

### ***13. Indigenous Ecosystems***

#### **Explanation**

The areas managed by the Department are mainly indigenous ecosystems. They are remnants of varying sizes of New Zealand's unique natural environment. The conservation of their natural resources and the functions and processes within them is achieved by the integrated actions of all of the functions of the Department, which are outlined in Part Three of CMS. Indigenous ecosystems also exist beyond the boundaries of the areas managed by the Department. Their conservation is also of interest to the Department.

An indigenous ecosystem is a biological system, of which significant elements are indigenous to New Zealand, comprising a community of living organisms involved together in the process of living. There is a continuous flow of energy and matter through the system. Ecosystems may be small or large, simple or complex.

The Resource Management Act incorporates a systems approach to the management of natural and physical resources by emphasising the need to safeguard the lifesupporting capacity of ecosystems as part of the sustainable management of the resources of a region or district. Consideration of the processes that occur within ecosystems is an important part of resource management planning under the Act.

Conservation efforts both nationally and internationally are focusing on the conservation of biodiversity. The United Nations Convention on Biological Diversity, an international agreement signed in 1992 by over 150 countries and ratified by the New Zealand Government, committed signatories to the conservation of the world's biodiversity and the sustainable use of biological resources.

Biodiversity is defined in the Convention as the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity within species, between species and of ecosystems.

The conservation of biodiversity is the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species within indigenous ecosystems.

The incorporation of the ecosystem concept as a key component of the conservation of biodiversity takes the task beyond protected natural areas. It has the effect of making processes as important as places. It also requires recognition by the local community that the conservation of biodiversity concerns the wider, total landscape of the conservancy.

This is achieved through the range of actions outlined in Part Three: Functions in CMS. The actions include:

- controlling the effects of wild animals and other animal and plant pests [*refer Sections 20, p 183 and 21, p 191*];
- active management of the most threatened indigenous species [*refer Section 14, p 141*];
- seeking protection and appropriate management of indigenous ecosystems not protected [*refer Section 16, p 161*];
- rehabilitation of degraded ecosystems and advocating for land uses adjacent to protected areas to be sustainable and not adversely affecting the viability of indigenous ecosystems [*refer Section 18, p 173*].

In order to provide cohesion to work on the conservation of indigenous biodiversity, the Department is developing a national Biodiversity Strategy. The strategy will establish methods for the Department to focus its management on ecosystems, as the unique and highly endemic flora and fauna of New Zealand are both the products and the basic ingredients of ecosystems. A priority will be focusing management on the most threatened ecosystems. A national system for setting priorities for management and research to achieve the conservation of biodiversity is also being developed.

The ecological districts and regions framework (introduced in Section 3.2, p 16) provides a context within which ecological management will be carried out.

## **Wellington Conservancy**

The Department directly manages indigenous ecosystems ranging from alpine to marine and including forested uplands; forested lowland hill country; forest remnants on floodplains; fresh and salt water bodies including lakes, estuaries, wetlands and rivers, coastal cliffs, dunes, rocks and islands. In addition to indigenous ecosystems, exotic ecosystems of pine plantations and grasslands may also contain or support indigenous species.

Beyond the areas managed by the Department are indigenous ecosystems managed by local government for conservation purposes, either as reserves or water supply catchments, or by conservation organisations, such as Royal Forest and Bird Protection Society. The land administered by the Wellington Regional Council in the Tararua and Rimutaka ranges, and at Akatarawa and Belmont, and by Wellington City (as inner and outer Town Belt), Hutt City and Porirua City is particularly significant. Indigenous ecosystems are also managed by private individuals and other organisations, but their management is not always aimed at conservation of indigenous biodiversity.

The most threatened ecosystems in the conservancy are: lowland forests, wetlands, lakes, rivers and river margins, coastal escarpments, dune systems and estuaries. These ecosystems are also least represented in the land managed for conservation by the Department and others with an involvement in conservation.

