner we must learn to maintain their distinctive ecosystems and species by, among other things, “facilitating sustainable mixtures of native and exotic species in permanently settled areas.”

### **Local government and legislation**

The conservation of biological diversity is increasingly recognised by local government planners as an essential component of sustainable regional development. Australasian planners are generally well qualified to contribute to the development and implementation of biodiversity conservation plans and strategies. As signatories to the 1992 Earth Summit agreement, New Zealand has been obliged to prepare “national strategies, plans or programmes for the conservation and sustainable use of biological diversity” (Convention on Biodiversity, 1992, Article 6).

Local government is important for biodiversity conservation in a number of ways: by providing a legal mandate to promote environmental protection at local and regional level; it is accountable to individuals and communities for environmental conditions within their local area; it can harness community involvement in environmental action; and it is potentially the level of government that can provide the ongoing care that is necessary for long-term ecological protection and restoration.

In New Zealand, district plans produced by territorial local authorities have thus been obliged to make provision for the protection of native habitat. Techniques include the use of schedules of ecologically significant sites, restrictions on the clearing of native forest, and provisions for encouraging the protection or restoration of riparian margins. Experience has shown that where the skills of planners in relation to community consultation have been fully involved, community acceptance of provisions for habitat protection has been much stronger than in situations where local or regional government have imposed such provisions without community consultation.

New Zealand has incorporated the principle of biological diversity within the government's Environment 2010 Strategy. The Strategy includes, as one of its main aims, the protection of "indigenous habitats and biological resources by: maintaining and enhancing the net area of New Zealand's remaining indigenous forests and enhancing the ecological integrity of other remaining indigenous ecosystems; promoting the conservation and sustainable management of biological diversity so that the quality of our indigenous and productive ecosystems is maintained or enhanced. (Ministry for the Environment, 1997).

The legislative power of local government in New Zealand is provided through a number of statutes including the Resource Management Act 1991 and the Local Government Act 1974. These laws encourage a degree of environmental responsibility, which is particularly important for biodiversity protection because it extends to land in private ownership. Given that most of the conservation land in public ownership is generally over 300 metres above sea level, such areas tend to be representative of higher altitude ecosystems, as lower altitude ecosystems are often in private ownership. The Resource Management Act 1991 applies to all privately owned land and controls the development and use of air, water, soil, land and associated natural and physical resources (apart from minerals), including native plants, animals and ecosystems. The Act states, as a matter of national importance, that, "all persons exercising functions and powers under it...shall recognise and provide for...the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna."

However, experience suggests that legal instruments alone are seldom sufficient to encourage greater environmental responsibility. Of equal relevance is the 'carrot' approach to conservation. Landowners tend to react negatively to regulatory mechanisms of conservation, and prefer positive approaches such as incentives and provision of information. Landcare groups have been initiated by some councils as a means of promoting environmental education and individual motivation, and have been shown to be effective.

### **Planning for biodiversity**

Research within conservation biology and landscape ecology have created a state of knowledge about the nature conservation requirements of native species that, if applied, could reverse current trends. These publications brought together a formidable collection of research and conservation land management experience. The study was followed by a similarly impressive compilation of articles on the role of ecological corridors. Despite the strength of Antipodean research in relation to nature conservation, and the fact that environmental planning principles for maintaining biological diversity have been developed, loss of species and communities continues unabated. It is now widely recognised that without community involvement and co-operation, conservation management plans will be ineffective (McIntyre et al 1996: 169).

In this regard, planners have an important contribution to make to the conservation enterprise. Planners are (or should be) aware of the political nature of landuse decisions and of the public participation and consultation processes that are essential for community acceptance of conservation objectives. In the words of John Friedmann, planning, at the very least, “attempts to link scientific and technical knowledge to actions in the public domain” (Friedmann, 1987: 38). In order to bring about effective connections between knowledge and action in the public domain, planners are often called upon to mediate between community and other interest groups and ensure that information is shared and communicated in a fair manner.

The maintenance of native biodiversity, in the long-term, depends on protecting the natural and physical conditions that are crucial to the survival of native species and ecosystems. This will depend on integrated ecosystem-based management within a context of district or regional landscapes. Ecosystem-based management involves an awareness of the relationships between elements of the landscape; and management of the processes that enable the plants, animals and natural conditions to continue without undue disruption. This recognition presents a challenge to planners because it introduces a new set of considerations in relation to landscape design (the interaction requirements and interdependencies of ecosystems and species); and also because it requires planners to devise planning policies which encourage appropriate long-term ecosystem management practices.

