



The Principles of Protected Area Management in Finland

Guidelines on the Aims, Function and Management of State-owned Protected Areas

Metsähallitus – Forest and Park Service,
Natural Heritage Services



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Kansikuva / Cover picture: The general aim of the management of heritage landscapes is to maintain and manage them using methods as close to those originally used as possible, as part of Finland's national cultural heritage, and as features which enrich the countryside and increase the attractiveness of protected areas. Veli-Matti Väänänen.

Translation in English: Francis Weaver.



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1 INTRODUCTION

The book of recommendations "The principles of protected area management. Guidelines on the aims, function and management of state-owned protected areas" was approved for publication by the Finnish Forest and Park Service on 19th October 1992. The document, published by the Nature Protection Publications of the Finnish Forest and Park Service (series B no. 1), defined the various types of state-owned protected areas under the administration of the Finnish Forest and Park Service (now known as Metsähallitus) and the Finnish Forest Research Institute, along with the conservation aims associated with them and the general principles to be observed in their use and management. This document was not intended to set out binding rules under the legislation on standards, but rather to provide a practical guide for the management of protected areas.

There have subsequently been great changes in the field of nature conservation. The Convention on Biological Diversity signed in Rio de Janeiro in 1992 came into force in Finland in autumn 1994. Also in 1994 the first international assessment on the state of Finland's protected areas was made. Finland has been a member of the European Union since 1995. The EU has two major directives related to nature conservation, the Habitats Directive and the Bird Directive, which Finland had to implement by integrating the necessary policies into national environmental legislation. This was achieved in the beginning of 1997 when Finland's new Nature Conservation Act came into force. By this time, the creation of the necessary network of protected areas to be included in the Natura 2000 network, as stipulated in the EU directives, was well under way in Finland. The protection to a favourable conservation status of all of Finland's native species and natural habitat types was set out as a general aim of the new act, according to the stipulations of the habitats directive. Over the last six years many more protected areas have been designated, including the first protected areas of old-growth forest in southern Finland. Public opinion has become more favourable towards nature conservation, as can be seen from the increasing numbers of visitors to protected areas, and the increased interest from travel operators and their clients in ecotourism.

These factors inevitably affect the principles of protected area management and use. This all means that a revised version of the guide setting out these principles is already required. **Protected area management** is here, as in the previous publication, taken to mean all the measures taken by officials or institutes responsible for the management or administration of protected areas either within or outside these areas to meet their conservation aims. This will include, for example, the provision of buildings and other facilities, publications and services related to guidance and education, the supervision of the areas, and the carrying out of the surveying and monitoring work required for conservation, management and guidance, as well as the concrete measures taken to manage natural habitats in protected areas. These guidelines are also intended to be applied in areas under the administration of Metsähallitus which have been procured for conservation purposes, even though they may not have been legally designated as protected areas yet.

This guide is part of Metsähallitus's **environmental quality control system**, and also part of a wider set of guidelines intended to help in the practical management of protected areas and in the realisation of their aims. The guidelines set out here are intended to provide the basic material for a set of **more detailed guides** containing practical instructions for various sectors, and also to form the basis of **management and land use plans** for protected areas, to be approved by the Ministry of the Environment and followed in the practical management of protected areas. If these land use and management plans are drawn up in several parts, as is often the case, the land use and principles of management of an area will be set out in a **master plan**, and any parts of the plan requiring more detailed assessment and deeper analysis will be presented in separately drawn up **special plans**. The framework plan and the special plans will together constitute an area's management and land use plan. Management and land use plans may not have to be made in certain areas, such as small areas, or areas with few services or facilities. In such cases special plans may be drafted if necessary, even though the area concerned may not be covered by any land use and management plan. Special plans normally have to be approved by Metsähallitus.

The plans for larger or otherwise locally important protected areas are drafted according to the principles of **participatory planning** (Loikkanen et al. 1997).

2 THE ROLE OF THE NETWORK OF PROTECTED AREAS

The aims of protected areas and the role of the network of protected areas have been described in many documents and reports related to legislation on nature conservation and the designation of protected areas (e.g. The National Parks Committee Report, KM 1976:88) and the government proposals for the new legislation on nature conservation put before Parliament (HE 79/1996)). The role of the network of protected areas can be defined as follows:

Finland's protected areas form a varied network intended to preserve for present and future generations a suitable number of representative and ecologically viable areas of all the ecosystems and natural habitat types occurring in Finland, taking into account geographical variations and the various stages of natural succession. Protected areas also have a very significant role in achieving and maintaining the favourable conservation status of habitat types and species.

The network of protected areas must primarily preserve:

- 1) areas of natural habitat, particularly habitat types characteristic of the Finnish landscape, and habitats, land forms and features which are endangered

As part of this aim, or additionally, the following should be preserved:

- 2) natural gene pools and ecosystem diversity
- 3) species, geological and geomorphological features, especially species and features which are either naturally rare, or threatened or declining as a consequence of human activity
- 4) landscapes and habitats shaped by previous generations, including the cultural heritage associated with the Finnish countryside, along with endangered domesticated plant and animal breeds.
- 5) the natural succession of ecosystems and other natural processes at various stages
- 6) areas of outstanding natural beauty
- 7) wild areas

Within the limitations set by the requirements of conservation, the network of protected areas should also aim to facilitate:

- 8) research and monitoring work on the state of the environment
- 9) environmental education, promoting understanding and interest towards nature
- 10) outdoor recreation

The economic utilisation of protected areas for ecotourism, for example, is permissible where it does not endanger the achievement of conservation aims.

Consequently, given these varying roles, the network of protected areas includes areas which differ widely, in terms of their size, location, nature and protected status, but which complement each other to form a coherent entity.

In Finland it has been possible to designate a network of protected areas which is particularly wide and valuable in European terms, and forms an important part of the global network of protected areas.

3 DEFINING PROTECTED AREAS

The network of protected areas is growing rapidly both in Finland and throughout the world. On the international level, attempts have been made to create a consistent classification, terminology and system of agreements, which the Finnish protected areas system should be able to fit into.

In Finland the concept of a protected area can be defined as follows:

A protected area is a special area established under the Nature Conservation Act intended either to preserve an unspoilt area of natural habitat as it stands, or to preserve and maintain or restore certain natural features, natural processes, species, landscapes or man-made habitats. This protection is permanent and planned with the future in mind. Other possible land uses must be carried out so that they do not endanger the realisation of conservation aims.

According to Chapter 3 of the Nature Conservation Act (1096/96) nature reserves can be classified as:

- 1) national parks
- 2) strict nature reserves
- 3) other nature reserves.

The basic conditions for the designation of such protected areas include:

- 1) a threatened, rare or declining species, ecosystem or habitat is found in the area
- 2) the area contains a special or rare natural feature
- 3) the area is of outstanding natural beauty
- 4) the area contains a declining agricultural habitat type
- 5) the preservation of a certain habitat or species to a favourable conservation status requires the protection of the area
- 6) the area is otherwise so representative, characteristic or valuable that its protection can be justified in terms of the preservation of biological diversity or natural beauty

Some reserves (such as certain areas of old-growth forest, protected woodland or areas reserved on district plans, which are protected according to decisions made by the Finnish Forest and Park Service, as Metsähallitus was previously known, the local authorities or private landowners) cannot, strictly speaking, be considered as protected areas if their designation has not been based directly on nature conservation legislation, even though they may have been designated primarily to conserve nature.

Similarly, other designated areas which partially serve conservation aims, but have been designated on the basis of other types of legislation (i.e. eskers protected under the Land Extraction Act, rapids protected under the Act on the Protection of Rapids, national hiking areas protected under the Outdoor Recreation Act, waterfowl preservation areas protected under the Hunting Act and wilderness areas protected under the Act on Wilderness Reserves) cannot in this sense be classed as protected areas. Neither are all the protected areas established under the Nature Conservation Act itself in fact nature reserves (e.g. protected valuable landscapes). Additionally, some areas included in the Natura 2000 network (see section 3.6) may not necessarily qualify as protected nature reserves as defined in section 3 of the Nature Conservation Act, unless they are separately designated as such.

3.1 International definitions

The need for nature reserves is widely recognised around the world, and many countries have designated such protected areas. In particular, an extensive and highly valued international network of national parks has developed over the century.

In order to develop and coordinate a coherent global network of protected areas, while also standardising conservation concepts, a comprehensive list of all the world's most important protected areas is kept. The "United Nations List of National Parks and Other Protected Areas" was set up according to a resolution of the U.N. General Assembly of 1962. The list is updated by the International Union for the Conservation of Nature and Natural Resources (IUCN), of which Finland is a member. The IUCN's World Commission on Protected Areas (WCPA) defines and classifies areas approved for the list. The present classification system dates back to 1997.

3.2 National parks

All of the national parks designated in Finland up until the end of 1996 are areas established under the old Nature Conservation Act (71/23) as special nature reserves, and defined as national parks on their designation. So far just one national park, Kurjenrahka, has been established under the new Nature Conservation Act.

The conservation practices in Finnish national parks largely meet international recommendations (see section 3.1). The four smallest national parks (the Eastern Gulf of Finland, Rokua, Petkeljärvi and Liesjärvi) are all less than 1,000 hectares in extent, and thus too small to qualify for the U.N. list. Pallas-Ounastunturi and the Urho Kekkonen National Park do not qualify for inclusion in the national parks section of the list because they are inadequately protected. It is somewhat debatable whether other national parks in northern Finland meet the international criteria, since local residents have extensive rights, including hunting and fishing rights, which often exceed the permissible rights of the original inhabitants to maintain their traditional way of life.

National parks and their functions are defined in Finland as follows:

A national park is a large, state-owned nature reserve characterised by its diverse or otherwise significant natural features, considered valuable at least on the national level. It must also constitute a significant natural attraction or be important in terms of increasing public awareness and interest concerning nature. It is to be permanently preserved by excluding economic activities which would disturb nature, and it should be maintained in, or restored to, its natural state. Under the new Nature Conservation Act, new national parks must be larger than 1,000 hectares.

The most important function of national parks is (1) **conservation**. Conservation is aimed at both the abiotic and biotic original natural features of an area, including species and ecosystems, but may also aim to preserve traditional landscapes shaped by human activity, and the ecosystems and constructions associated with them. National parks may stray from the generally accepted principles of protection where the maintenance of a traditional way of livelihood such as reindeer husbandry is concerned, as long as these activities do not result in significant or lasting damage regarding the wider conservation aims.

Within the limitations imposed by the conservation aims, national parks must also contribute to (2) **environmental education**, instruction and raising environmental awareness by providing the opportunity for independent and guided nature studies. National parks should also facilitate (3) **scientific research** and enable monitoring work on the state of the environment. They should also offer opportunities for (4) **outdoor recreation** by providing a public open space, and opportunities for hiking and experiencing natural surroundings.