## **Management Issues**

### *Threats*

Indigenous ecosystems are threatened by:

- *plant and animal pests*: indigenous species have limited abilities to withstand the combined effects of exotic plant pests, wild animals and other animal pests. The techniques and resources available to control these pests are not sufficient to eradicate them from the mainland. The

Department is able to control the effects of goats and deer, through sustained hunting effort and some plant pests by cutting, grazing or spraying. It is not yet possible to achieve a large scale, sustained reduction of cats, rodents, mustelids and possums which devastate fauna and flora on the mainland. Islands offer better opportunities to protect indigenous species from pests and for the rehabilitation of the island's natural ecosystems;

- *fragmented nature and small size of indigenous ecosystems*: Remnant areas have an increased vulnerability to natural disasters because they have a high ratio of edge to area and so are more exposed to wind damage. There is a loss of feeding, roosting and nesting places for native animal species, loss of native plants due to changes in light and humidity in small areas, decline in the reproductive success of native plants and animals and changes in their genetic variability due to the isolation of populations. Remaining indigenous ecosystems can be legally protected from the effects of land use change, but once protected most will require management to ensure they remain viable. Protection of buffers around indigenous ecosystems and the protection and creation of corridors to link natural areas will be important in enhancing the viability of indigenous ecosystems;
- *human actions which are not environmentally sustainable*: drainage of wetlands, discharges into waterways, fire, grazing of forest remnants, felling of forests.

#### *Understanding*

The effective management of ecosystems requires a knowledge of the ecological and physical processes taking place and the inter-relationship between the components of the ecosystem. Within ecosystems, the effect of changes in one element on all the others is not fully understood. Likewise, the interrelationships between ecosystems requires greater understanding. The Department will seek to improve its understanding of indigenous ecosystems. For example, the survey and monitoring review [refer Section 24, p 203] will seek to establish indicators for monitoring that will allow the overall health of an ecosystem to be determined. The research agenda will consider the need to undertake research into the functions and processes operating in threatened ecosystems.

#### *Priorities*

The focus for management of ecosystems needs to be on the most threatened. Identified priority ecosystems for the conservancy are the ecosystems which are the focus of Key Places in Section Two: Places which the Department manages and any ecosystem which encompasses the habitat of a threatened species, lowland forest, wetlands, lakes, rivers and river margins, coastal escarpments, dune systems, and estuaries. In particular, priorities will be ecosystems which are good representative examples of their type, and areas which provide a buffer to a priority ecosystem which is protected and links between indigenous ecosystems. Priority action for ecosystems now managed is to control pests the Department can control and to establish means to monitor ecosystem condition [refer Sections 20, p 183; 21, p 191; and 24, p 203] to prevent, where possible, unacceptable modification of existing ecosystems.

Priority action for ecosystems not now managed is to identify their location, extent and values and to seek to protect them [refer Sections 16, p 161 and 18, p 173]. The Resource Management Act, which promotes sustainable

management, offers a significant opportunity to manage the use of land and water in a way which will sustain indigenous ecosystems.

#### *Achieving integrated management*

The processes which create and sustain indigenous ecosystems extend beyond their boundaries, and must be viewed on a landscape scale. Integrated management is therefore required to sustain these ecosystems. Integration requires the co-operation of the Department, other central government agencies, regional and local government, and landowners. The Department considers integration can best be achieved by all those involved in the management of ecosystems understanding their importance and their processes, by incorporating this into their management decisions, and by co-operation between the organisations. The Department will therefore disseminate information about indigenous ecosystems, advocate for recognition of their management needs and greater understanding, as well as co-operating with others.

The administrative boundaries the Department uses, and those of local and regional government, do not follow ecological region as district boundaries. A cooperative approach, and an awareness of the ecological context of management, need to be deliberately brought into decision-making processes and operations.

### **Objectives**

1. Seek to rehabilitate indigenous ecosystems.
2. Maintain natural processes within indigenous ecosystems on the areas managed, especially ecosystems which are not well represented in the areas managed and are threatened elsewhere.
3. Maintain the diversity of indigenous species in their natural habitats, in particular threatened species.
4. Expand and share the Department's knowledge of the extent of natural resources present in the conservancy and the processes that operate within indigenous ecosystems.
5. Establish and maintain co-operative working relationships with tangata whenua in the management and appreciation of indigenous ecosystems.
6. Establish relations and work co-operatively with other organisations and individuals involved in the management and appreciation of indigenous ecosystems.

### **Implementation**

1. Assist with the development of the Department's biodiversity strategy as requested by Head Office, as part of the Government Policy on Biodiversity.
2. Work towards integration of the Department's management actions to protect priority ecosystems on the land it manages.
3. Advocate generally for the conservation of indigenous ecosystems, through public awareness activities [*refer Section 28, p 257*].
4. Advocate under the Resource Management Act and other legislation for the management of land and water to sustain indigenous ecosystems.
5. Work with other organisations to develop methods to protect and enhance priority ecosystems and to increase their understanding of indigenous ecosystems.
6. Consult with tangata whenua to identify and provide for their interest and knowledge of indigenous ecosystems.