8 Park Management and its Effectiveness

Sections 8 and 9 of this report will examine the effectiveness of Metsähallitus's management of the protected areas under its administration by considering how well objectives have been achieved, and assessing the benefits obtained through management in relation to the resources used. The review will largely examine overall outcomes in relation to total resource use and monitoring records showing how working hours are allocated between the core processes that fulfill the main tasks of the Natural Heritage Services (NHS). In relation to tasks especially relevant in reaching goals set by society, there will be a focus also on cost-effectiveness and productivity. These key tasks assigned to the NHS include:

- establishing of protected areas
- surveying of natural and cultural values
- planning of the management and use of protected areas
- restoring and managing habitats
- providing facilities and services for hikers and other customers.

This review is based on the concept of adaptive planning and management of protected areas and the model for assessing management effectiveness defined by the IUCN World Commission on Protected Areas (WCPA), both of which are described above in Section 2.2.3.

8.1 Management Objectives

8.1.1 From Mission to Measures

The NHS has defined its own mission and a vision of circumstances that it aims to reach by 2010. Strategic objectives have been defined on the basis of this mission and vision, as well as the critical success factors that will determine whether they can be achieved. A set of performance measures covering these factors has been defined in the form of a Balanced Scorecard (BSC). The indicators and performance measures are used to assess progress towards objectives, and to redirect operations when necessary.

Natural Heritage Services mission and vision for 2010

The mission of the NHS has been defined as follows:

- We manage our national parks and other areas according to best practices based on research and experience, to preserve biodiversity and cultural values.
- We provide our customers with possibilities to enjoy recreation in and learn about nature.
- We create opportunities for nature tourism and sustainable regional development.
- We collaborate with many partners nationally and internationally.
- We work to improve our service capacity and the productivity and effectiveness of our activities.

This mission emphasises basic values shared throughout society: nature conservation and ecological, cultural, social and economic sustainability in the use of natural resources. It also stresses the importance of collaboration at all levels. Actions must be based on sufficient knowledge. The NHS aims to improve the quality and effectiveness of its work continuously.

The NHS has also defined the following vision for 2010:

- The favourable conservation status of species and habitats in our areas is safeguarded.
- Our services are valued by society and promote welfare of nature and man.

These conservation objectives are clearly linked to the objectives of the UN Convention on Biological Diversity, the Natura 2000 Network and the EU Habitats and Birds Directives. They also imply participation in the more precise definition of related concepts, such as "favourable conservation status". Efforts are made to purposefully prevent any irreversible negative changes in the state of species and habitats, for example through habitat restoration and management work and by contributing towards im-

provements in the management of waters and commercially exploited forests.

The services of the NHS can only be valued by society if they are publicised and if they are of sufficiently high quality. Facilities for visitors are provided on the basis of local levels of demand so as to provide a unified network of services.

Prospects for the well-being of nature are improved indirectly, whenever people's appreciation of nature and desire to conserve biodiversity is increased through their positive experiences in natural environments, and the related guidance and interpretation.

The well-being of people includes economic, social and cultural well-being. Well-being can be promoted, for example, through improvements in regional economies and tourism, by increasing employment, through the beneficial health impacts of outdoor recreation, by cherishing valuable landscapes and built environments, and by supporting Sámi culture.

Strategic objectives

In the year 2000 Metsähallitus defined a set of strategic guidelines known as "Future paths", including the following key aims and outlines for 2007:

1 **Metsähallitus's activities in State lands will be developed through cooperation between the business areas Forestry and Natural Heritage Services (NHS).**
   - Conservation of forests in Southern Finland is improved through intensified cooperation.
   - The separation of societal tasks from business activities will clarify the status of the NHS.

2 **The NHS's responsibility for the conservation of biodiversity will increase**
   - The numbers of areas administered by the NHS will increase as conservation programmes progress and the administration of State lands is concentrated to Metsähallitus
   - Metsähallitus's planning system will be reorganised. NHS's land use planning will be standardised and data management improved to support planning.
   - Responsibility for the monitoring and management of threatened species and directive species will be expanded.
   - Habitat restoration and management methods and the conservation of species will be improved.
   - Collaboration with universities and research institutes will be intensified.

3 **The NHS is a leading marketing organization and well-known provider of services for nature interpretation and recreation in Finland.**
   - The importance of State lands for local communities will grow and Metsähallitus's activities will support the economies of remote rural areas.
   - The national service network will be systematically developed by improving operations, enhancing data management and building partnerships.
   - A set of principles for sustainable nature tourism will be defined to help ensure the operations are responsible.
   - Increase in public awareness of nature and conservation, and in interest for hobbies related to nature is aimed for.

4 **International activities will be expanded and deepened.**
   - Transboundary cooperation on protected areas near borders will be intensified.
   - Work in international organizations will be boosted through stakeholder cooperation and partnerships.

These strategic guidelines were reviewed and revised in 2005. Maintaining biodiversity, improving facilities for visitors and intensifying international cooperation are still central elements of the NHS's strategic activities. Projected changes in the administration of nature conservation in Finland may be expected to allocate a wider range of responsibilities to the NHS in nature conservation, the recreational use of natural areas, and the sustainable use of natural resources. This means greater responsibility for the inventories, planning, management and monitoring of Finland's Natura 2000 sites, and for the conservation of species, aquatic ecosystems and cultural heritage at national level. Wider responsibilities and services require increased and diversified funding as well as capacity building.

Ensuring the ecological and social sustainability of hunting and fishing has also become a strategic objective for the NHS following the administrative reorganisation. This includes the management of game grounds and fishing waters, and the administration of fishing and hunting rights. New responsibilities of the NHS now also include controlling off-road traffic and supervising game and fisheries.

The social obligations defined for Metsähallitus in new legislation – to promote nature recreation and employment, and to safeguard Sámi culture and conditions for reindeer husbandry – are also specifically considered in the planning and implementation of protected area management.

Critical success factors and indicators

Critical success factors have been identified as the vital preconditions for the achievement of strategic objectives. These factors will largely determine the effectiveness of NHS operations. Such factors are categorised into four areas in the Balanced Scorecard model (see Fig. 44):

- resources
- working capacity and renewal
- processes and structures
- effectiveness and service capacity.

In the context of protected area management, nature and people can both be seen as customers. In nature conservation work the main goal is to halt the decline in biodiversity. Another goal in protected areas is to provide opportunities for recreation and income for local communities. The achievement of objectives set by society and the ministries can be measured by monitoring indicators, such as customer satisfaction levels and trends in the populations of species for which the NHS is responsible.

Critical success factors affecting the work of the NHS have been defined on the basis of the Balanced Scorecard. Some of the crucial variables are listed below.

Basic funding and project funding levels must be sufficient to ensure that operations continue. New means to improve the productivity of the state administration must be found, and their impacts monitored. The motivation, skills and know-how of personnel must be maintained and enhanced.

Protected area real estates must be established within the timescale defined for the Natura network, to ensure the achievement of conservation objectives. Property value must be maintained by managing and restoring it.

Sufficiently comprehensive and updated information must be available as a basis for operations. The areas and values that need to be protected should be sufficiently known, and the nature and extent of pressures and threats affecting protected areas should be understood. Related research work should be followed, and findings utilised. The quality of management operations must be continuously enhanced.