The central aim of the management of national parks is that they should fulfil as well as possible all the functions listed above. National parks should therefore be developed towards fulfilling these various functions and providing a wide range of opportunities for their use. The conservation function must be given priority, however, therefore all other activities must be adapted so that the conservation aims are not endangered. Since there are great differences between Finland's national parks in terms of their size, location and characteristics, they are developed to different levels of use intensity, accessibility and visitor numbers.

3.3 Strict nature reserves

Strict nature reserves are general protected areas defined on their designation as strict nature reserves according to the old Nature Conservation Act. So far no new strict nature reserves have been designated under the new Nature Conservation Act. Following the shift to the new legislation, the regulations on the protection of strict nature reserves are in section 13 of the new act, but various exceptions set out in the decrees designating strict nature reserves areas are still in force.

Under the new Nature Conservation Act strict nature reserves must have a significant role in guaranteeing the continuation of natural succession, in scientific research or in education. In strict nature reserves visitors may only leave the marked paths, roads or areas with the permission of the authority or institute responsible for the administration of the reserve. Numerous exceptions to this complete level of protection have been decreed, however.

Although the old Nature Conservation Act expressed an attempt to preserve strict nature reserves untouched, this cannot be considered as the sole aim of the

management of strict nature reserves – and this was not the intention behind their designation. Many strict nature reserves contain valuable habitat types and traditional agricultural habitats the protection of which requires continuous management. Such areas make up only a small part of the total area of strict nature reserves, however.

In the international IUCN classification of reserves, Finland's strict nature reserves mainly come under category I : scientific reserves/strict nature reserves.

Strict nature reserves resemble national parks in that they are nationally significant, normally extensive and diverse protected areas. Their role is, however, somewhat different. In strict nature reserves the conservation and research functions dominate. The opportunities for environmental education and instruction are limited to a few reserves, and even there they are constrained according to the requirements of conservation. The strict nature reserve at Kevo is, however, important as an attraction and for hiking, and in practice the area is managed as something between a strict nature reserve and a national park. Three further small strict nature reserves, Sinivuori, Karkali and Vesijako have been protected as scientific reserves consisting of small areas of valuable habitat types.

Strict nature reserves are defined as follows:

Strict nature reserves are state-owned national protected areas, which owing to their great scientific value are to be permanently preserved undisturbed in as close to their natural state as possible*). Public access to these areas is limited, for instance. Strict nature reserves must have a significant role in guaranteeing the continuation of natural succession, in scientific research or in education.

*) Exceptions to this rule apply in the Karkali Strict Nature Reserve, since the area protected consists largely of a traditional man-made habitat type which requires careful management, and also regarding some small man-made features under protection in certain other strict nature reserves.

3.4 Protected Mire Areas

Protected mire areas are special nature reserves protected under the old Nature Conservation Act defined as protected mire areas on their designation.

Protected mire areas have been established primarily to protect peatland habitats, flora and fauna. They are intended to preserve peatland species and examples of the peatland ecosystems they form, along with their associated geomorphological features and landscapes.

The protection of peatland complexes forms the basic framework of peatland protection. An essential aspect of this protection is that paludification and other natural processes should be allowed to continue undisturbed. Important features of peatland ecosystems to be protected include their variability over time, and their changing intricate features and edges, many of which play an important

role in the shifting patterns of alternation and transition between the peatlands themselves and the drier mineral soil islands within them or areas of forest surrounding them.

All peatlands within the protected mire areas are preserved in as close to their natural state as possible. The decrees establishing many of these areas permitted forestry, with certain conditions, on areas of mineral soil within the peatlands. However, following a decision made by the Finnish Forest and Park Service (24.1.1994) forestry has been abandoned in protected mire areas.

Under everyman's right the freedom to walk, camp, pick berries and mushrooms, fish, hunt and otherwise enjoy natural surroundings can only be restricted where they endanger the conservation aims of protected mire areas. On the other hand, only a few protected mire areas are provided with facilities or services to attract visitors – mainly those near built-up areas or alongside well used roads and paths.

Scientific research may also be carried out in protected mire areas. Indeed such studies are especially important for the purposes of comparative studies when the environmental impact of forest drainage or peat extraction on hydrology is being assessed.

3.5 Other protected areas

Other kinds of protected areas than those described above vary greatly in their sizes, characteristics, conservation aims and the relevant management objectives. They may be subject to strict conservation legislation similar to those applied in strict nature reserves (e.g. Annjalonji). They may also contain habitats requiring continuous management (herb-rich woodland reserves in the south), or cultural heritage landscapes (e.g. Telkkämäki). In some areas management is directed primarily at maintaining the outstanding natural beauty of the landscape (e.g. Vehoniemenharju). Decrees establishing nature reserves to preserve areas of old-growth forest in southern Finland naturally do not permit forestry, but in other respects the regulations they contain are reminiscent of those applied to protected mire areas, although the making of campfires and camping are forbidden, and the only activity related to hunting permitted is beating, to drive elk, on the authority of the owner or occupier of the land.

This group also includes a special protected area known as the Friendship Park, established through a joint agreement between Finland and the Soviet Union in 1989. In addition to protecting the area's flora, fauna and natural ecosystems, the project was intended to promote cooperation in the fields of nature conservation, the sustainable use of natural resources, and long term scientific research and monitoring work. On the Russian side of the border this international nature reserve includes the Kostamus reserve. The Finnish side, designated in 1990 as the Friendship Park, comprises five separate nature reserves each established under the Nature Conservation Act: Ulvinsalo Strict Nature Reserve, Juortanansalo-

Lapinsuo peatland protection area, and the nature reserves at Elimyssalo, Lentua and Iso-Palonen/Maariansärkät.

The conservation aims for each of these other protected areas are defined individually, and the decrees designating these areas include specific regulations related to their protection accordingly. All such areas designated so far are special nature reserves as described in the old Nature Conservation Act. In areas established in future under the new Nature Conservation Act the relevant parts of the legislation protecting national parks and strict nature reserves will be followed, and they will be classified as "other nature reserves". One significant new piece of legislation in the present Nature Conservation Act is that Metsähallitus may now designate areas of up to 100 hectares under its own administration as protected areas, and set the regulations related to their protection.

Most of the protected areas in this group will be relatively small areas, established in connection with the Natura 2000 network and other national conservation programmes (e.g. herb-rich woodlands, bird wetlands, old-growth forests). The total number of such areas may eventually be very high. The number of wider, partially protected areas may also rise considerably as the shore protection programme is implemented.

3.6 The Natura 2000 network

In order to achieve or maintain the favourable conservation status of habitat types and plant and animal species listed in the European Union's Habitats Directive (92/43/EEC) and Birds Directive (79/409/EEC), EU member states must each make proposals for a network of protected areas where special conservation measures will be taken, called the Natura 2000 network. This network will include areas designated by Finland for the conservation of wild birds as Special Protection Areas (SPAs) under the Birds Directive, and also areas approved by the EU Commission under the Habitats Directive as Sites of Community Importance (SCIs). The Finnish Ministry of the Environment prepared the proposals for the Natura 2000 network by summer 1998, and in August 1998 the Finnish Council of State made their decision on the contents of the proposals. The protection of areas approved for the network is to be enforced within six years of the approval of the proposals by the Community. Finland's proposals include 1,457 sites covering a total of 4.78 million hectares. About 95 % of the total area included in the proposals consists of previously designated protected areas, wilderness reserves, and areas included in approved protection programmes or otherwise reserved for protection on land use plans.

The protection of areas for the Natura 2000 network can be implemented through administrative measures and under contract law as well as through direct legislation. This in itself is a major departure from previous practice. The areas to be included in the Natura 2000 network differ from existing protected areas in two other ways: protection may not be removed solely by a national decision, and their protection may also have some effect on areas outside the area actually

protected in certain cases. Not all the sites to be included in the Natura 2000 network will require designation as protected areas under nature conservation legislation, as in many cases the level of protection provided under the Land Extraction Act, the Water Act, or other legislation will be sufficient. Where necessary, specific and detailed land use plans must be drawn up for some areas. The legislation on Natura 2000 sites can be found in Chapter 10 of the new Nature Conservation Act. The principles of these regulations are only intended to apply to those Natura 2000 sites defined as areas protected for nature conservation under Chapter 3 of the Nature Conservation Act.

3.7 Sites in international protection programmes and agreements

The Ramsar Convention (Convention on Wetlands of International Importance). Finland is a signatory to the 1976 Ramsar convention on wetlands of international importance as waterfowl habitats (Statute Book of Finland 44/76). Finland has 11 internationally important wetland sites listed in the annex to the convention, and is thus committed to attempting to protect these wetlands against any changes which would be harmful to migratory wetland birds. Finland intends to add new sites to this list.

Many of the sites presently on the list are protected areas designated under the Nature Conservation Act. The following sites are owned, or partly owned, by the State: Söderskär protected area (mainly privately-owned, but partly administrated Metsähallitus and the National Board of Navigation), Långören protected area (administrated by Metsähallitus), Lågsjär (administrated by the National Board of Navigation), Viikki protected area (partly administrated by the Ministry of Education), Patvinsuo National Park (administrated by Metsähallitus), Martimoaapa-Lumiaapa-Penikat protected area (administrated by Metsähallitus) and Koitelaiskaira (administrated by Metsähallitus).

The Convention Concerning the Protection of the World Cultural and Natural Heritage, World Heritage Convention. Finland signed this general agreement in 1987 (Statute Book of Finland 364-87). The agreement contains a list of sites considered to be part of the world's valuable cultural or natural heritage, known as the World Heritage List. Sites submitted for inclusion on this list must be approved by an international committee on the basis of proposals submitted by the country concerned, in Finland's case by the Council of State. The selection of Finnish natural heritage sites has been carried out since 1988.

The Bern Convention on nature conservation in Europe. This international agreement, ratified in 1982, is designed to protect Europe's wild animal and plant species and their habitats. The convention places special emphasis on the protection of critically endangered and endangered species. Annexes to the agreement list plant and animal species whose populations and habitats must be preserved. The lists include, for example, the wolverine, red-throated and black-throated divers, and certain birds of prey and owls. No Finnish habitats have been listed

here for possible protection as yet. Regarding wolves and brown bears, two species covered by the convention which are found in protected areas in Finland, Finland has been granted a proviso, and is not committed to protect these animals.

The Bonn Convention on the Conservation of Migratory Species of Wild Animals. Finland is also a signatory to this convention, ratified in 1983, covering wild species which regularly migrate between different countries. Protective measures aim at preserving the species listed in the annex to the convention, and their habitats. No Finnish habitats have yet been specifically listed for possible protection under this convention, either. However, many protected mire areas and nationally significant bird wetland areas, for example, are important from the point of view of the aims of this convention, as the breeding areas and migratory resting places for bird species listed in the convention.

