

4.10 ECOSYSTEM MANAGEMENT, SURVEY AND MONITORING

Rationale

Knowledge and understanding of the park's ecosystems is essential to the aim of preserving Fiordland National Park as far as possible in its natural state. Knowledge of soils, geology, climate and natural hazard risks will aid many aspects of management. The purpose of having an "information strategy" is to provide an organised approach to meet information needs for Fiordland National Park management purposes. Lack of information on Fiordland National Park ecosystems can lead to misplaced attention on known problems, simply because they are known, whereas other more critical problems might not be known and therefore not acted upon. Information requirements for management can be divided into three categories:

- Inventory: description of what is present;
- Monitoring: record of change over time; and
- Research: analysis to increase understanding of ecosystems.

These categories serve as a framework for considering future work priorities. All three require scientific and technical inputs, as well as management inputs. Complete inventories of natural features in Fiordland National Park may be desirable but the realities of scarce resources and the vastness of Fiordland dictate a limited, incremental approach to inventory work. In reality it is likely that full information will continue to be available for only a very small proportion of the species and land area of Fiordland National Park, over the life of this management plan.

Objectives

1. To build and maintain an inventory that identifies:
 - a) The indigenous communities and species found within Fiordland National Park, and their status;
 - b) Threats to the indigenous ecosystems and species, including potential threats; and
 - c) Key ecological processes which sustain indigenous ecosystems.
2. To assess the effectiveness of management operations and whether preservation objectives for Fiordland National Park are being achieved.
3. To establish and maintain as far as is practicable an on-going programme to monitor changes in status and condition of ecosystems and species within Fiordland National Park.

4. To arrange, facilitate and support a programme of scientific research to assist management of Fiordland National Park.
5. To integrate the monitoring of ecosystems condition with the monitoring of visitor use so that any impacts of increasing visitor use can be recognised and managed (also see section 5.16).

Implementation

1. Identify current information bases and information needs. Rationalise information systems to achieve efficiency of information retrieval. Establish and maintain an integrated information management system compatible with national methodologies and/or guidelines and establish links for sharing information.
2. Encourage and advocate for a region-wide strategic approach to achieve Implementation 1 amongst external agencies such as Ngāi Tahu, local authorities, universities, research institutes, Meridian Energy Limited, the Guardians of the Lakes, Fiordland Marine Guardians, other interested parties and the public.
3. Consult with papatipu rūnanga and Te Rūnanga o Ngāi Tahu over research involving taonga species; including research applications involving cultural materials (refer also to Part Two).
4. Provide for Te Rūnanga o Ngāi Tahu and its nominees to undertake any research and monitoring regarding its pounamu resource.
5. Determine survey (inventory) requirements for all natural resources for which the Department of Conservation is responsible. Priority should be given to the following:
 - a) Less understood areas which may be under threat from animal pests or weeds;
 - b) Species or communities which are poorly known e.g. reptiles, invertebrates, freshwater fish, non-vascular plants and fungi; and
 - c) Key areas of representative ecosystems for inventory.
6. Develop a survey and monitoring plan that identifies specific survey and monitoring activities. The survey and monitoring plan which is developed is likely to be one which covers survey and monitoring across all lands administered by the Department of Conservation in Southland Conservancy. Important issues for the survey and monitoring plan to address are:

- a) Vegetation condition and introduced animal populations. There is a need to measure trends in wild animal (deer, goats, chamois, pigs and possums) distribution and numbers and the condition of vegetation, by continuing the work done to date using areas representative of Fiordland. Links may be made with similar monitoring on other lands adjacent to Fiordland National Park; and
 - b) Takahē and takahē habitat; threatened species populations (as identified through various species recovery plans), animal pest status on islands and other parts of Fiordland National Park, any prospective biological control programmes, lake level controls and their impacts; mustelid and rodent population levels; and any other ecosystem monitoring needs which arise over time.
7. Identify research priorities and establish a research programme. Encourage research related to the Fiordland National Park ecosystems, but with priority being driven to management problems or needs. The following research needs have been identified in no order of priority:
- a) Development of methods/techniques for monitoring ecosystems;
 - b) Assessment of impacts of introduced animals;
 - c) Methods for control of possums;
 - d) Consideration of management options for threatened species;
 - e) New methods of predator control for the protection of threatened species;
 - f) Suitability of biological controls for introduced plants and animals;
 - g) Assessment of impacts of facilities and visitor use on Fiordland National Park ecosystems; and
 - h) Encouraging and facilitating research to improve knowledge on national park values.
8. Encourage research, especially study to improve understanding of physical and biological systems, provided research activity is compatible with national park values. Not all research has to be carried out within Fiordland National Park. All research findings are to be made available to the Department of Conservation, the Southland Conservation Board, Ngāi Tahu and interested parties, upon request.

9. Require scientific activities to be carried out in such a manner that protection of natural ecosystems is ensured. Approval of research activity will be dependent on ensuring that it will cause no lasting changes in indigenous plant and animal populations or community relationships, and it does not conflict with essential management operations. All survey, monitoring and research proposals will be assessed to ensure they are relevant and meet rigorous scientific standards. Science teams should be able to demonstrate that they are suitably qualified and have the necessary credentials. Where science projects involve genetic modification or experimentation with DNA, Ngāi Tahu should be consulted.
10. Encourage the completion of approved science projects, and require that research including observations, data and results is fully reported to the Department of Conservation.
11. Develop an inventory of permanent plot markers, and decide which plot markers should remain. Any new application for permanent markers will be strictly controlled.
12. Encourage visitors to Fiordland National Park to report to the Department of Conservation any observations made which indicate ecological changes, e.g. unusual numbers of dead plants and animals, or physical changes.
13. Ensure the effects of visitor use on the natural values of Fiordland National Park are monitored and managed effectively to prevent them becoming unacceptable (also see section 5.16).

4.11 FACILITIES AND ACCESS FOR ECOSYSTEM MANAGEMENT

At times it is necessary to be able to provide facilities and use air access to areas to achieve ecological management objectives where this may not be allowed for other purposes such as recreation or tourism activities.

It is noted that approvals from other authorities such as those under the Building Act and the Resource Management Act may be required for facilities.

Objective

1. To allow appropriate facilities and access for ecosystems management purposes.

Implementation

1. From time to time facilities such as huts are essential to support ecological management activities. Any buildings or structures will be located with minimum impact to the environment, although in exceptional circumstances some may need to be highly visible for safety reasons. They will be of a re-locatable design so they can be removed on completion of operations. In assessing the environmental impacts of any proposed new facility they should follow these criteria:
 - a) The form and design of the building, structure or facility should be such that impact on vegetation, topography and other natural features, and disturbance to wildlife is minimal;
 - b) Material should be sensitive to the natural surroundings, and in keeping with any nearby or associated buildings, structures or facilities; and
 - c) Facilities should not degrade the visually unmodified landscape form, except where the development of boardwalk is consistent with recreation opportunity objectives identified in Part Five of this Plan. Waste management and energy efficient technologies should be used in these facilities.
2. Aircraft or boats may be used for access to lands administered by the Department of Conservation for approved ecological management purposes (refer to sections 5.5 and 5.6). Efforts will be made when considering applications for aircraft access (for ecosystem management purposes), to avoid or minimise disturbance

to other users. Aircraft operators require a concession to operate within Fiordland National Park.