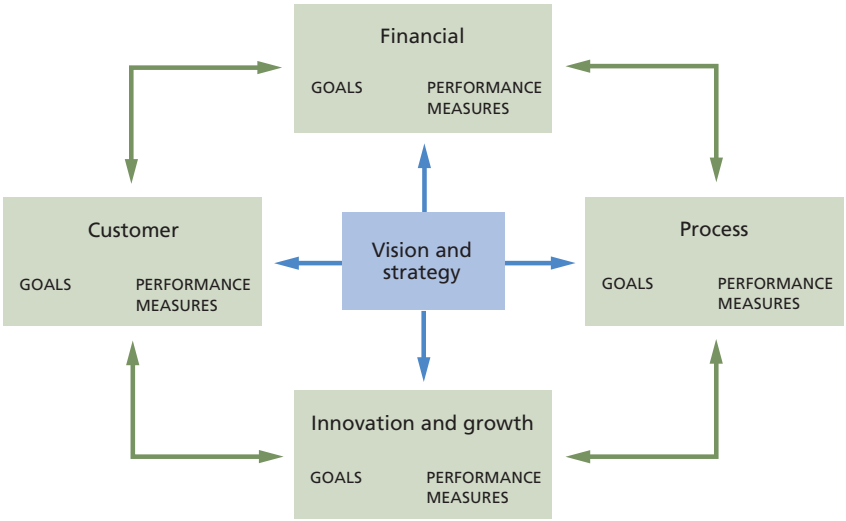


Figure 44. The Balanced Scorecard. Source: Kaplan and Norton 1996.

Areas should be managed according to their objectives, with management effectiveness monitored. Management and monitoring measures must be improved, with best practices spread through effective networking. Facilities for visitors must complement the services provided by local tourist firms to form coherent entities. The impacts of activities must be assessed to ensure their sustainability from the perspectives of conservation objectives and local economies.

Trends in the conservation statuses of species and habitats must be demonstrable. It is particularly important to reach the objectives of the METSO Programme in relation to ecological surveys and the restoration of conservation values in forests in Southern Finland.

Services for the public must be well used, with high customer satisfaction levels. A positive public image will help the NHS to gain approval for operations.

Trends in these critical success factors are monitored within the NHS through performance measures, and examined annually. The monitoring of management effectiveness also involves the compilation of data on performance measures and indicators related to the main tasks of the NHS. Management operations are assessed and continuously enhanced on the basis of monitoring results with long-term objectives in mind.

8.1.2 Improving Productivity in the State Administration

The efficiency of the public services and administration must be improved to ensure the stability of public finances in Finland. This is to be achieved at a time, when many public sector workers are approaching retirement age, and the supply of new staff is declining.

The goals and means of implementation of Finland's public sector productivity action plan were defined in the Government Programme of 2003. Goals include a systematically planned and demonstrable increase in productivity and a reallocation of the resources released due to the consequent productivity improvements. This will enable public sector staffing levels to be adapted to be compatible with the availability of labour. At the same time care will be taken to ensure that the services provided by the public sector are maintained.

Operations have been enhanced through productivity schemes for each administrative sector. This will particularly involve ministries and other public authorities focusing more on their core tasks; rapid improvements in the efficiency of public sector administration, purchasing and support services; an increase in the joint use of resources; and the increased automation of functions and processes by exploiting information technologies. The main efficiency improvements planned within the environmental administration include the reallocation of administrative tasks related to nature conservation, a clarification of the results-oriented management system, collaboration on data systems, and improvements in monitoring and reporting.

The management procedures of the Metsähallitus state enterprise, and close internal cooperation with its business units have created a good basis for continuous improvements in NHS's cost-sensitive operations, which resemble those of service companies. The NHS is in a favourable position within the State administration, since many actions have already been taken in recent years aiming to enhance productivity.

The NHS will continue to work to achieve further improvements in productivity, mainly by developing its organisation, operating conditions, and the systems used to support the planning and monitoring of operations. The NHS will also work to increase the social effectiveness of its operations noticeably without using any significant new resources for this purpose. This will have to be achieved in spite of the expected further expansion of the NHS's tasks over the coming years, especially in the context of the establishment of new protected areas and the planning and implementation of their management. Productivity within the public sector will continue to be monitored in the future with the help of new productivity indices currently under development.

Consistency and efficiency through reorganisation

The whole organisation of the NHS was revamped at the end of 2005 to ensure the organisation's capacity to provide services and improve productivity. The changes were speeded by the transferal of new administrative tasks to the NHS

under new legislation. The number of the NHS regional units was reduced from six to three – NHS Southern Finland, NHS Ostrobothnia and NHS Lapland. The distinctions between the roles of the four core processes were clarified, with their specific tasks defined. The organisational and operational structures of the NHS regional units were revised and standardised to make them more compatible with the new process model (Fig. 45).

In this reorganisation strategic tasks have been concentrated in narrower, partially regionalised steering units. Responsibility for practical tasks has been shifted to the regional units. Support services have also been reorganised, and most of these services are now purchased from Metsähallitus's service centre. This change is related to a new legislative requirement that Metsähallitus's public administrative tasks must be clearly separated from business operations. It also supports strategic objectives for the development of nature tourism, and clarifies the responsibilities of the NHS regional units. The recommendations of the management effectiveness evaluation (MEE) in 2005 about the need to standardise operations were also duly considered. Productivity has been improved in many ways through this extensive reorganisation. The strengthening of the NHS core processes also creates opportunities to improve development work and achieve cost savings through the application of best practices.

8.2 Planning of Networks and Sites

The Ministry of the Environment has responsibility for the development of Finland's protected area network. Nature conservation programmes are jointly implemented by the 13 regional environment centres and Metsähallitus. It may no longer be necessary or feasible to expand the network further through extensive new conservation programmes. This increases the importance of measures to safeguard biodiversity in economically exploited lands and waters. The linking of valuable sites in both protected areas and economically exploited areas into an ecological network is a challenging task, but such actions can particularly help to compensate for the small and scattered nature of the protected area network in Southern Finland. Networks can help to preserve the small populations of many species under pressure due to environmental changes.

In State-owned lands Metsähallitus has a key role in the comprehensive planning of wider areas. Metsähallitus is also becoming increasingly involved in the integration of valuable natural areas in privately-owned lands into wider ecological networks, through the land use and management planning procedures used for Natura sites.

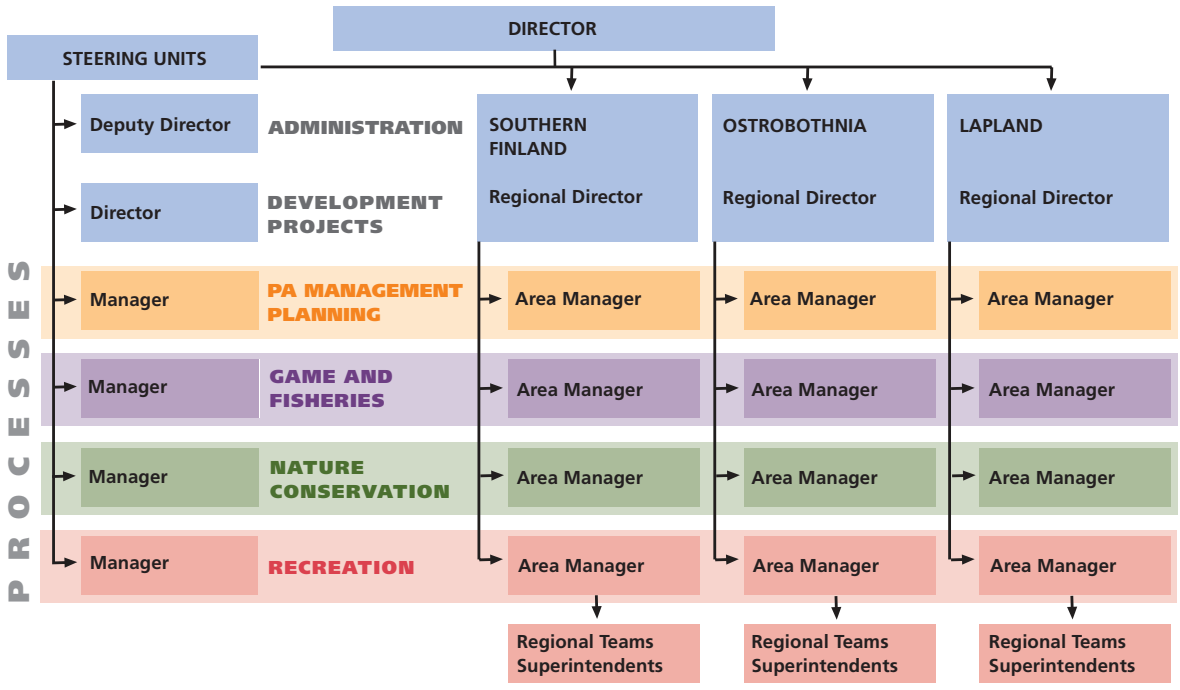


Figure 45. Organization of the Metsähallitus Natural Heritage Services 1.1.2006.