Biosphere Reserves. Biosphere reserves are to be established as part of the international research and cooperation project *Man and Biosphere*, coordinated by UNESCO. Two biosphere reserves based on existing national parks and strict nature reserves have been established in Finland. The Southwestern Archipelago National Park forms the core of the Archipelago Biosphere Reserve. The Northern Karelian Biosphere Reserve is based on the Patvinsuo and Petkeljärvi National Parks and the Koivusuo Strict Nature Reserve.

4 MANAGING HABITAT TYPES AND SPECIES

4.1 Preserving the natural state

The main principle involved in the management of protected areas is not to interfere with natural processes without good reasons related to nature conservation.

Most of the total area under protection is kept in as natural a state as possible *). This means that ecosystems can develop and change through **natural processes** freely, according to the laws of nature, without any interference from people. One especially important function of protected areas is to guarantee the undisturbed action of natural processes which are normally prevented or resisted outside protected areas (e.g. paludification, flooding, the decomposition of humus, the decaying of timber, storm damage and even natural forest fires, as far as other requirements permit). Such natural areas should be adequately preserved in areas of all habitat types in all vegetation zones.

*) The natural state of an area can be defined in many ways. In this context it means a theoretical natural state under which there is no human influence on ecosystems (as in uninhabited regions before industrialisation), or under which human influence is no greater than that of some other similar animal species established within a balanced ecosystem.

Even in nature reserves, it is impossible to achieve a completely natural state. Mankind induces changes in their state, whether directly, through either the use of such an area for educational activities, research or outdoor pursuits, or through the commercial utilisation of the area, or indirectly, as a consequence of temporary changes in conditions induced by human activity outside the protected areas themselves, or through the spread of pollution. The management of protected areas aims to minimise such impacts.

Many of the wider environmental changes induced by mankind, such as climate change, the acidification of the soil and water bodies, or the permanent addition of exotic species into natural ecosystems, also inevitably affect ecosystems in protected areas. In many cases it is futile to attempt to prevent such impacts through management, owing to the excessive costs or undesirable side-effects involved, even where this might be theoretically possible. Consequently, in managing a protected area, it is normally necessary to adopt the concept of a "new natural state", which differs from the area's "original natural state". Special attention must then be given to the protection of the species originally found in the area, however, in particular those threatened species which suffer from these changes.

Measures to preserve the natural state in protected areas include:

- a) planning land use and the location and organisation of activities, through the provision of services and facilities, for example, according to the principles of land use zoning and distribution, so that natural areas of as great an extent as possible remain untouched
- b) restrictions on access or other activities to control visitors, and to reduce erosion and disturbance to wildlife
- c) supervision of visitors to protected areas
- d) providing guidance, instruction and information to influence peoples' views and behaviour
- e) research and monitoring regarding the natural state and any changes taking place

In protected areas natural processes are allowed to operate unimpaired, so that the natural changes which occur within ecosystems are themselves protected. For the purposes of research, it is important to monitor how these changes, such as land uplift, paludification and overgrowing, occur, while also observing trends induced by changes in the macroclimate. Normally no attempts are made in protected areas to interfere with the effects of climate change, acidification and other changes which affect the whole ecosystem (except in the case of species requiring special protection, see section 4.5), even though these changes may be caused by human activity. In such cases protected areas are even more important than previously for the purposes of comparative research.

Occasional natural forest fires of varying destructive force have always been an integral part of taiga ecosystems. The burnt and dead wood and the different ages of trees in woodland at different stages of succession which are the conse-

quence of occasional burning all add to the ecosystem and species diversity of natural forests. Nowadays, forest fires are put out as soon as they start, and the younger stages of natural succession which follow forest fires do not develop at all. Many plant and animal species which depend on areas of woodland being burnt from time to time have become scarce or even threatened.

From the point of view of conservation aims, it would be preferable if fires started by lightning were allowed to burn naturally to a certain extent. Often, however, this is not possible, where the protected area is small, for example, in which case the fire could too easily spread into other areas. If natural forest fires cannot be permitted to rage, then the stages of succession which follow burning must be recreated systematically, by reproducing the effects of natural forest fires through planned and controlled burning. Since one central aim of protected areas is to preserve the older stages of succession in natural woodland ecosystems, such areas are generally not selected for such measures. The controlled burning of woodland areas in practice only affects a small fraction of the total area under protection, primarily areas of forest which have been commercially managed.

Attempts must be made, whenever possible, to minimise changes in areas in the vicinity of protected areas which might affect the protected areas themselves, by influencing the planning of roads, forestry projects, and land use in general. Metsähallitus, however, has little power to influence land use outside state-owned land and the protected areas themselves in order to prevent changes affecting ecosystems within protected areas, so an unavoidable ecological buffer zone tends to form just inside the boundaries of protected areas, in effect reducing the area truly under protection. The implementation of the Natura 2000 programme will mark a significant improvement in this respect for protected areas included in the network (see section 3.6).

Reindeer may graze in all of the protected areas in northern Finland except Malla Strict Nature Reserve. Reindeer greatly affect ecosystems wherever they graze. An international evaluation report assessing the state of Finland's protected areas expressed strong doubts that the pressure on ecosystems caused by reindeer grazing is not ecologically sustainable. Consequently, in protected areas in regions where reindeer husbandry is practiced, adequately extensive areas of different biotopes should be fenced off to keep out reindeer, and monitored for comparative purposes. Metsähallitus has virtually no other means to influence reindeer grazing, even where its impacts are detrimental to natural ecosystems. Fencing schemes require close cooperation with reindeer owners' associations. Under the new Nature Conservation Act, however, the authority or institute may now limit the grazing of reindeer in strict nature reserves for reasons related to scientific research or other special considerations. This legislation will only cover any strict nature reserves which may be designated under the new Nature Conservation Act, however, and does not affect existing strict nature reserves designated under the provisions of the old act.

4.2 Habitat restoration

4.2.1 *General principles*

Most of Finland's protected areas were to a varying extent utilised economically before their designation, and economic activities have affected their ecology. **Habitat restoration** work aims to bring areas back as close to their natural state as possible, or at least to get them to a stage of succession from which the habitat itself will be able to revert through natural processes back to its natural state. Such restoration work can involve a one-off task or a series of measures following which the area is left to natural processes.

The Finnish countryside has been most widely utilised for forestry, which has been practiced in virtually all of Finland's protected areas before their designation.

This has involved:

- felling, preventing the formation of dead wood and changing the proportions of tree species, the age structure, state and patterns of forests
- planting and sowing, changing the proportions of tree species and their genetic make up
- ploughing and landscaping, affecting the soil and soil organisms and smaller relief features, for instance
- drainage, lowering the water table to dry out areas of peatland, affecting peatland flora and fauna
and changing the hydrology and water quality of areas downstream, drying up springs etc.
- clearing out streams and rivers to facilitate drainage or log floating, affecting aquatic ecosystems and water levels in water bodies
- building forest roads, fragmenting previously continuous areas of forest and increasing traffic and disturbance in uninhabited areas

The greatest need for habitat restoration in protected areas, in terms of the total area involved, is in areas of commercially managed forest. The main aims of restoration work are 1) to speed up the process by which a habitat reverts to its natural state wherever this would naturally occur too slowly with regard to the conservation of ecosystems, as is the case in many protected areas in southern Finland, and 2) to reverse the pattern of change in areas of habitat where human activity has altered natural processes, as is the case in many areas of drained peatland, which are no longer true peatlands, ecologically speaking, since peat is depleted rather than allowed to accumulate naturally.

Slash and burn cultivation was also once very widespread in Finland, but its traces are gradually disappearing from today's forests and there is no longer any need for related restoration work.

In places some small, but locally significant natural habitats in protected areas have been affected before their designation by the clearance of woodland to make cropland and pastures, and by subsequent drainage, cultivation and grazing. Some of these areas which contain valuable landscapes or species can be managed as traditional agricultural landscapes and biotopes (see section 4.4). Other areas of farmland are normally left to nature, and become overgrown. In former areas of herb-rich woodland special restoration measures may be needed. This is quite a new type of restoration work, and at this experimental stage detailed research and monitoring work are always necessary.

Many protected areas include lakes and ponds where the water level has been lowered to create more farmland or reduce the risk of flooding. Restoration work aims to raise water levels to previous levels and then leave such lakes and ponds to natural processes. In order to protect certain areas classed as bird wetlands, for example, other measures may have to be taken repeatedly (see section 4.5), in which case the work can no longer be considered as habitat restoration.

Protected areas also contain many forest roads and tracks which are no longer needed for the use and management of the areas. All such roads are to be closed to traffic and allowed to become overgrown. The growth of seedlings and the restoration of natural vegetation can be accelerated by breaking up the road surface or by digging up and removing the sand or gravel of the road bed (in peatlands, for example). The ditches alongside roads should be filled in, and natural water courses should be reopened wherever roads have blocked them.

Abandoned gravel pits of any great extent should be landscaped where necessary and allowed to become overgrown naturally by plants and seedlings. Smaller, older gravel pits, already partly or totally overgrown, sometimes known as household gravel pits, should be left undisturbed in protected areas.

Some ecosystems, landscapes and constructions created or changed by people are in themselves worthy of preservation for biological or cultural historical reasons, and there need be no attempt to achieve the natural state where such features are concerned. According to specific plans made for such features, they will either continue to be managed or be left as they are to natural processes (see section 4.4).

The precautionary principle should be observed in all restoration work. The likely risks and benefits of restoration should be evaluated. Restoration work must not endanger the valuable protected features of an area. The main principle of restoration is that no measures need be taken if changes induced by natural processes are currently moving in the right direction anyway, and will lead quickly enough to the reestablishment of a natural state similar or comparable to the original natural state, regarding the conservation of natural populations or valuable landscapes.

When restoration measures are undertaken, they should be directed to areas where the need for nature conservation is greatest, and the risks smallest. When

examining the conservation benefit, the wider interests of biological diversity must be considered, and the need for restoration should not be resolved only according to local considerations, for instance.

Resorting to restoration measures always requires an approved plan. Smaller sites may be included in a master plan. More extensive areas should be planned separately. In a restoration plan a protected area should be examined as a whole. In this way restoration measures can be directed at the most important features. Drainage basin surveys make a good basis for such plans. They facilitate an assessment of both peatlands and the small water features linked to them. It is also worth planning the restoration of peatlands and forests together.

Restoration measures taken must always be recorded, and their success must be monitored. If necessary, complementary or corrective measures may then be taken. If restoration work is being attempted in a new type of site, habitat or situation, where there is no comparable researched information available, a suitable research and monitoring project should be integrated into experimental restoration work.