Although planners in New Zealand have largely accepted the importance of biodiversity conservation, there are no effective landscape planning techniques in use for the restoration of native biodiversity. Planning policies so far remain very much within the ambit of the Resource Management Act 1991 as a statutory framework and depend largely on the imposition of planning controls when applications come in for development. In this respect, these policies tend to be reactive, rather than proactive in their effect (they often come into effect only after a new development has been proposed, not in response to existing development).

In terms of their ability to contribute to biodiversity conservation, New Zealand planners have a combination of professional skills that make them particularly qualified to assist with the preparation and development of biodiversity plans and strategies. These include:

- analysis of spatial relations, including landscape phenomena;
- a holistic appreciation of context (planners tend to view places as parts within a larger whole, both spatially and in social, economic and environmental terms);
- information gathering skills from different groups of people (engineers, ecologists, economists, experts, members of the public, special interest groups);
- awareness of political and cultural differences in the evaluation of environmental resources;
- commitment to democratic community processes in decision-making about the use of those resources;

- experience in public consultation and community involvement in decision making.

### **Maori contribution**

Most of the land in New Zealand is subject to legislation enacted within the past two decades that incorporates concern for both the issues of environmental conservation and of Maori cultural values and ancestral rights. The presence of this legislation and of a growing capacity among Maori to be involved in the process of formulating public policy for the management of land and other natural resources, means that Maori concepts of land tenure and sustainable management are receiving increasing attention in New Zealand, and are likely to influence the shape of future planning policies for Maori lands.

Resource managers are now required by law to consider the cultural values and concerns of Maori in relation to land, and Maori are developing an increasing capacity to be involved. This process is likely to increase as the legislation becomes entrenched, and will have flow-on implications for planning requirements as the concerns of Maori become recognised in devising regional plans for biodiversity conservation.

Recent environmental legislation illustrates this concern for Maori sensibilities by incorporating environment-related Maori terms within the body of legislation. The historic Resource Management Act was enacted 'to promote the sustainable management of natural and physical resources'. Among the principles articulated by the RMA, is that all persons exercising functions under it, 'shall recognise and provide for... the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, *waahi tapu* (sacred sites) and other *taonga* (treasures)'. They must have particular regard to the exercise of *kaitiakitanga* (guardianship) and must, 'take into account the principles of the Treaty of Waitangi.' The Conservation Act 1987 is another important legislation that combines concern for Maori principles of resource management, with conservation of natural and physical resources. Section 4 of the Act states that: 'This Act shall so be interpreted and administered as to give effect to the principles of the Treaty of Waitangi' of 1840 between Maori and European settlers.



The concept of *kaitiakitanga* is one which perhaps most explicitly reflects and incorporates the relationship between Maori land management and environmental sustainability. It is defined in the Resource Management Act as ‘the exercise of guardianship; and, in relation to a resource, includes the ethic of stewardship based on the nature of the resource itself’. *Kaitiaki* or guardians are those with rights to ancestral land who are recognised by others of the land-owning group as having special knowledge in relation to the management of resources within that land. They are expected to protect the integrity of those resources in trust for future generations, by drawing on their traditional knowledge of indigenous habitats.

However, it cannot automatically be assumed that all Maori will necessarily view environmental sustainability as a key consideration in management of ancestral land. There is a divergence of views among Maori about protection versus development, and many are of the view that ‘development’ is necessary for the social and economic welfare of their people.

## **Conclusion**

Biodiversity loss has become a matter of increasing concern at global, regional and local levels. It is a particular problem within New Zealand because of the high rates of endemism characteristic of New Zealand species, and their vulnerability to habitat loss and the effects of introduced competitors. Biodiversity conservation has become widely accepted as a key element of environmentally sustainable development. The governments of New Zealand and its major regional partner, Australia, are both signatories to the UN Convention on Biological Diversity, and have pledged a commitment to promote biodiversity conservation.

In a world where environmental conflicts and economic pressures are likely to grow, planning for preserving biological heritage requires new knowledge and skills in relation to ecosystem processes and species biology. In New Zealand, the requirement for greater understanding of biological systems must be matched by a commitment to involve indigenous Maori in the planning process. Future protection of native species and ecosystems is likely to involve the development of systems of co-management where central government (in the form of the Department of Conservation) and local authorities are prepared to trust local Maori land-owning groups with the management of local biological resources.

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