8.2.1 The Ecosystem Approach in Conservation

The recent international MEE of protected areas in Finland stressed the importance of developing ecosystem-based planning processes that link protected areas to the coherent ecological entities that also encompass the surrounding lands and waters. This ecosystem approach has not yet been applied systematically in Finland, even though many of its principles are included in the planning procedures already applied today. For this reason it is important to examine the related concepts and how the principles are applied and can be further developed in Finland.

Functioning ecosystems promote human well-being

The ecosystem approach is a strategy for the integrated management of land, water and living resources. A related set of principles and operational guidelines was defined in connection with the implementation of the UN Convention on Biological Diversity (CBD) during the period 1995-2004. The approach aims to reach a balance of the three main objectives of the CBD: the conservation of biodiversity; its sustainable use; and the fair and equitable sharing of the benefits arising from the utilisation of natural resources.

The ecosystem approach, together with its 12 principles and five operational guidelines, has been defined to meet the need for an approach to the conservation of organisms and habitats that also considers humans and human activities. Appendix 18 lists the principles and guidelines of the ecosystem approach as defined under the CBD.

The World Conservation Union (IUCN) sees the ecosystem approach as a step-by-step process that commences with the definition of a given ecosystem area and the identification of the main stakeholders. After the structures, functions and state of an ecosystem have been assessed, and the measures needed to ensure its conservation, management and sustainable use have been identified, the next step is to examine possible economic incentives and policies and set in place flexible and adaptive forms of management that also consider the impacts of these activities on neighbouring ecosystems. Finally, long-term plans and targets can be defined for these management processes.

Ecosystems in the context of the ecosystem approach are not necessarily the same as ecosystems in biological terms, but can instead consist of any coherent ecological or natural areas defined for administrative purposes. The ecosystem approach can therefore be applied, for instance, for individual protected areas, for catchment areas, for the areas of municipalities or even at a much larger scale for areas encompassing many countries' territories for the purposes of international projects.

The main idea behind the ecosystem approach, which sees ecosystems as coherent functional units, is the need to safeguard the functions of ecosystems and the ecosystem services they provide. These services are freely available material or non-material services produced by ecosystems, which are often vital for people, and may also have high economic value. Ecosystem services are discussed above in Section 6 of this report.

The ecosystem approach is based on the use of applicable scientific methods that consider ecosystems' structures, development processes and functions, as well as the interactions between organisms and the environment. The preservation and, where necessary, the restoration of the natural processes within ecosystems complement traditional forms of species protection, such as species conservation programmes and habitat protection practices, which will also continue to be valuable in the overall conservation and sustainable use of biodiversity. However, it is not possible to maintain biodiversity merely by protecting species or habitats. New, comprehensive approaches are also needed to reduce the harmful impacts of our societies and economies on nature, while also safeguarding the livelihoods of people who earn their living from nature.

A lot of work has been done in recent years through the Helsinki Commission (HELCOM) to encourage the adoption of such a comprehensive ecosystem approach to the protection of the Baltic Sea. The aim is to achieve and preserve a good ecological status for the marine ecosystem by addressing the main environmental impacts of human activities. Information Box 16 describes the monitoring system used by HELCOM to help plan policies and actions and evaluate their success.

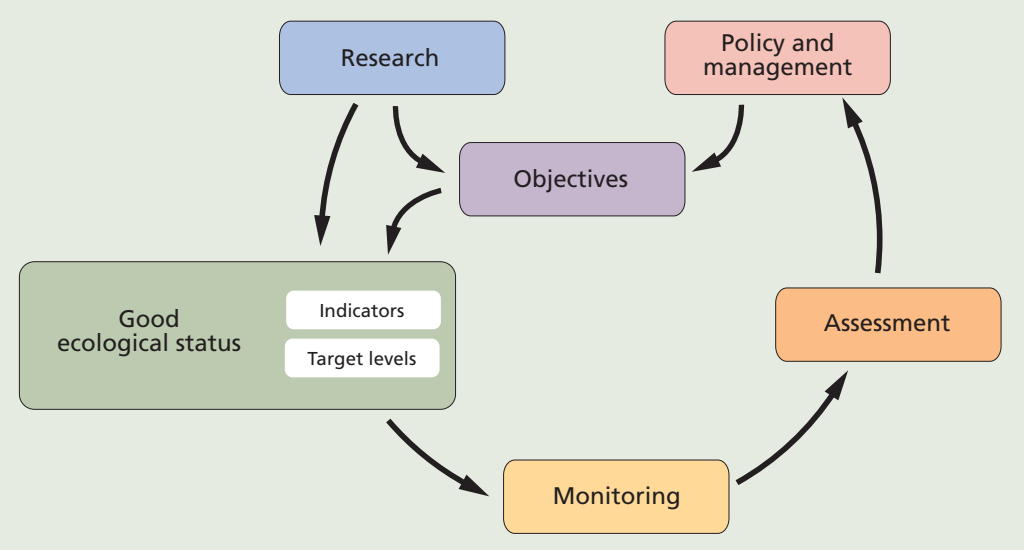
Protection of the Baltic Sea Enhanced through Assessments Based on the Ecosystem Approach

The well-being of the sea is the aim of all nature conservation cooperation related to the Baltic Sea. The Helsinki Comission (HELCOM), which coordinates the implementation of the Convention on the Protection of the Marine Environment of the Baltic Sea Area, has lately been working to create a comprehensive approach to speed progress towards this goal at every level. The starting point is the best available knowledge on the ecosystem and its functions. Operations are directed to factors known to have the greatest impacts on trends in the state of the Baltic Sea. The aim is to ensure the sustainable use of the goods and services provided by the ecosystem, and to maintain the functions and integrity of the marine ecosystem.

To help achieve a good ecological state for the Baltic Sea a set of ecological objectives has been defined on the basis of research findings and policies. Specific objectives focus on eutrophication, hazardous substances, resource use and alien species, all of which affect the diversity of the marine environment. Objectives related to biodiversity include the maintenance of natural landscapes, seascapes and habitats, and the preservation of thriving and balanced plant and animal communities and viable populations of species. Creating an extensive and representative network of marine nature reserves is very important for achieving these objectives.

In the near future, HELCOM will launch a system of environmental monitoring based on these ecological objectives and adopting an ecosystem approach. The system will form part of HELCOM's forthcoming Baltic Sea Action Plan. The ecological status of the sea will be assessed using various indicators, and the success of policy measures will be evaluated. Monitoring will cover the whole of the Baltic Sea ecosystem, and as many actors in the catchment area as possible. This approach is connected to the EU Water Framework Directive's objective to improve water quality, and to the draft European Marine Strategy, and its related Directive, which both aim to improve the state of all of Europe's seas. The comprehensive monitoring system ultimately aims to respond to the common objective of the UN Convention on Biological Diversity and the EU to halt the ongoing decline in biodiversity by 2010.

Source: HELCOM Ecological objectives for an ecosystem approach. Document 3/6, 27.03.2006.



HELCOM's ecosystem approach to the assessment of the ecological status of the Baltic Sea. Source: HELCOM.