4.2.2 Restoring peatlands

In areas of natural peatland part of the vegetation never completely decomposes, but instead forms peat. Peat formation is supported by a moist climate and a high water table. Peatland ecosystems in Finland have been most disrupted by the drainage of peatland for forestry. Drainage lowers the level of the water table, and consequently the peat starts to decompose instead of accumulating, and the whole process of paludification is turned into one of dehydration and the decomposition of peat. The lowering of the water table directly and indirectly affects peatland vegetation and fauna, as well as the overall appearance and ecology of the peatland landscape.

In peatland restoration the aim is to comprehensively restore the area's landscape, flora and fauna. Returning the hydrology of the area to its state before any drainage work was carried out is a fundamental requirement for peatland restoration. In restoring peatlands the hydrological conditions created must put an end to the dehydration and decomposition of peat, and saturation and paludification must resume. If the drainage of the area is only quite recent, it is likely that restoration work can help the area revert to its original prevailing peatland habitat type. The longer the area has been drained, the more difficult it is to fully recreate the original state of the area before its drainage. In such cases, the aim of restoring the area to a "new natural state", different from that of the peatland habitat type which prevailed in the area before drainage, but nevertheless recognisable as some other peatland habitat type, and where the process of paludification is resumed, will be acceptable.

Only rarely will a drained area of peatland recover unaided to the extent that the paludification process resumes. Although the ditches dug through the peatland

may become overgrown and blocked to some extent, they will still generally manage to drain the melt-water from the spring thaw away from the area. Furthermore, the denser tree cover often leads to the loss of so much water through evapo-transpiration that saturation and paludification will not occur.

In southern Finland and the Suomenselkä-Pohjanmaa region all areas of peatland in protected areas are to be restored, no matter how great the changes caused by their drainage have been in some places. In some exceptional cases, however, the new habitat created may have greater value in conservation terms than the habitat type that would develop after restoration work. Special efforts will be directed at restoring certain habitats, such as the borders of raised pine bogs.

Elsewhere in Finland, peatlands in protected areas previously drained for forestry should also generally be restored. Some of the most urgent – and unfortunately also some of the most difficult – sites to restore are peatlands which were originally densely wooded, such as spruce mires, and nutrient-rich peatlands, spring-fens, the transitional zones between peatlands and areas with mineral soil, drained areas which affect the run-off in the catchment areas of raised bogs, the borders of raised pine bogs, the habitats of threatened peatland species and peatlands with special landscape value. As well as examining the smaller features and individual details of peatland areas, their wider significance should also be assessed as a whole. In this respect, areas to be restored include the wider ecological entity, formed by the mosaic landscape of peatland areas interspersed with areas of woodland on mineral soils, which has in many places been lost. It is always important to restore recently drained areas, where the forest cover has not yet been affected, as quickly as possible. This kind of restoration work is rapidly accomplished and relatively inexpensive.

The basis for a peatland restoration plan should be an entire peatland system. This may include various catchment areas, which can also extend into wooded areas with mineral soils. Where possible attempts should be made to restore at least the hydrological aspects of the whole catchment area of the entire peatland system. Presently this is often impossible in practice, due to local land ownership conditions and the way the boundaries of the protected areas have been drawn up.

The restoration of peatlands in practice requires a detailed understanding of the hydrological and ecological conditions of each peatland area, so that the right restoration measures may be selected. More extensive areas of peatland can be restored part by part. Generally, drainage ditches are either dammed or blocked to raise water levels to those prevalent before drainage. Tree stands which have grown or thrived since drainage can be removed partially or totally. This wood may be used as necessary within the protected area, or sold. In areas of peatland which originally had a dense cover of trees, particularly spruce mires, the whole tree cover is left intact during restoration. In smaller protected areas and around the edges of larger protected areas, care must be taken that nearby areas of private land do not become waterlogged as a consequence of restoration work.

More details of peatland restoration are available in the following booklets:

Metsäojitettujen soiden luonnontilan palauttaminen (series A, no. 7)

Metsäojitettujen soiden ennallistamisopas (series B, no. 25)

A new guide will be published in early 2000.

4.2.3 Restoring woodland

The aim of restoring areas of woodland in protected areas is to accelerate the achievement of the natural state in areas previously utilised commercially, thus preserving the specialist woodland species of each area. The longer term goal of restoration is the creation in protected areas of ecologically coherent, self-sustaining areas of woodland, where the natural dynamics of woodland ecosystems are the central forces behind changes, and where specialised woodland species can thrive.

Particularly in southern Finland, areas of woodland in protected areas have often been utilised commercially for long periods before their designation. Many of these areas are young artificially regenerated forest, or more mature but repeatedly commercially managed forest, which differ considerably from any of the stages of succession found in natural woodland. There are few broad-leaved trees or dead trees, and the trees are uniform. The whole structure of the forest landscape has been changed.

The achievement of a natural state in previously managed woodland is often a very slow process. The formation of decaying trees may take several decades, for instance. In the meantime, the species dependent on decaying wood may disappear from the area, since no suitable habitat is available.

Restoration work should aim to accelerate the development of the natural state of woodland. This means both increasing the elements (e.g. large decaying trees) and structural aspects (e.g. the distinct layering of tree growth) typical of natural woodland, and also accelerating the processes prevalent in natural forests (e.g. the death of trees).

The main measures taken to restore woodland are:

- helping deciduous saplings to establish themselves in young managed forests by making small clearings; mixed woodland will develop, and natural thinning will later shape their structure
- in more woodland areas the formation of a continuum of wood at various stages of decay should be set into action with the help of various measures involving deliberate damage to trees; as trees die, clearings open up, and the area begins to develop a more varied structure
- the stages of succession of natural woodland can be started off with the help of artificial forest fires; this also results in the formation of burnt wood

The artificial reproduction of forest fires is mainly carried out in areas of woodland which have been utilised commercially (see also section 4.1). The aim is to reproduce the same conditions that would follow a natural forest fire in an area, resulting in plenty of wood burnt to varying degrees and dead wood, with possibly some living wood left as well. Areas which have evidently escaped previous forest fires are not burnt.

Decaying wood is a central factor in terms of the conservation of species, and increasing the amounts of decaying wood is a primary aim of restoration. Therefore, the removal of trees should not be linked to restoration work. The only exception is connected to reproducing forest fires: If trees must be felled first for the burning to succeed, the sale of the timber to generate funds for the work can be justified. In such cases, however, at least half of the trees originally in the area should be left.

Attempts to reduce the fragmentation and abrupt contrasts in woodland landscape patterns caused by commercial forestry should be integrated into restoration work. The planning of restoration measures should aim to replace the fragmented patchwork of landscape patterns with more uniform, wider continuous areas. In this way ecologically uniform woodland entities developing towards the natural state will be created. Where woodland restoration is combined with peatland restoration, the active, ecological interrelationship between woodland and peatland will be recreated. This will also help to start of the development towards the natural state of the transitional boundary zones between woodland and peatland areas.

Restoration work will be directed towards where it is most needed in terms of the conservation of the area. For example, the first stages of the work should be aimed at the areas around valuable old-growth forests. Most areas of woodland in protected areas will be left to develop towards the natural state without interference.

The precautionary principle should be observed in the restoration of woodland. Building up knowledge from research findings is a slow process, and the affects of restoration work on species are still largely unknown.

4.3 Exotic species

If an exotic species has spread or been introduced into a protected area due to human activity, this reduces the degree of the natural state; the more so, the commoner the species becomes or the greater effect it has on the ecosystem. In principle, attempts should be made to eliminate exotic species, at least from areas intended to be preserved in their natural state.

The question as to whether to start to try and eliminate such a species must be resolved on a case by case basis, and measures to do so must be planned systematically. The issue is normally clear if the species is obviously a recently arrived

“exotic”, if its elimination is possible in practice, and if it will not disappear of its own accord without such measures being taken (e.g. a plantation stand of shore pine or a non-native variety of whitefish introduced into a small lake). The elimination of an exotic species may be justified where it clearly endangers a native species requiring protection (e.g. the Canadian beaver within the range of the European beaver).

In other cases, however, where an exotic species has become indelibly established in the wild in Finland (e.g. the muskrat, the mink, the Canadian beaver, the white-tailed deer and many plants brought to Finland by people), there is no point in taking steps to eliminate it, unless the species represents a threat to species or ecosystems requiring special protection, or where there is little or no hope of permanent or long term results.

New arrivals will not be considered as exotic species if they might as well have spread naturally into an area, even though human activity may have helped them to become established more rapidly (e.g. the roe deer).

4.4 Managing man-made habitats and landscapes

Protected areas contain a wide range of different traditional landscape features and environments shaped by human activity, known as **heritage landscapes**, which are related to agriculture, forestry, traditional livelihoods or transport, for example. These are valuable features in terms of their significance to ethnology or the study of traditional livelihoods, or for their protected buildings or their landscape value. Heritage landscapes, and the various stages of development which arise as they revert back towards their natural state, also increase the number of species and the biological diversity of protected areas. They additionally provide suitable habitat for many threatened species.

One function of protected areas is to preserve and maintain samples of such habitat types created by former utilisation of the countryside, along with their characteristic species, buildings and structures. Some protected areas have been designated specifically for this purpose.

Due to their nature, the function of heritage landscape conservation in protected areas on state-owned land emphasises the importance of small features and structures related to the various ways remote rural areas and habitats have been utilised, such as fishing, hunting and trapping, reindeer husbandry, crofting in remote areas, shifting pastoral farming, slash and burn farming, tar-making and traditional logging. Protected areas have a key role in the preservation of such features that have become an inseparable part of Finland’s natural environment.

The heritage landscape features to be restored and managed should be selected so that they form a varied and representative body, emphasising the small features of the landscape as described above, within the framework of protected

areas. In particular, those environmental features which cannot be preserved elsewhere than in protected areas should be given preference during selection.

Heritage landscapes are worthy of protection due to their significance for many rare and threatened species and plant communities (grazed forests, woodland pastures, various types of meadows, dry meadows, clearings, woodland previously burnt periodically for slash and burn farming, herb-rich meadows used for cobbing, grazed shores and early strip fields), as well as for their landscapes, historical structures and ethnological value. Such features are additionally interesting for visitors or valuable for educational purposes, and they contribute towards research into traditional working practices and skills, and their maintenance. The cultural heritage landscapes within national parks are particularly well suited to restoration as traditional landscapes due to the importance of national parks as tourist attractions.

The general aim of the management of man-made areas and features selected as heritage landscapes is to maintain and manage them using methods as close to those originally used as possible, as part of Finland's national cultural heritage, and as features which enrich the countryside and increase the attractiveness of protected areas. Management techniques should be defined accordingly. Continuity and long term management are vital, as is the proper planning and documentation of the work carried out. If systematic management cannot be organised, it is preferable to abandon the site and let it become overgrown naturally, or to decide to manage it more simply without trying to restore it completely. Such **naturally managed areas** defined in land use and management plans normally only make up a small part of the total protected area. They are to be clearly separated from areas to be preserved in their natural state, and work must be carried out according to long term plans, and precisely recorded. Natural management must be based on intensive research and development work related to the methods used.

Management techniques used in heritage landscapes include scrub clearance, mowing, cultivation, grazing and slash and burn farming. Work being done using traditional methods can simultaneously be an attraction for visitors, while it can also be done by groups of local volunteers and be quite a social occasion. If traditional methods cannot be used, more modern methods should be chosen so that the end results are the same in ecological terms.

Certain protected areas have long been managed as parks for recreational purposes, with the aim being a beautiful landscape with impressive trees and detailed floral features (e.g. Vehoniemenharju and Langinkoski). Such management practices will be continued as long as they are appropriate. In popular places with panoramic views in exceptional cases individual trees may be cut down to improve the view. Wider sectors of woodland cannot be cleared, however.

Cultivated plants and species introduced by people which have since disappeared from an area may be returned to the area, and in the reconstruction of a heritage landscape other species suitable to local conditions may be introduced, even if it is not known for sure whether they have ever lived there previously.

Some species associated with people which arrived long ago, or were deliberately introduced (e.g. wild garlic, crab apple and hazel) may even require special protection. The smallholdings to be restored as heritage landscapes can also usefully serve as gene banks for traditional cultivated plant strains and domestic animal breeds.

The maintenance and management of heritage landscapes often involves great changes in their ecosystems. Detailed inventories must be carried out on sites before any work is done, so that no accidental damage is done in terms of nature conservation. These management projects must also include varied research, the careful recording of measures taken and the monitoring of sites.

4.5 Protecting and managing species

With the help of habitat management measures it may be possible to artificially maintain the habitats needed by species requiring protection, and add to the species and overall biological diversity of an area. Such management techniques aimed at maintaining certain species or habitats should only be applied in protected areas in special cases, and normally only over small areas.

Management may consist of regularly repeated or continuous measures, for example scrub clearance, mowing or grazing (the felling of spruce trees overshadowing herb-rich deciduous growth, clearing meadows to prevent them from becoming overgrown, clearing water plants to create areas of open water in bird wetlands, etc.). In such cases it is important that enough areas of comparable habitat are left to develop naturally.

In the management of protected areas special consideration should be given to **threatened species and species under strict protection** (as defined in Sections 21 and 22 of the Nature Conservation Decree). Special attention should additionally be given to:

- species which are rare outside protected areas; the significance of protected areas in their preservation is exceptionally high
- species which are easily disturbed or vulnerable to illegal collection
- other species which are important in conservation terms, and in danger of disappearing from the protected area, or whose population in protected areas is low

The aim of the protection of species is that no species should disappear from a protected area, if the realistic ecological conditions for its preservation exist. The preservation of every single species presently found in the protected area need not always be an aim, since the disappearance of species which are insignificant in conservation terms (being common elsewhere) as a consequence of the developing natural succession is not normally harmful.

Where a valuable species as described above is in danger of disappearing measures must be taken to preserve its local population. The protection of such species requires knowledge of its requirements and applicable management techniques, as well as the presence of a local population. The information about many valuable species is still inadequate and difficult to obtain.

In special cases, a threatened species may be introduced into a protected area where it may not be present already, when the habitat in the protected area provides the only hope, or the best readily available hope in the circumstances, for its preservation. Threatened species should only be introduced into new areas in this way when this is justifiable in terms of the biology of their conservation, e.g. when a species' habitat is under the threat of disappearance, or in order to preserve its gene pool. Before such introductions are carried out, evaluations must be made of the effects on the areas they are removed from and introduced into, the suitability of the new area for the species, and the requirements of the new or increased population in terms of management and monitoring in the new area, in addition to the biological factors described.

Other issues related to protection and management may arise, such as the removal of competing species, the mobilisation of seed stores in the soil, increasing plant populations through seeding and taking cuttings, introductions, reintroductions and planting, the construction of nest-boxes, winter feeding, fishing restrictions, hunting bans, restricting access, keeping populations secret and guarding nesting sites. Artificial feeding – leaving carcasses or feeding birds in the winter – is only permitted for the purposes of nature conservation, ecological instruction or research. Since another aim of protected areas, in addition to preserving valuable species, is the preservation of ecosystems in as close to their natural state as possible, the side effects of such measures in relation to both these aims should be considered (e.g. the effects on other species of leaving carcasses intended to feed eagles).

Metsähallitus's Nature Publications series includes the following related publications:

Lintuvesien kunnostus ja hoito (Series A, no. 45)

Lehtojen hoito-opas (Series B, no. 26)

5 PROTECTING AND MANAGING THE BUILT ENVIRONMENT

Most of the old structures in protected areas are isolated buildings or clusters of buildings, barns, fences or other constructions. They are normally closely associated with small areas of cultivated land, an open meadow, a seasonal home, a fishing camp, a reindeer corral, or some other small landscape feature around them. In protected heritage landscape sites, buildings and other structures are also restored and maintained in their original state or in some state of restoration close to their original state. The relevant plans are drawn up in cooperation with the museum authorities.

The buildings in heritage landscapes serve as attractions for visitors. Once restored, they can be used for instruction, as facilities for visitors or for services related to the management of the area, or in exceptional cases for other purposes related to the administration of the protected area. This is on condition that this new usage does not result in any damage to the character of the buildings under protection or associated features.

Newer buildings and structures needed for the maintenance of the area, for guidance and instruction, to provide services for visitors such as hikers, should be planned and located so that they do not detract from the protected heritage landscape areas as a whole.

If a building is demolished in a protected area, its foundations or some other suitable remnant should be left as evidence of different stages of land use. If a historically significant old building in ruins is not repaired, it may be left to fall further into disrepair instead of being demolished, and protected if necessary.

The Finnish Forest and Park Service's Nature Publications Series includes a publication related to protected buildings under their administration: "Kämpiltä ke-lokyliin – Metsähallituksen suojellut rakennukset" (series A, no.44).

6 MANAGING ARCHAEOLOGICAL REMAINS

Protected areas contain both prehistoric and historic archaeological remains. As well as being protected under the legislation associated with the designation of protected areas, they are also protected under the Act on the Protection of Buildings (295/63). These sites are supervised by the National Board of Antiquities and Historical Monuments, and their management and signposting is planned in cooperation with this authority.

Archaeological remains in protected areas are primarily protected features, and any disturbance to them – even for research purposes -- can only be permitted with very good reason. The relevant permits may only be granted by the National Board of Antiquities and Historical Monuments.

Some archaeological remains are suitable for use as visitor attractions, as long as their preservation can be ensured despite this usage (e.g. hunting pits, Lappish stone idols, stone circles, rock carvings and paintings etc.). Such features can be signposted, and where necessary they might also be protected with sheltering vegetation cover, while vegetation can be cleared where it could damage the feature or where it obstructs a view of it.

Metsähallitus's Nature Publications series includes a publication related to the management of archaeological remains: "Kiinteiden muinaisjäännösten hoito-opas" (series B, no. 2).

7 NATURE INTERPRETATION

Protected areas are a valuable national asset in a similar way to museums, archives and libraries. They allow anyone who wishes to do so to see and experience the natural features of the Finnish countryside. They can also be used for educational purposes and environmental instruction, within the constraints of nature conservation.

Attracting large number of visitors is not an end in itself, however. In organising nature interpretation for visitors and the educational usage of protected areas, the overall benefit in terms of nature conservation obtained from such activities is weighed against the harm caused by visitors to the ecosystems and habitats in the areas, and attempts are made to achieve the best possible overall balance from an environmental point of view.

There are three main functions involved in the nature interpretation and instruction of visitors to protected areas:

- a) to inform the public of any attractions or services in the area, to control the behaviour of visitors and to inform them of regulations in force in the area related to its protection
- b) to describe, in general terms, nature conservation, diversity of nature and its maintenance, and sustainable use of habitats
- c) to spread information on the areas and their natural features, in order to increase the general awareness of nature and to assist educational usage of the area and environmental instruction

Different levels of nature interpretation facilities should be developed in different protected areas, according to their characteristics, their location and the limits set by the requirements of their protection. The main areas to be developed for nature interpretation are the national parks. Other such sites are those protected areas near built-up areas or otherwise easily accessible (e. g. Laajalahti) and protected areas representing habitat types which cannot be found in national parks (e.g. the estuary of the River Laajoki and the Kevo Strict Nature Reserve).

Protected areas should, taken altogether, form comprehensive educational resource. Different areas and the various educational themes chosen for them should complement each other, so that each important element of the natural environment is presented in the respective representative protected areas, and each of the important elements of the Finnish countryside is covered within the educational framework of protected areas.

In all protected areas information on the areas' boundaries and regulations related to their protection should be available. General and educational material and information should be available to schools and other educational institutions in protected areas suitable for meeting local educational needs.

In national parks and other protected areas selected for active educational usage, particular attention should be paid when providing for such activities to the educational needs of children and the disabled. Some parts of these areas may be developed as nature camps, nature schools, school camps, and as suitable destinations for field trips. Protected areas can support educational institutions by providing the setting and basic material for field observation work and for people to experience natural surroundings.

Since nature interpretation makes up one of the main functions of protected areas, access to protected areas, and the general information and guidance provided by Metsähallitus are free of charge, as long as they only involve limited expense (Decree concerning Metsähallitus, Section 9). However, Metsähallitus may charge for specially ordered services and material related to guidance and education. Similarly, authorised private tourist operators may charge for the provision of such services.

The facilities and materials provided for the purposes of nature interpretation in protected areas are:

- a) **information out in the field:** boundary signs and markings, signposts, sign marking and describing natural features, information signs, roofed exhibits, nature trails and observation towers
- b) **visitor centres:** centres providing information, exhibitions, study and lecture facilities; also information cabins, and other visitor information points provided in connection with other buildings. These are often located outside the protected area.
- c) **guides:** guides on duty daily, guides for groups, guided tours and hikes, presentations
- d) **exhibitions:** permanently displayed material and exhibits and temporary exhibitions in visitor centres and visitor information points
- e) **printed material:** free leaflets, publications on sale, handouts, posters, cards and badges etc. Presenting the whole network of protected areas, certain protected areas of special subject of interest
- f) **slides, videos, multivision and computer programmes**
- g) **teaching materials and facilities:** materials related to the protected area, copies of exercises, instructive packages, teaching and observational equipment
- h) **educational areas:** special areas within the protected area reserved and equipped for educational field work
- i) **information and educational services** provided outside the protected area: press releases, presentations, websites, the supply of material and prepared articles to the media and for inclusion in books, participation in exhibitions and trade fairs etc

Nature interpretation activities are generally directed towards encouraging observation of natural features and processes, even where activities and materials organised and provided indoors are concerned.