Finland's coastal strategy, finalised at the end of 2005, is based on recommendations issued by the European Council in 2002 on Integrated Coastal Zone Management (ICZM). It is also based on the principles of the ecosystem approach. The strategy aims to improve environmental quality and increase the viability of coastal areas to ensure they have good conditions for living, economic activities and recreation. During the definition of this strategy an evaluation was conducted to assess the state of coastal environments, identify key stakeholders, and review related legislation and policies.

This coastal strategy and the monitoring system for the state of the marine environment are important tools for applying the ecosystem approach in management planning in coastal protected areas. More comprehensive overviews and intensified cooperation between stakeholders must be emphasised in such planning. Wide-ranging spatial planning is needed in marine areas, accounting for the populations of commercially valuable fish species and also for other species and habitats of high value in conservation terms. Currently problematic issues that still need to be resolved concern, for instance, populations of Baltic salmon, grey seal and harbour porpoise. In addition to commercial fishing, current issues related to the conservation and sustainable use of resources include the exploitation of mineral wealth on the sea bed and the construction of harbours.

The NHS is developing the methods for planning and implementing the management of marine protected areas on the basis of the ecosystem approach in cooperation with organisations from other countries around the Baltic Sea.

Towards ecological networks

The CBD's programme of work on protected areas is being implemented using the ecosystem approach as described above. According to the targets defined for this programme, existing and planned protected areas, established to conserve ecological structures and functions, should be linked to the wider landscapes and seascapes in their surroundings, and to the use of natural resources by various actors, by 2015. Possible means to achieve this goal include ecological corridors, buffer zones around protected areas, and habitat restoration. The target situation is a functional ecological network, whose core is formed by protected areas, which are supported by other areas of biodiversity. An example of how such an ecological network can be formed is illustrated in Figure 46.

The principles of the ecosystem approach have already been applied in land use planning practices for State-owned lands in Finland for a long time – for instance by establishing ecological networks through landscape planning. The cores of such networks consist of nature reserves. Edge effects are reduced by establishing buffer zones around them; and their links with other protected areas are improved by establishing support areas and ecological connections. The Evo complex, which is made up of different kinds of areas, represents a good example of such an ecological network (Information Box 17).

8.2.2 Land Use Planning Process Renewed

Land use planning in State-owned areas is largely the responsibility of Metsähallitus, whose planning system has three main levels (see Fig. 47). The main planning levels and tools are natural resource planning, protected area management planning, and operational planning. The whole planning system, and the information systems that support it, have been fundamentally renewed since the year 2000.

Landscape ecology as part of natural resource planning

Metsähallitus's natural resource planning involves the multi-objective planning of the use and management of the natural resources of State lands and waters. The main emphases and scales of different forms of resource use are detailed, including planned levels of logging, the development of ecological networks, real estate development (including land sales and purchases), and any exploitation of soil resources. During the planning process the viewpoints of Metsähallitus's various business operations and stakeholders are considered and harmonised. Metsähallitus's participatory planning principles are followed in the planning procedures.

Finland is divided into seven areas for the purposes of natural resource planning. Plans are

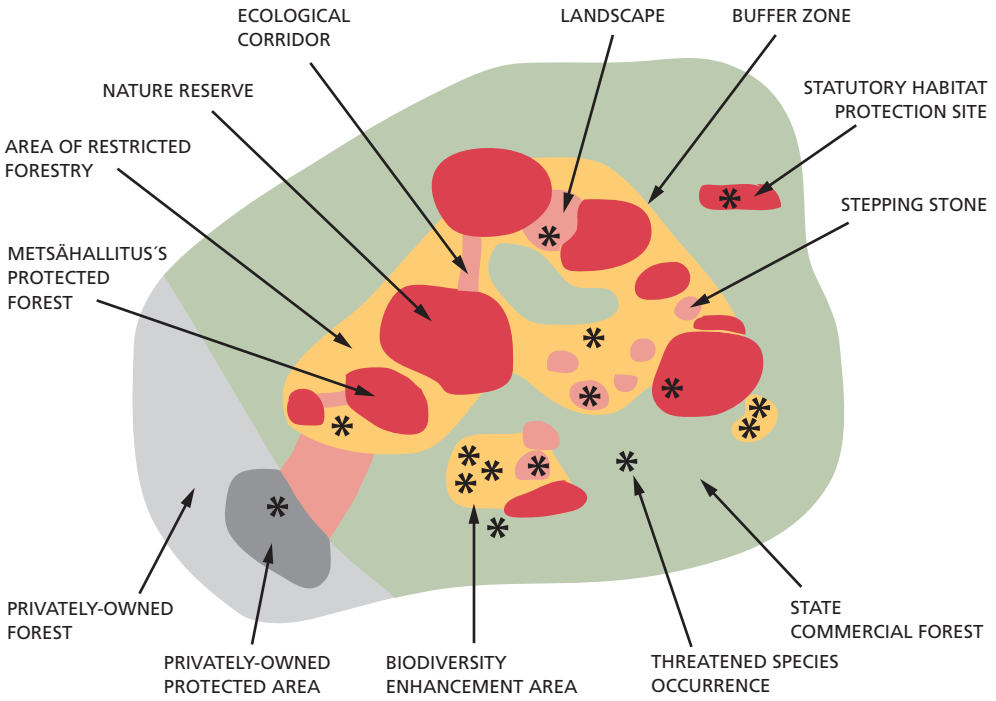


Figure 46. Application of the ecosystem approach in the protection and management of forest habitats. Ecological networks are made up of core areas comprised of protected areas which are connected by ecological corridors and stepping stones, and supported by other areas where biodiversity is preserved. Source: Metsähallitus.

made for ten-year periods, but related action plans only cover five-year periods. After this, intermediate assessments are made for each natural resource planning region to form a basis for action plans for the last five years of the planning period.

Metsähallitus has striven to safeguard forest biodiversity in extensive commercially managed forests with the help of landscape ecological planning. This process has complemented the natural management methods applied at tree stand level according to forestry guidelines and recommendations, thus ensuring that limited resources have been directed to the most ecologically important sites. Key biotopes, areas long spared from forest fires, and other possibly significant ecological sites are identified within larger areas of managed forest using aerial photographs and satellite images, but the selection of areas for protection has been based on field inventories. In the selection procedures it has been possible to take advantage of the expertise of local residents through participatory planning processes. The goal of landscape ecological planning has been to form larger ecological entities and networks.

Over the period 1996-2000 Metsähallitus drafted seven natural resource plans and landscape ecological plans for a total area of some