Issues related to guidance and education are covered in more detail in two publications in Metsähallitus Nature Publication series “Oppimaan luonnonsuojelualueille” (Series B, no. 30) and “Luonto-oppaan opas” (Series B, no. 35), and in a workbook for Metsähallitus customer service staff: “Vaikuttavuutta kustannustehokkaasti” and in the principles of nature interpretation approved on May 4, 2000 by Metsähallitus Natural Heritage Services: “Metsähallituksen luonnonsuojelun luonto-opastuksen periaatteet”.

8 OUTDOOR RECREATION AND HIKING

Protected areas, particularly national parks, also serve as recreational facilities, offering opportunities for walking, hiking, sightseeing, nature study and experiencing the countryside.

The recreational use of protected areas must, however, be constrained by the requirements of nature conservation. The land use and management plans for each area should attempt to define recommended maximum limits regarding the numbers of visitors and recreational use of the areas.

National hiking areas and recreational forest areas have been established in areas administrated by Metsähallitus, respectively according to Council of State decisions under the Outdoor Recreation Act and Metsähallitus decisions, to provide areas for intensive outdoor recreational use. Many local authorities and private organisations also provide outdoor recreational areas and sports and tourism centres. The commercial use of protected areas for tourism will be covered in section 10.6.

8.1. Outdoor pursuits

Outdoor pursuits (e.g. downhill skiing, competitive sports and the use of off-road vehicles) which threaten natural features or disturb wildlife or other visitors to an area, which can be practical elsewhere, and whose main purpose is not related to the desire to enjoy the protected area and its natural features, should be directed outside protected areas (see also section 10.5). Smaller organised activities (e.g. guided walks, orienteering events) practiced with consideration for the natural environment may be permitted in protected areas, as long as they do not involve the use of off-road motor vehicles or special structures of arrangements in the protected area itself.

Some exceptions have been granted to these principles in connection with the designation of certain protected areas, limited either to benefit local residents (fishing and hunting in protected areas in northern Finland), or to small parts of protected areas (e.g. fishing using a reel in Salamajärvi and Seitsemänen National Parks). In protected mire areas in northern Finland, where protection legislation is in general somewhat less strict than in other protected areas, certain outdoor pursuits (hunting, fishing) may be practiced more widely, as long as they do not

cause permanent changes in local environments or harm peatland ecosystems. Similar principles can also be followed in protected areas established to preserve areas of old-growth forest.

Picking berries and mushrooms while out walking, and in many areas angling without a reel or through a hole in the ice, affect ecosystems so little that they may be permitted wherever walkers have access (see also section 10). This can also apply to angling with a single rod, reel and lure. The current Nature Conservation Act considers angling without a reel or through a hole in the ice as comparable activities to picking berries and mushrooms. All these activities will be permitted in protected areas designated according to this new act other than in areas where restrictions to access apply.

The outdoor pursuits in question are primarily light recreational activities and hiking which do not significantly change the state of the natural environment or require the provision of roads, wide tracks or other structures or facilities which would change natural features permanently. Careful consideration should be given to the possible effects of visitors cycling, or riding horses, dog-sledges or reindeer-sleighs. If these activities are permitted, they should be directed onto specific routes of their own, so that they do not disturb other use of the land or cause erosion along paths. Sports activities and the like which are not connected to the intended functions of protected areas, and which can equally well be practiced elsewhere, should not be encouraged in protected areas.

Outdoor pursuits acceptable in protected areas are:

- a) **day-trips**: walking or skiing, and in many areas rowing or canoeing
- b) **camping** or **boating**, based on well-serviced camping areas or natural harbours; with related facilities provided in national parks and certain other larger protected areas
- c) **hiking** or **cross-country skiing**, and related independent camping in the wilder areas of northern Finland's larger national parks and protected mire areas where few facilities are provided
- d) guided walks and hikes for groups
- e) nature camps and hiking camps in larger areas

The recreational facilities provided in protected areas are intended for everyone. Accordingly private holiday accommodation is not allowed. Any private holiday accommodation already in protected areas on their designation is gradually acquired by the state, and old land leases are not renewed.

8.2 Services

Outdoor pursuits which do not disturb the natural environment, such as hiking, cross-country skiing, rowing, canoeing and camping, may be encouraged as suitable uses of protected areas. Whenever indoor accommodation is provided, it should consist of simple log cabins or other such accommodation with modest facilities. Accommodation is normally not provided in smaller protected areas.

For the purposes of these acceptable outdoor pursuits, as well as for the purposes of guidance and education, and in order to direct all such uses of protected areas, paths, resting-places, mooring places, natural harbours, camping areas and car parks will be maintained. In larger and more popular areas camping areas for groups and rental cabins for use by those interested in nature should be maintained, along with open and reservable wilderness huts intended for short stays which can be used free of charge or reserved in advance against a small fee. New premises for indoor accommodation will only be built within protected areas in exceptional circumstances.

New roads may only be built in protected areas for the purposes of guidance and maintenance. Normally, such needs can be met through the provision of parking and guidance facilities along existing roads. Forest roads which are no longer needed are to be taken out of use through restoration measures (see section 4.2.1) or at least by closing them off permanently.

Paths are to be built according to the frequency of use so that visitors stay on the paths and problems with erosion do not affect the surroundings. In stretches of softer terrain and other areas highly sensitive to erosion duckboards or steps can be built. Skiing trails should only be cleared to a suitable width for traditional style cross-country skiing. In some protected areas, trails for skating-style skiing had already been cleared before their designation. Where these trails do not significantly endanger the achievement of conservation aims, they may continue to be used as before. Areas used intensively, such as the surroundings of visitor information points, camping areas and paths, may be subject to excessive erosion. Such areas should be managed, for example by improving their resistance to erosion through planting, or by preventing further erosion and allowing plants to grow over the area. Plants not already found in the area should not be planted for this purpose, however. Where problems related to the use of the area, the consequent erosion, and the size of the area affected become too great, restrictions on the use of the area may be necessary.

Some national parks have campsites for visitors. However, hotels and other higher level tourist services, and usually also campsites and caravan sites are to be located outside protected areas. In exceptional cases basic provisions can be made for parking caravans. As a general rule, the only services for tourists to be provided inside protected areas should be those services intended to help visitors to experience the natural features of the areas.

All the services and constructed facilities should be located in a centralised or zoned way, so that the areas people are guided to remain small, are located at the edge of or outside protected areas, and do not disturb the more valuable natural features of the areas. This zoning principle contributes towards the formation of reasonably large undisturbed areas and helps to minimise the problems caused by the use of protected areas, while also giving various groups of people interested in nature (hikers, day-trippers, families and other groups, educational groups, children, the disabled) the opportunity to experience and benefit from the enjoyment of the natural features of these areas.

Any new structures will be built according to Metsähallitus's principles of natural construction, which means a consistent construction style will be adopted at least within any single protected area. Between areas there may be differences due to the adoption of local styles, but excessively romanticised styles are to be avoided. Decorative flowers and other plants not naturally found in the area may not be planted around any new buildings.

Different protected areas will be developed to provide different levels of facilities according to their characteristics. Minimum and maximum levels of facilities will be set out in land use and management plans. In many protected mire areas and smaller protected areas no managed facilities will be provided.

The employees of Metsähallitus are responsible for various types of construction, maintenance and supervision work in protected areas. On-site accommodation, maintenance sheds and supervisors' huts have to be built for these purposes. In these cases special emphasis must be given to considerations related to the conservation aims, and to the principles of waste management, and because of this, the construction of such buildings within the protected areas, particularly in their most valuable parts, is to be avoided.

Metsähallitus's principles of natural construction are described in Metsähallitus's environmental handbook, which also includes a set of drawings showing examples of suitable constructions.

9 RESEARCH

Protected areas are important research locations, and this significance is increasing as environmental changes accelerate. Protected areas are virtually the only areas where it is possible to do research into the structures and processes of ecosystems in their natural state. Since protected areas are permanent reserves, they also enable the longer term comparison and monitoring of natural trends and environmental changes.

This subject is described in greater detail in a publication in the Finnish Forest and Park Service's Nature Protection Publications Series: "Metsähallituksen luonnonsuojelualueiden tutkimus" (Series B, no. 19).

The research conducted in protected areas can be divided into two main types:

- a) **Research related to the management of the protected area**, e.g. basic surveys, the development and monitoring of management methods
- b) **Research which requires the use of the protected area**, where the area in question offers a suitable research location, the necessary basic information and practical advantages

Metsähallitus keeps in active contact with the relevant research institutes since the protected areas are so important for research purposes. Metsähallitus itself also conducts and contracts the basic surveys and the research work needed for managing protected areas.

9.1 Basic surveys

All protected areas are carefully surveyed to obtain the most accurate possible basic information on the areas' natural features (e.g. geology, geomorphology, vegetation, flora and fauna) and the history of their land use and any cultural monuments and traditions in evidence. This information is then used both to protect the areas' valuable natural and man-made features, and as material for the guidance and education of the public. These basic survey results also provide the basis for further research carried out in the areas, and point the way forward for such research work with regard to conservation.

Conducting the basic surveys takes up considerable amounts of time and resources. By the time a land use and management plan is drafted for a protected area, accurate information at least on the most valuable sites in terms of the protection of the area's natural vegetation and bird life and possible habitats for threatened species must be available. Depending on the nature of the area more exact details may be required on special biotopes and species, or an area's history and previous land uses, for example. More detailed reports are needed when special plans are to be drafted. In any case, it is important to ensure that the use of protected areas does not give rise to irreversible damage to natural features because of any inadequacies in the basic surveys.

Metsähallitus will conduct or contract out the necessary basic surveys and maintain the relevant files and archives.

9.2 Research related to management

To provide a suitable basis for the protection and management of protected areas and the species found in them, other research in addition to the basic surveys will also be necessary, related to the following subjects, for example:

- ensuring the ecological viability of areas (the suitability of boundaries, the risk of disappearance of small populations, the necessary size, number and density of protected areas, buffer zones)
- restoring and maintaining the natural state
- species requiring special conservation measures and their ecology (the sensitivity of animal species to disturbance, species connected to certain successional stages, threatened and rare species)
- management methods related to the occurrence of special biotopes and species

- management methods for heritage landscapes and man-made biotopes (restoration, cultivation and land use methods, meadow biotopes, pasture biotopes and biotopes in areas previously used for slash and burn cultivation and their later successional stages, old cultivated plant strains, traditional Finnish animal breeds and varieties, species found in man-made habitats, landscape management)
- research related to visitors (visitor numbers, expectations and experiences, the influence of guidance, significance for tourism). Metsähallitus have published a guide to visitor surveys: “Kävijälaskentaopas” (Nature Protection Publications, Series B, no. 45)
- changes due to the use of protected areas (erosion, wastes, litter, disturbance, reindeer grazing, fishing, hunting)

As far as resources permit, Metsähallitus supports research into the subjects listed above, takes part in research into management methods which are directly applicable in protected areas, and contracts out research work needed to form the basis for management plans.