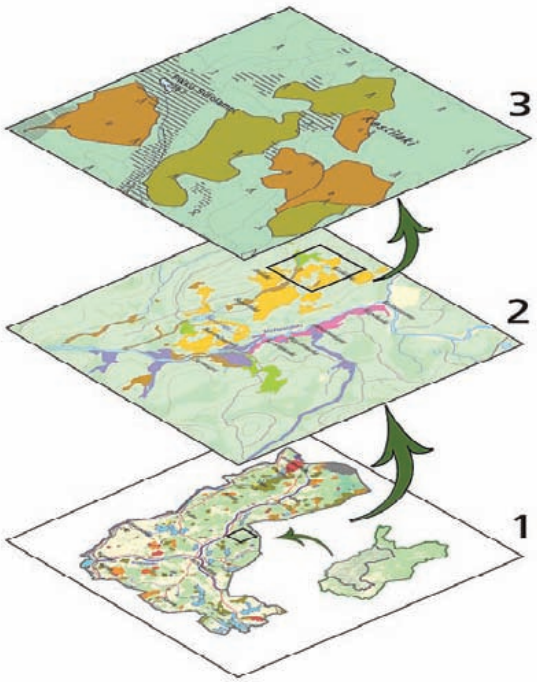
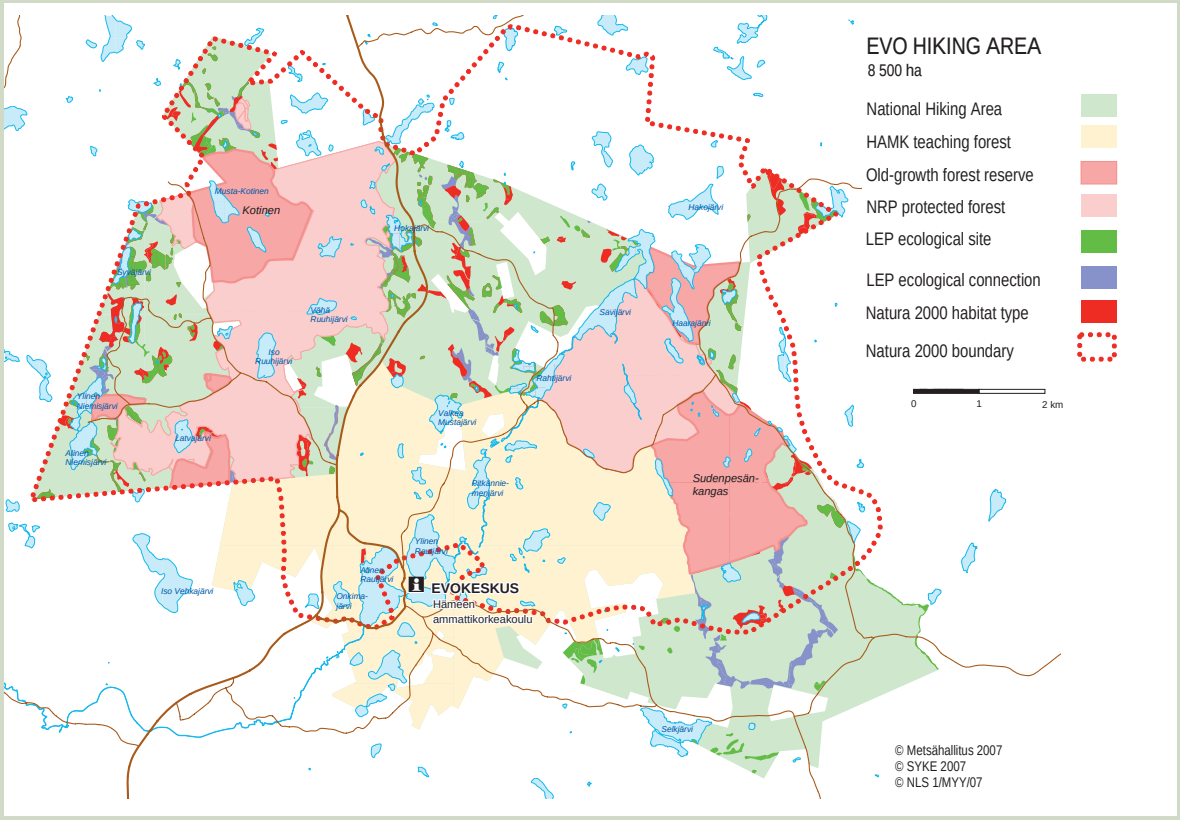


Figure 47. Metsähallitus's land use planning system, exemplified by Western Lapland. Level 1 consists of natural resource planning and landscape ecological planning, which both pertain to all areas owned by Metsähallitus. Level 2 involves the planning of protected area management and level 3 operational planning. Source: Metsähallitus.

The Ecological Network around Evo Hiking Area

The core of the Evo ecological network is formed by the Evo National Hiking Area, established in 1994, and two adjoining old-growth forest reserves (see map). Under the natural resource plan (NRP) for Western Finland, the total area under protection was extended in 1997 by adding protected forests where habitats are being ecologically restored. At the same time, a landscape ecological plan (LEP) was drawn up for the Evo area. The plan specifies the locations of valuable natural sites and safeguards connections between them with ecological corridors. Many of these sites were designated as Natura 2000 biotopes when the whole area was included in the Natura 2000 network and the related biotope inventory was concluded. In the rest of the area commercial forestry is practised in observance of Metsähallitus's Environmental Guidelines for Practical Forest Management, and taking the recreational use of the area into account. Part of the forests inside the Natura site also functions as a teaching forest used by the Häme University of Applied Sciences (HAMK).

Especially in Southern Finland, ecological networks like this, formed around protected areas by forest and land use planning, are playing an increasingly important role in the conservation of biodiversity. Small-sized valuable natural sites supplement the network of protected areas best, when they are located near larger protected areas.



An extensive ecological network has been formed in the past decade around the Evo area in Southern Finland. Source: Metsähallitus.

6.4 million hectares (64,000 km2). A total of 114 planning areas were covered by landscape ecological planning. These plans covered most of the commercially used land area administered by Metsähallitus. Although the planning areas also included some protected areas, the main focus of the planning processes was on commercially managed and recreational forests.

During landscape ecological planning, various ecological sites with a total area of some 168,000 ha were identified, of which more than 100,000 ha consisted of forest land. A fifth of these areas consisted of habitat types listed in the Forest Act or the Nature Conservation Act. The largest numbers of sites were listed as forest habitats beside natural streams or old-growth forest stands. Almost 7,000 valuable species occurrences were registered. Protected areas and clusters of valuable natural sites were linked through ecological connections. Through landscape ecological plans, a total area of 129,000 hectares of commercially managed and recreational forest land was excluded from future commercial forestry. This corresponded to 3.6% of the total area covered by such planning. A further 176,000 ha of commercially managed and recreational forest land (4.9%) was classified so that only a limited range of forestry measures may be used in the future. Such areas include sites used by capercaillies for lekking (courtship displays), landscape sites, game grounds and areas that will form ecological connections.

In 2001 the entire planning system of Metsähallitus was subjected to internal and external evaluation. The consequent recommendations were then used to improve the planning system, also exploiting the latest research findings. The consequent development project led to the combination of the earlier natural resource planning and landscape ecological planning processes into a single process. The new system has been designed to focus on whole areas that include both protected and commercially managed forests, and to result in planning solutions that safeguard forest biodiversity in each planning area while also ensuring economic and socio-cultural sustainability.

The second round of natural resource planning commenced under the new guidelines in the Kainuu region and Western Finland, and the first of the new-style natural resource plans was published in 2004. During 2004-2006 work progressed on natural resource plans for Eastern, Western and Northern Lapland and 2006-2008 planning is proceeding in Ostrobothnia and Eastern Finland.

Management planning standardised

Statutory management plans are drafted for all national parks, wilderness reserves, national hiking areas and some other nature reserves. Plans are also drawn up for Natura 2000 sites where necessary. Management planning helps to balance the objectives of nature conservation, recreation and any other uses of each protected area.

Protected area management plans are drafted by the authority administering the area, which in State lands is usually Metsähallitus. Planning for protected areas on private land has previously been overseen by the regional environment centres, and has not been standardised in the same way as for State-owned areas. In many cases Natura sites encompass both private land and State land, so it is beneficial to conduct planning for whole areas. Such planning can be carried out by Metsähallitus.

Management plans drafted by Metsähallitus are approved by the Director of the NHS. Plans for national parks and other legally established nature reserves must also be confirmed by the Ministry of the Environment.

During the early 2000s the NHS ran a project that completely renewed the administrative basis and guidelines for management planning of protected areas. Planning processes and tools have been purposefully developed over the last few years to respond to the increased need for management planning. All management plans are now drafted according to standard procedures and published at least in electronic form.

Management plans are based on various surveys and research findings. Planning commences with a review of standardised basic data compiled for each area and entered into information systems (see Information Box 18). The NHS aims to ensure that such data is compiled for all protected areas for purposes including also future monitoring of the state of Finland's parks.

The plans apply this basic data to define the following factors:

- the current state of an area
- its most important values
- future trends and threats
- management objectives.

The planning process is concluded with an environmental impact analysis of the plan.

Stakeholders and citizens have opportunities to influence plans throughout the planning process. This is enabled through public participative events, direct contacts, web services and the collection of official statements. Feedback is duly considered, if possible, as planning proceeds.

Impact analysis is an important part of the renewed natural resource planning and protected area management planning processes. In natural resource planning the ecological, socio-cultural and economic impacts of alternative plans are extensively assessed. In protected area management planning the main goal is to ensure that plans have no negative effects on the conservation values, which the area was established to protect.

The planning and implementation of protected area management are guided by Metsähallitus's own Principles of Protected Area Management in Finland, which have been drawn up on the basis of wider national and international objectives. Management plans particularly control the activities of areas' administrators. They may be complemented with operational plans for specific sub-areas or projects, such as plans for habitat restoration, sustainable nature tourism or the construction of facilities. Such plans may also be drafted separately at times, when no new overall management plan is needed.

Strategic objectives and goals are defined for management plans with a long-term time frame of about 20 years. More concrete targets are defined for periods of about 10 years, and the implementation of plans and the possible need for their revision are reviewed at intervals of approximately five years. Progress towards targets is assessed with the help of performance measures and indicators. If monitoring reveals that plans need to be revised, their renewal date is brought forward.

8.2.3 General Plans for Natura 2000 Facilitate Future Planning

General plans have been drafted at provincial level for the management of sites within Finland's Natura 2000 network. These general plans address the need for more detailed planning for Natura sites and the scheduling of such planning. As all of these general plans have been completed, a comprehensive assessment is compiled of the planning need throughout Finland's Natura network until 2012.

Related guidelines set out by the Ministry of the Environment specified that planning should be prioritised in protected areas that face intense land use pressures or are widely used for recreation. These types of areas include many Natura sites where conservation is achieved through other means than the establishment of statutory nature reserves, including many marine areas, river and lake systems, waterfowl habitats, wetlands, and areas used for commercial forestry. Other areas, where planning is to be prioritised, include popular areas located near major urban areas or tourism centres, and areas in archipelagos facing intense pressures related to boating and the construction of holiday homes. Other factors, that further increase the urgency of planning, include the existence of sites in need of management or restoration, that contain species or biotopes of high conservation value as listed in EU directives.

The Natura general plans strive to consider issues at a wider regional scale. In Lapland, for instance, issues discussed included the needs of tourism and reindeer herding, land use pressures related to mining and ore prospecting, and the relations of hunting, farming and forestry to protection of Natura site values. Other issues considered in the plan were recreational needs and the traditional land use rights of the indigenous Sámi.

During 2007 the NHS is drafting a work programme for the management planning of Natura sites over the next few years. This will enable more effective allocation and use of resources, since the consequent field inventories and visitor surveys can be planned to complement other activities with long-term needs in mind.

Basic Data from Protected Areas Used in Management Planning

Comprehensive data on all the areas managed by Metsähallitus is collected for the purposes of management planning and monitoring. Data is also collected on private lands which are included in planning areas. Basic data includes administrative data for each area, information on habitat types, typical and threatened species, cultural heritage values, recreational facilities, and information on land uses in the planned area and surrounding areas. This data is collected from various sources and databanks, and is supplemented by additional surveys where necessary. The data is stored in Metsähallitus's own Geographical Information Systems and other data systems used by the NHS.

Information on natural and cultural features, land use history and visitors is also incorporated into relevant surveys and reports made or commissioned by Metsähallitus or other organisations. References from these reports and publications are collected in a database. The regional units of the NHS are responsible for collecting, maintaining and updating information on the areas they manage.

Management plans include information on the history and the present state of areas, definitions of natural values, cultural values and the importance of the area to its users, and forecasts of future developments and possible threats. Descriptions of the present state of areas drawn up using basic surveys and other available data are presented in plans in concise summary form illustrated with maps.

This basic data also forms the main body of the park profiles (see Appendix 5) used in monitoring the state of the parks. The profiles also include brief descriptions of the most important conservation values of protected areas, their significance in the protected area system, and attached maps.

BASIC DATA FOR PROTECTED AREA MANAGAMENT PLANNING

Area management
- real estate data
- statutes
- status of management plan

Natural history
- natural history of the area

Habitat types and species
- Metsähallitus and Natura 2000 habitat types
- typical and threatened species
- directive-listed species
- the NHS's responsibility species
- geological features

Cultural heritage
- ancient relics
- valuable buildings and constructions
- cultural and traditional biotopes
- place names

Facilities
- structures
- buildings
- trails
- routes

Use of the area
- different land uses
- leasing and land use rights
- numbers of visits
- visitor surveys
- customer feedback
- impact measures

Land use in surrounding areas
- regional land use plan
- local master plan
- natural resource plan

8.3 Financial and Human Resources

Finnish nature conservation enjoys a good level of funding in international terms, according to the protected area management effectiveness evaluation. However, the evaluators drew attention to the comparatively small size of the personnel with respect to this field of operations at the time (in 2004), and especially when it is considered that these operations will still be expanded in the near future. The evaluation team favoured the idea of seeking out new sources of funding, including private and voluntary contributions. The diversification of project funding has been successful, and voluntary conservation work has created new openings.

The overall funding of protected areas and programmes increased in Finland from 63 million euros in 2001 to a total of 70 million euros in 2005 (see Table 17). The amount of funding for acquiring new areas fell by 6 million euros, while at the same time, the sum apportioned to the management of areas increased by 11 million euros. Around three-quarters of the total funding was used for Metsähallitus activities in 2005. Significant funding for the acquisition of land and other purposes was also channelled through regional environment centres.

8.3.1 Basic Tasks Financed from the State Budget

The NHS used 53.3 million euros to finance its activities in 2005. Of this sum some 11.5 million euros was used to acquire land for nature conservation. The use of total funding showed a steep increase compared to 2004 (36.5 million euros). This is mainly a result of the new Metsähallitus Act which made the NHS responsible for additional tasks related to the acquisition of land for nature reserves, the administration of hunting and fishing affairs, as well as log-floating and the maintenance of seed-banks.

The majority of NHS funding (around 85%) comes from the State budget, distributed through different ministries. The Ministry of the Environment supplied about 64% of funding, and the Ministry of Agriculture and Forestry 12%. The Ministry of Labour and the Ministry of the Interior are also both important sources of funding, supplying 5.8% and 2.4% respectively. Information on the usage of funding by source and unit has been collated in Figure 48 and Table 18.

Long-term trends in NHS funding between 1990 and 2005 are shown in Figure 49. Important changes occurred in 1992, 1998 and 2005, when the activities of Metsähallitus and the NHS were developed by improving the organisation and transferring tasks. In 2002, along with protected areas from the Finnish Forest Research Institute (Metla), area management personnel and financial allowances were transferred to Metsähallitus.

National and regional projects with special funding

Part of the budget funding has in recent years been earmarked for national or regional projects. As a member of the EU, Finland has been able to apply for project financing from EU funds since the beginning of 1995. Such funding must always be complemented with national contributions in proportions that vary according to the funding programme and project type. In most cases national funds have covered at least half of each project's overall funding.

Table 17. Funding provided for protected areas and nature conservation programmes (million euros). Source: Statistics Finland, Natural Resources and the Environment 2005.