Research into management methods and other experimental research which might result in damage or unpredictable changes in natural habitats must be conducted outside protected areas.

9.3 Monitoring

The basic surveys for protected areas should be conducted using methods which can be reapplied at later dates to monitor long term changes in natural conditions and the effect of protection measures. Sample plots should be designated in areas of valuable biotopes experiencing such natural changes, and in areas affected by management measures, for monitoring purposes. Trends in the occurrence of threatened species and species requiring special protection or indicator species should be monitored continuously. Metsähallitus is responsible for these kinds of monitoring work, designed mainly to help with the long term protection and management of areas.

The EU Habitats Directive obliges member states to monitor areas of certain habitat types and the conservation status of certain species listed in annexes to the directive, and to report on these trends to the Commission every six years (Natura 2000 monitoring). According to the Nature Conservation Decree the Ministry of the Environment must organise the monitoring of native species and natural habitat types to provide a basis for the assessment of their conservation status. Such monitoring may focus on habitat types or species listed in the directive or on entire Natura areas. In practice, the Finnish Environment Institute is responsible for the planning and carrying out of the monitoring work for Natura 2000, but Metsähallitus will play an important part in monitoring work conducted in areas under its administration.

Protected areas are also suitable locations for more general monitoring and comparative research related to changing natural and environmental conditions, as long as this work does not result in significant damage to the natural features of protected areas (e.g. monitoring changes in the tree line, systematic research into the state of forests, integrated monitoring of the state of the environment). A suitably extensive network of sites for monitoring and experimental research should be created in protected areas. Metsähallitus aims to facilitate the organisation of such long term research projects.

10 UTILISING PROTECTED AREAS

Utilising protected areas is here taken to cover those economic and other activities within protected areas which are not directly related to the conservation aims of the areas, but which are carried out independently or regardless of these aims.

Although protected areas are primarily intended for conservation purposes, the regulations imposed on their designation include many exceptions to complete protection; the regulations applying to protected mire areas in particular tend not to be as strict as those applied elsewhere. These exceptions to protection regulations do not, however, grant anyone wider rights than those which would otherwise apply.

10.1 The application of everyman's right in protected areas

In protected areas, the freedom of access, and the freedom to camp or go ashore under everyman's right, as Finland's traditional extensive rights of access are known, may be limited for the sake of conservation. In strict nature reserves visitors may only be allowed access to areas away from the marked roads, paths and visitor areas with the permission of the authority or institute responsible for the administration of the reserve. In national parks and other protected areas, access, camping or coming ashore may be restricted or prohibited under the regulations associated with the designation of an area or under separate regulations, but only where this is necessary for the conservation of the area's vegetation or wildlife. It is important to note that in any case the requirement that no harm is done is incorporated into everyman's right, and people may not take advantage of these rights of access in such a way that they cause damage or disturbance, e.g. to other visitors. Metsähallitus, as the party responsible for the administration of the land, is entitled and obliged to act to prevent such abuse of everyman's right, even when the regulations protecting an area do not specifically require this.

The basic principle is that everyone has a general right to access wherever they go under their own steam, except in strict nature reserves, and certain parts of other protected areas where access may be restricted for the whole year, for the whole summer, or during the breeding season as the regulations stipulate, or be

limited to certain routes. Nowadays getting around under your own steam can cover many other means of transportation than the traditional walking, skiing, rowing and canoeing. Other means of transportation covered by everyman's right, such as cycling, riding, and travelling by dog-sledge or reindeer-sleigh may have to be directed onto specific routes, or prohibited altogether, due to the harm or disturbance they may cause to flora, fauna or other visitors (see section 8.1).

Policy regarding camping will depend on the conservation aims, size, sensitivity to erosion, visitor numbers and management options of the protected area in question. In strict nature reserves and smaller protected areas camping is normally prohibited under the protection regulations. In national parks, the two largest strict nature reserves and some other larger protected areas camping is permitted, but is directed towards maintained camping areas. Camping in marked areas where no facilities such as firewood or waste management are provided may also be permitted (known as "primitive camping"). In such cases campfires may not be lit, and campers must look after their own wastes. In the wilder parts of the larger national parks and in remote protected mire areas less stringent requirements may be applied to such camping.

Picking berries and edible mushrooms is normally permitted wherever access is allowed, as long as the methods used do not damage other vegetation. Nowadays everyman's right is also taken to cover angling without a reel or through a hole in the ice.

10.2 Fishing and hunting

Fishing and hunting clearly affect ecosystems, so they are contrary to the conservation aims of protected areas, especially when the protection of a whole ecosystem is an integral part of these aims, as is the case in strict nature reserves and national parks.

When protected areas have been designated, however, provisions have often been made to allow fishing, while hunting by local residents is also often permitted in protected areas in the archipelago and other areas indicated in section 8 of the Hunting Act. In many other national parks elk may be driven, and the regulations relating to protected mire areas do not normally prohibit hunting. Fishing and hunting can nevertheless often be controlled through the permit system or other regulations, and such policies can be decided on individually as land use and management plans and the related regulations are submitted for approval.

Hunting should be prohibited as a rule in protected areas wherever:

- the purpose of protection is the protection of the whole ecosystem
- the area is important for the protection of wildlife
- the area has little significance in hunting terms
- the area is in a densely populated region

- the area's visitor numbers or significance in hiking terms are considerable
- hunting would disturb research being conducted in the area.

Exceptions to these rules may apply when:

- the preservation of the opportunity to hunt is important for local residents who are significantly dependent on hunting for their livelihood
- elk may need to be driven through small areas in order to ensure that their numbers can be regulated in surrounding areas
- a previous owner has been granted individual hunting rights

If hunting or fishing is to be permitted in a protected area, the following principles should be observed:

- Hunting or fishing must not directly or indirectly endanger the present or future occurrence of any species in a protected area. The conservation authorities responsible for the area must be able to protect any species temporarily where this danger exists
- Fishing and hunting rights are primarily granted to people who practice these activities for their livelihood, or who live so near to the protected area that its designation would otherwise significantly reduce their opportunities to hunt and fish. New fishing and hunting groups may not be formed to fish and hunt in protected areas
- Angling without a reel, through a hole in the ice or even with a single rod, reel and lure may be permitted in many areas without causing any significant harm to other aspects of ecosystems. In areas to be established under the new Nature Conservation Act, angling without a reel or through a hole in the ice is already expressly permitted in the legislation
- All protected areas should have parts where fishing and hunting are completely prohibited
- In areas where all hunting is prohibited except for the driving of elk, the driving of elk is only permitted where this is necessary to regulate the elk population in surrounding areas

Metsähallitus should be informed of all people hunting and fishing in protected areas (except those merely angling without a reel or through a hole in the ice), and the details of their catch or bag should be submitted so that the monitoring of such activities and their impact on ecosystems can be carried out.

The introduction of new fish stocks is generally forbidden in protected areas, except in a few cases where it is permitted under the regulations designating some areas (in certain lakes in the Salamajärvi and Seitsemien National Parks). If water bodies in a protected area are connected to a wider body of water (an inland waterways network or in the case of coastal and marine areas), introductions may be permissible in protected areas, especially where fish stocks are a significant source of livelihood for local people. In such cases the fish introduced

should only be of species and populations native to the area. Introductions should not raise fish stocks above their natural levels.

10.3 Photography

Photography is permitted in protected areas within the rights of access, on condition that it does not cause harm or disturbance to wildlife or vegetation. For this reason the taking of photographs right at nesting sites is not permitted in protected areas. Permits are always required for the erection of structures to aid photography. Such permits will not be granted for areas where camping is prohibited. The use of carcasses to attract predators for the purposes of photography alone will not be permitted in protected areas. Permits for photography at sites where carcasses are left for the reasons described in section 4.5 may be granted, however, as long as this does not disturb the original function of the carcasses, or other aspects of the protected area.

10.4 Local residents

Protected areas are not intended to make the lives of local residents more difficult. For this reason local residents, particularly in Lapland and in the archipelago, have been granted many rights relating to the practising of traditional livelihoods within protected areas. The most important such livelihoods are reindeer husbandry and fishing. Special attention should be given to the rights of the Sami peoples (the Lapps) to practice their own culture in the designated Sami homeland region. Legal guarantees regarding the position of local residents and the Sami peoples have been incorporated into legislation on Metsähallitus (Forest and Park Service Act, No. 1169/93, section 13) and the Decree on Metsähallitus (1525/93, section 11). The Act on the Protection of Wilderness Reserves (62/91) also aims to guarantee the survival of Sami culture and natural livelihoods. Legislation in the Act of the Sami Thing (974/95) also obliges Metsähallitus to negotiate with the Sami Parliament, also known as "the Sami Thing", concerning any wide-ranging or significant measures which would directly or especially affect the Sami peoples' status as indigenous peoples, particularly where the management, use, rental or sale of state-owned land, protected areas and wilderness reserves within the Sami peoples' regional homeland is concerned.

The rights of local residents in protected areas are defined according to where they live, and the nature of the activity they practice in the protected area. Each protected area has a different set of conditions, so the definitions of local residents and the special rights they may enjoy differ from area to area. The basic principle is that the nearer people live to the protected area, and the more economically dependent they are on the natural livelihoods practised in the protected areas, the greater their rights to utilise the areas' natural resources will be. To some extent, this also involves the issue of offering the necessary protection to the traditional livelihoods of people living in remote areas in the vicinity of pro-

ected areas, against the interests of those from further afield who might also like to utilise these resources.

The ways local residents utilise the natural resources of protected areas must not endanger the achievement of the aims of their protection. Changes in these traditional natural livelihoods (overgrazing, increasing off-road traffic and construction related to these livelihoods) and the increasing off-road traffic related to recreational hunting and fishing have begun to cause damage to ecosystems in protected areas, which should be reduced.

10.5 Traffic

Protected areas include public roads, waterways, power lines and telephone lines, which can all be maintained under the legislation protecting the areas. Attempts should be made to reduce the disturbance caused by these infrastructures, in terms of noise or their spoiling the landscape, through cooperation with the relevant authority. Where possible aerial cables should be removed and put underground or relocated outside protected areas.

Roads not needed for the management of protected areas should be closed and restored to their natural state in order to reduce excess traffic. The management of the busiest roads carrying public traffic should be transferred to the Finnish National Road Administration.

Off-road vehicle traffic is contrary to the conservation aims of protected areas, and is not normally permitted. Permits are not required, however, for off-road vehicles used by the authorities for managing and supervising protected areas, nor by the police or border guards, nor by local residents practising their natural livelihoods, such as reindeer husbandry. Such traffic needed for the maintenance of the protected area, for example, should be limited to the wintertime as far as possible to avoid damage to the terrain. The off-road traffic related to the practising of natural livelihoods by local people during the summertime, such as fishing and berry-picking, should be directed onto designated routes. In areas where hunting is permitted, the removal by snowmobile or all-terrain vehicle of an elk carcass or the like may also be permitted. Limited maintenance trips by snowmobile related to travel operators' activities may be permitted. However, the strictly recreational use of snowmobiles and other off-road traffic is not allowed. Northernmost Lapland is an exception in this respect, as owing to the great extent of the wilderness reserves and protected areas, snowmobile tracks unavoidably pass through these areas. In these cases as much use as possible should be made of previously established tracks, routes along waterways and open terrain, power lines etc., as well as any roads in these areas. Such routes should be included in the land use and management plans for these areas, and new routes may not be designated without changes to the plans.