	2001	2002	2003	2004	2005	2006
Land acquisition	32	23	22	29	26	24
purchases of private land	17	13	6	14	26	25
land exchanges	15	10	15	15	–	–
Protected area management	14	16	24	21	25	26
Conservation compensation	12	16	9	16	17	14
LIFE Natura	2	2	2	2	1	1
Employment funds (Ministry of Labour)	3	2	1	1	1	1
Total	**63**	**59**	**58**	**69**	**70**	**67**

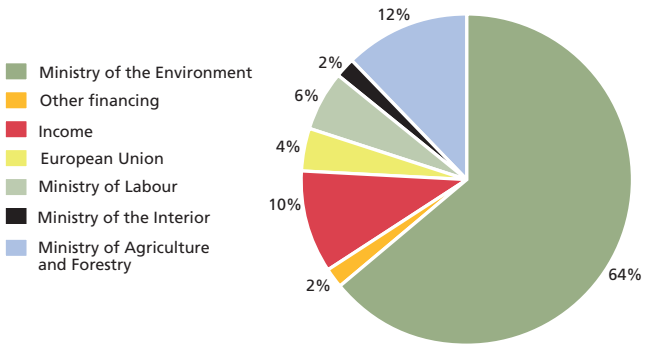


Figure 48. Funding sources for the Metsähallitus Natural Heritage Services in 2005 (million euros). Source: Metsähallitus.

Table 18. Total expenditure of the Metsähallitus NHS by funding source and by regional unit in 2005. The second table does not include funds for land acquisition (11.5 million euros). EU funding includes funds directed to projects through the Government budget. Source: Metsähallitus.

Source of funding	1 000 e	(%)
Ministries, total	45 459	85.2
Ministry of the Environment	34 361	64.4
Ministry of Agriculture and Forestry	6 468	12.1
Ministry of Justice	196	0.4
Ministry of the Interior	1 303	2.4
Ministry of Education	53	0.1
Ministry of Labour	3 078	5.8
EU funding, total	1 882	3.5
European Agricultural Guidance and Guarantee Fund (EAGGF)	15	0.0
European Regional Development Fund (ERDF)	762	1.4
European Environmental Fund (LIFE)	1 105	2.1
Other non-governmental funding	117	0.2
NHS's own income	5 246	9.8
Other Metsähallitus funding	640	1.2
Total	**53 344**	**100.0**

NHS regional units	1 000 e	(%)
Unallocated expenses	2 954	7.1
Central Unit	7 335	17.5
Southern Finland	12 832	30.7
Ostrobothnia	7 875	18.8
Lapland	10 822	25.9
Total	**41 818**	**100.0**

The national programmes METSO and VILMAT started at the beginning of 2003, and the Finnish Inventory Programme for the Underwater Marine Environment VELMU in 2004. These programmes have been realised within Metsähallitus using funding from ministries and other project funding sources.

Under the METSO Forest Biodiversity Programme for Southern Finland during the period 2003-2005 some 5 million euros of Ministry of the Environment funding was used for habitat restoration and management work, as well as 4.1 million euros for biotope inventories in protected areas. The METSO Programme has been able

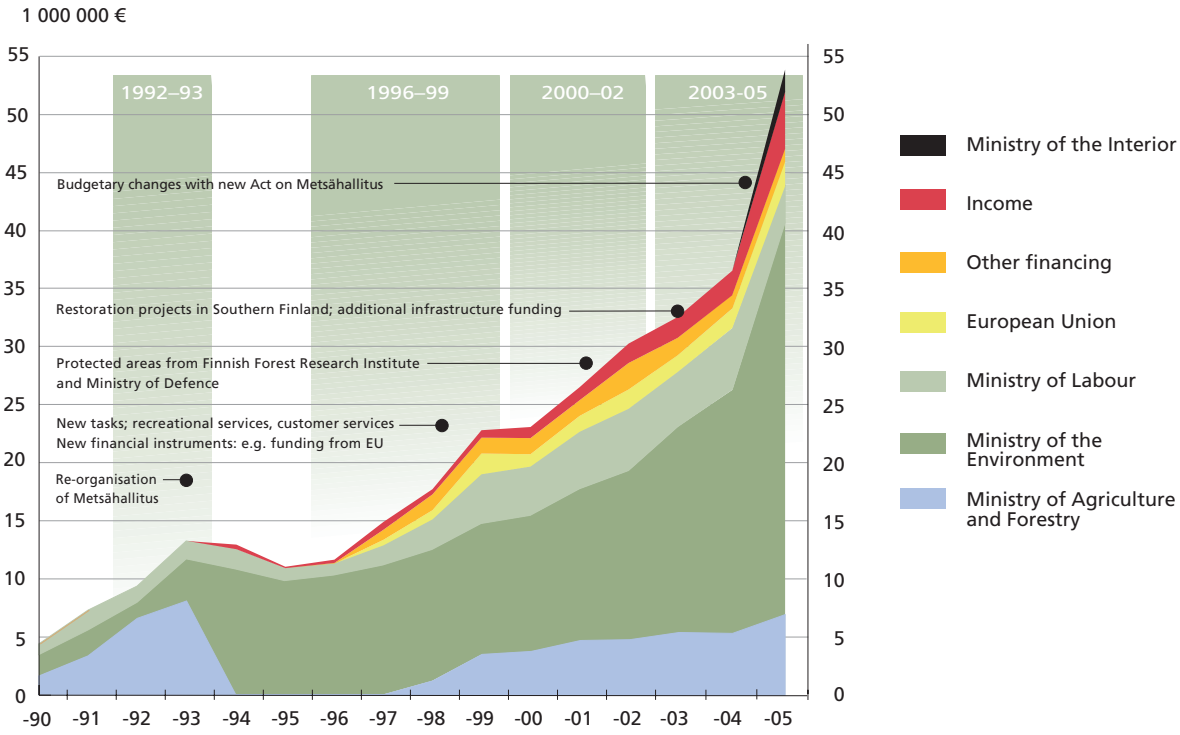


Figure 49. Trends in the funding of the Metsähallitus Natural Heritage Services 1990-2005 (million euros). Source: Metsähallitus.

to use a total of 1.2 million euros of EU LIFE funding to finance its activities.

An additional 2 million euros was allocated from the spring 2003 supplementary budget to improve facilities for visitors in nature reserves and support the aims of the VILMAT action plan to develop nature tourism and the recreational use of natural areas. Some 1.6 million euros, 80% of the total sum, was used in areas run by the NHS Southern Finland. The extra funding was used to develop visitor facilities in 19 national parks and several other protected areas. The extra funding for management and maintenance is estimated to have provided around 13 man-years of work, and the extra funding for building facilities around 15 man-years. The action plan has been otherwise realised by channeling work and basic funding investments according to its objectives.

No budget funding has been specifically earmarked to finance the VELMU programme, but a significant portion of the project money used by NHS has been part of the programme. Funding has come from both the Ministry of the Environment and the EU.

Altogether, a total of 1.9 million euros of EU funding was used in 2005. The great majority of this came from LIFE funds (1.1 million euros) and the European Regional Development Fund (0.8 million euros). In 2005 there were 17 ongoing LIFE projects, five of which were led by Metsähallitus (see Appendix 20). The level of EU project funding has remained basically unchanged between 2001 and 2005 at an average of 1.8 million euros per year, but its share of the overall funding has decreased slightly and has in recent years been close to 5%.

NHS incomes provided almost 10% of the funds used during 2005. The administration of hunting and fishing issues is self-financing if game and fisheries projects funded by the Ministry of Agriculture and Forestry are not taken into account.

Allocation of resources

The use of financial resources has been spread fairly evenly across the different areas, when long-term overall funding is examined according to the new regional division (Southern Finland, Ostrobothnia, Lapland). Ministry of the Environment funding has been emphasised more in the south, while funds from the Ministry of Agriculture and Forestry and the Ministry of Labour have concentrated in Ostrobothnia and Lapland.