Metsähallitus's employees have to use off-road vehicles at times during their maintenance and construction work. This traffic should be concentrated during the winter months, and the use of off-road vehicles should be avoided during the summer. Similar principles should be followed when negotiations are conducted and agreements made with other authorities concerning their activities in protected areas (the Finnish Frontier Guard, the police, the land surveying authorities, the Finnish Maritime Administration, rescue services and telecommunications authorities).

The same principles applied to off-road traffic also apply to the landing of aircraft. According to Civil Aviation Administration regulations, areas of open water may be used temporarily for the take-off and landing of aircraft without the permission of the area's owners or occupiers. In protected areas, however, permission will always be required according to the new Nature Conservation Act.

10.6 Tourism

Ecotourism is an important economic activity practised in many protected areas. It can improve the socio-economic sustainability of the areas and favourably influence attitudes towards them. Developing Metsähallitus's own activities in this field is not one of Metsähallitus - Natural Heritage Services' aims, however. Instead the aim is to provide the framework and opportunities for independent enterprises in the field of ecotourism. The aims of sustainable ecotourism must be agreed with all interested parties (local residents, the tourism sector, other local organisations) by drawing up a strategy for tourism following the principles of participatory planning. This will require the following:

- Metsähallitus must survey the problems and opportunities present in the protected area in question, from the point of view of tourism, and also set economic, social and ecological aims for ecotourism (encouraging and permitting certain activities, routes, providing services and facilities, zoning, avoiding problems with erosion, litter and disturbance etc.). Special consideration should be given to the conditions of local people and employment opportunities. The land use and management plan should include a section related to ecotourism. Special plans related to ecotourism can be drafted for areas used intensively for such purposes.
- In the tourism sector efforts should be directed towards product development, with special consideration given to how clients' wishes and expectations can be fulfilled. Market research should be conducted to find out about new client groups and client satisfaction levels. Any construction work related to tourism must not hinder the preservation of biological diversity inside or outside protected areas. Special care should be taken during the planning of transport routes leading to protected areas. This will involve close cooperation with the planning authorities.

- Travel operators' activities should promote conservation aims. The attractiveness of an area should not be prejudiced through its use for tourism, and the overall environmental impact of tourist activities should otherwise be minimised.

The production of strategies for tourism will require improvements in the amounts of information and guidance available, special training for travel operators and the staff of protected areas, and detailed monitoring.

The only tourist services suitable in protected areas are those which would not entail significant construction or otherwise affect ecosystems or disturb other users. Metsähallitus will build any necessary permanent service structures in protected areas, but only after the possibilities for using existing buildings have been examined. Local materials and building styles will be used in any such construction work.

Land in protected areas may not be rented for purposes related to tourism. In principle, activities not directly related to an interest in nature which could equally well be practised elsewhere should be directed to locations outside protected areas. In protected areas some types of tourist services are permissible, such as guided walks, hikes and skiing trips, boat trips, excursions on reindeer-sleighs or dog-sledges and passenger shipping routes, as well as catering facilities, cafes and kiosks located near information points. Additionally, programmed activities may be organised outdoors or in rental cabins within protected areas.

The activities of travel operators carried out in protected areas are regulated through agreements made with Metsähallitus. Such enterprises will be charged a reasonable sum for the use of services provided by the protected area (e.g. accommodation, maintained campfire sites, waste management). Metsähallitus arranges free training for entrepreneurs to initiate them into the ways ecotourism supports conservation aims and their obligations under Metsähallitus's Environmental and Quality Management Systems. Entrepreneurs are also obliged to provide reports on their activities – particularly about the needs and expectations of visitors. Metsähallitus also obtains such information, and carefully monitors the environmental impacts of ecotourism in protected areas.

10.7 Forestry

Forestry is generally prohibited in protected areas. Exceptions to this exist in those protected mire areas where limited amounts of forestry are permitted in areas with mineral soils (see section 3.4), and in parts of a few special protected areas where limited opportunities for forestry were provided for on the designation of the areas. Metsähallitus has however now abandoned forestry in protected mire areas.

When trees are felled in protected areas, as part of measures taken to restore the natural state (section 4.2) or to manage natural or heritage landscapes (section 4.4), for example, the resulting timber should be primarily used for construction or as firewood in the protected area, if it is not to be left on the ground to decay according to the requirements of management plans. Any surplus timber can be sold. Correspondingly, other products made available through the management of traditional landscapes may also be sold. Such activity will not be considered as forestry, however.

10.8 Mineral prospecting and mining

Mineral prospecting and geological research are allowed in protected areas with the permission of the authorities responsible for the area or the Ministry of the Environment. The methods and time of year for the prospecting and surveying should be chosen to minimise the traces left on the ground. Trial excavations, roads and other aspects of the work that significantly affect ecosystems will entail changes in the regulations on protection.

Actual mining or mineral extraction are unsuitable activities in protected areas, and they are indeed prohibited under the new Nature Conservation Act (1096/96). Decrees designating protected areas under the old act allow certain exceptions to this rule, however. When Torronsuo National Park was established, provision was made for the possible exploitation of small mineral deposits. The decree establishing Lemmenjoki National Park (583/91) permits gold panning by hand. This decree does not, however, cover the exploitation rights already granted previously and the claims based on them. Consequently there are several sites in Lemmenjoki National Park where gold is extracted mechanically. Gold panning using traditional methods is also permitted in the Urho Kekkonen National Park, and one established claim extends into the park.

Gold mining has a considerable affect on ecosystems, and is thus contrary to the aim of preserving natural features. On the other hand, panning for gold by hand in the traditional way, and the structures associated with this activity are a living part of Finland's cultural traditions and landscape worthy of preservation. Following an amendment to the Mining Act (589/97) the holders of mining reservations where gold is panned from the soil are no longer entitled to have these areas designated as mining claims. Since mining reservations are temporary, and reservation holders do not have the same kind of building rights as holders of claims, this change in the legislation should be welcomed from the point of view of nature conservation, even if it is a belatedly introduced measure.

Gold panning is supervised, and attempts are made to reduce the consequent environmental damage with the help of the environmental licensing system and the payment of forfeitable deposits as security beforehand. In areas where gold is extracted, the journeys needed for maintenance work are primarily to be made in the wintertime by snowmobile.

10.9 Leasing land or rights

In protected areas land or users' rights are normally only leased out when such rights applied to a building plot before the decision designating the area was made, and when the regulations on protection allow or even express the desire that the agreement is continued, as may be the case where the preservation traditional fishing or other rights is concerned, for example. The main principle is still that already existing holiday accommodation is gradually acquired by the state, and expiring land leases are not renewed.

When leases are drawn up, the relevant environmental issues must be clearly set out, e.g. how waste management is to be organised. In some cases hunting and fishing rights in protected areas may be leased, if the regulations designating the area and other nature conservation considerations allow this.

The agreements leasing users' rights to travel operators are described above in section 10.6.

11 THE EMPLOYEES OF METSÄHALLITUS – FOREST AND PARK SERVICE IN PROTECTED AREAS

Metsähallitus's employees working in protected areas should through their own working methods set good example of how to behave in natural environments. Metsähallitus's own use of off-road vehicles and construction work are described above in sections 10.4 and 8.2. Metsähallitus's other visible activities in protected areas, such as the maintenance work on various structures and the organisation of waste management should also provide exemplary models to guide the public.

The supervision of leaseholders' activities which require permits, and of the observance of protection regulations should be conducted as sensitively as possible. Such supervision should consist of prevention, guidance and advice. It is vital that those responsible for such supervision first introduce themselves and explain their business. In cases where it is suspected that a criminal act has been committed, the police must be informed.

It is very important for Metsähallitus that there is a good relationship between the protected area and local communities. Particularly in national parks and other larger protected areas with varied functions, those responsible for the management of the area should cooperate with local residents, entrepreneurs and those responsible for press relations, through press briefings, meetings and organised visits or study tours and excursions.

12 RECORDING MEASURES TAKEN IN PROTECTED AREAS

Since protected areas are intended to provide permanent examples of natural ecosystems and their development, the different developmental stages of the areas should be clearly understood, as well their present state assessed through basic inventories. The various measures taken directed at ecosystems (as part of restoring the natural state and the management of natural and heritage landscapes) and sample plot surveys conducted, as well as the building and repair work done on protected buildings and structures, must all be recorded and dated systematically, filed and kept in archives. The same applies regarding any work affecting the natural environment carried out by other authorities in protected areas.

13 ASSESSING THE SUCCESS OF MEASURES TAKEN IN PROTECTED AREAS

The development of protected area management requires the measurement and evaluation of the measures taken, their success, their productivity and their economic cost. The methods necessary to carry out such evaluation still need to be developed considerably. The basic tasks involved in the management of protected areas include:

- monitoring the accomplishments of management measures
- the detailed costing of the most important measures, and where possible, continued monitoring of the trends in such expenses
- monitoring the factors which affect the conditions for the management of protected areas (e.g. the extent of the area under management, visitor numbers, the numbers of buildings and structures requiring maintenance and restoration, the numbers of any threatened species occurring)

To assess the success and impacts of measures taken methods need to be developed for

- measuring the natural state and the changes occurring within it
- assessing the impacts of management measures and the use of protected areas
- assessing the success of guidance activities and the expectations of visitors
- assessing the impact of publicity and public relations work regarding protected areas

The development of such methods will require cooperation with various research organisations.

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DEFINITIONS OF THE IUCN PROTECTED AREA MANAGEMENT CATEGORIES

Category Ia.

Strict Nature Reserve: protected area managed mainly for science

Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.

Category Ib.

Wilderness Area: protected area managed mainly for wilderness protection

Large area of unmodified or slightly modified land, and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.

Category II

National Park: protected area managed mainly for ecosystem protection and recreation

Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

Category III

Natural Monument: protected area managed mainly for conservation of specific natural features

Area containing one, or more, specific natural or natural/cultural feature which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.

Category IV

Habitat/Species Management Area: protected area managed mainly for conservation through management intervention

Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

Category V

Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation

Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

Category VI

Managed Resource Protected Area: protected area managed mainly for sustainable use of natural ecosystems

Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.

Source: IUCN 1994: Guidelines for Protected Area Management Categories. CNPPA with the assistance of WCMC, IUCN, Gland, Switzerland and Cambridge, UK. x +261pp.

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