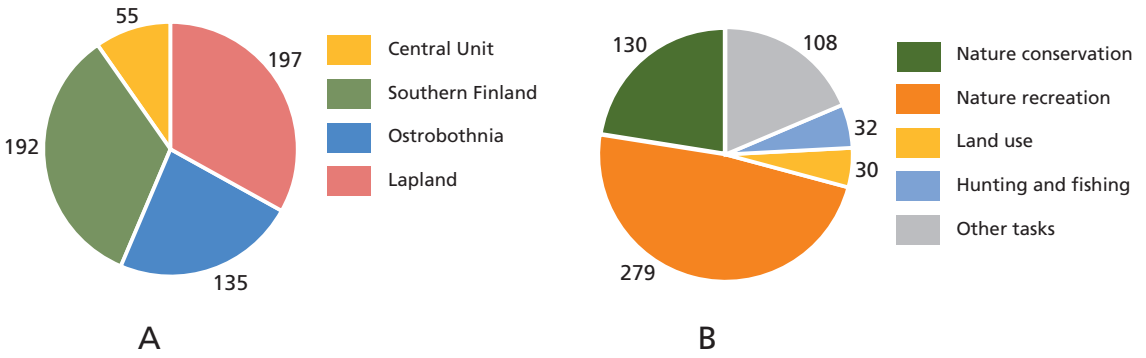


Figure 50. Distribution of the total work contribution of the Natural Heritage Services in man-years by unit (A), and by task (B). Source: Metsähallitus.

Southern Finland has been the main beneficiary of EU LIFE Funds and structural funds have mainly been used in Ostrobothnia.

The distribution of the use of working time was monitored within the NHS during 2004 and 2005. A total of 579 man-years (MYrs) were worked in 2005, distributed thus: Central Unit (9%), NHS Southern Finland (34%), NHS Ostrobothnia (23%), and NHS Lapland (34%). The composition of the current steering units is a little different from the former central unit. The distribution of man-years per can be seen in Figure 50A.

Resources are mainly channelled towards the NHS core tasks (see Fig. 50B). The four main process areas (nature conservation, recreation, protected area management planning, and game and fisheries) used 81% of the overall work contribution, and other tasks (e.g. international activities and supportive tasks) 19%. Recreation accounted for almost half of the work contribution (48%), nature conservation a good fifth (22%), and protected area management and game and fisheries about 5% each.

In **nature conservation** the inventorying, management and monitoring of biotopes consumed 75% of the work contribution. The number of man-years directly used in the implementation of the METSO Programme was 56, of which more than half consisted of biotope inventorying.

Of the work contribution invested in **recreation**, 60% was concerned with facilities for hikers and 40% with nature interpretation and guidance. Of the work contribution for facilities over 70% (168 MYrs) related directly to freely available facilities. In nature interpretation and guidance, most of the work contribution was directed towards free advice (41 MYrs); the maintenance, restoration, repair and construction of visitor centres and other customer service points (11 MYrs); and the Outdoors.fi web service (9 MYrs).

In **protected area management planning**, a little over half of the work contribution was invested in management planning and other land use planning. The figures for **game and fisheries** only pertain to the work contribution in the NHS units (the great majority of the work done in 2005 was still carried out within Metsähallitus's Forestry Unit).

Almost half (46%) of the working time used in the **central unit** was for international and support tasks. Both recreation and game and fisheries used around a fifth of the total working time (the central unit was still responsible for the supervision of hunting and fishing in 2005).

Of nature conservation work proportionately the greatest share was done in Southern Finland, whereas proportionately most work for recreation as well as game and fisheries was done in Lapland. Protected area management planning effort was proportionately greatest in Ostrobothnia.

8.3.2 Staff Committed and Capable

The management of protected areas and of their use requires a professionally-skilled staff. The most important areas of staff capability are nature conservation biology, land use planning, and practical construction, maintenance and repair work. Staff who work in the field must be physically and mentally capable to work independently in demanding natural conditions.

Well-being at work and the building up of skills required to execute tasks are important factors for motivating personnel. Attempts are made to take this into account in personnel policies.

Personnel numbers, structures and expenses

The size and structure of the NHS personnel during 2002-2005 is presented in Table 19. A large percentage of the total work force, around 70%, consists of temporary staff. This is because of the large amount of seasonal work in customer service operations and in the field. In 2005, nearly 60% of the total work contribution was done by personnel with permanent contracts and 40% by temporary workers.

The total wage bill (excluding additional expenses) was 16 million euros. The total work contribution increased by almost 10% during the period 2001-2004, but levelled out in 2005. The average age of personnel was 46.5 for those on permanent contracts and 39 for temporary workers. Women made up about a third of the work force. Of the permanent work force, nearly half held academic degrees.

Reasonable levels of job satisfaction

The promotion of well-being at work in Metsähallitus is based on an annually formulated action plan which emphasises preventative measures. Staff satisfaction is measured by means of a personnel study carried out every other year. The state of the work community, supervisory work and workers' general ability to cope are evaluated annually in development discussions. Performance and development discussions are held at least once a year.

Factors related to staff well-being at work over the period 2002-2005 are presented in Table 20. According to the results of the Metsähallitus personnel study carried out in autumn 2005, Metsähallitus as an employer received an average rating of 8.2 (on a scale of 4-10). This was the same rating received in 2003. There were, however, significant differences between different regional units, teams and staff groups. On

Table 19. The Metsähallitus Natural Heritage Services personnel 2002-2005. Source: Metsähallitus.

	2002	2003	2004	2005
Employees, total	**1 026**	**1 096**	**1 122**	**1 026**
change from previous year %	5.1	6.8	2.4	-8.6
permanent, number / %	291 / 28	307 / 28	324 / 29	341 / 33
fixed-term, number / %	735 / 72	789 / 72	798 / 71	685 / 67
Employees at year end	481	527	553	490
permanent, number / %	287 / 60	301 / 57	318 / 68	338 / 69
fixed-term, number / %	194 / 40	226 / 43	235 / 42	152 / 31
Man-years	**510**	**570**	**609**	**579**
change from previous year, %	9.6	11.8	6.8	-4.9
permanent	280	285	310	336
fixed-term	230	285	299	243
Average age of employees at year end				
permanent	45	46	45	46.5
fixed-term	40	39	40	39
Educational level of permanent staff				
university degree or comparable, %	44	45	45	46
Total payroll, million euros (not incl. expenses)		**14.4**	**15.9**	**16.0**

a scale of 1-5, average job satisfaction ratings remained virtually unchanged at 4. Development discussions have in recent years been attended by almost nine out of ten workers.

Around 2% of total working time was lost due to sick-leaves in 2005. There were 24 accidents, which contributed to an average of 0.45 days off work on sick-leave per man-year. Both of these statistics fell slightly over the review period 2001-2005.

Systematic training and sharing of best practices

The development of professional skills consumed 2-4 days per man-year during 2002-2005. There were a total of 1,240 training days in 2005. Staff development has in recent years been focused on the abilities of field personnel. A total of 65 workers participated in a field workers' training project in 2003-2004, and 55 of participants gained a specialist qualification in the Multiple Use of Forests. Other internal training is arranged according to the subject, and every core process brings all of the staff involved together for training days on topical matters on an annual basis. Systematic guidelines are applied in the orientation of new workers.

The NHS tries to foster coherent and efficient working practices in all national activities. The biotope inventories; management planning; habitat restoration and management methods; visitor surveys and customer research; and customer service tasks and maintenance work are all profiled in detail and steered in such a way that they can be carried out as smoothly as possible. Working methods are developed continuously together with investments in the necessary training.

8.3.3 Valuable Contributions from Volunteers and Employment Schemes

Managing habitats and monitoring species

More than 120 events involving voluntary work were arranged 2001-2006, attracting a total of over 2,000 participants. Some events have been short, a few hours or a couple of days long, while others have lasted over three days. Figure 51 shows how these events have been distributed over the years.

Many events have been arranged in conjunction with environmental organizations, notably the WWF and local branches of the Finnish Association for Nature Conservation (SLL). Other collaborative partners have been regional environment centres, schools, ornithological associations and hunting organisations. Voluntary work has typically consisted of habitat management and restoration, inventory and monitoring work, and occasionally building or repairing facilities.

Short events have attracted an annual average of 120 volunteers. More men than women have taken part, and most participants are middle-aged. Longer events are often in the form of camps, and these attract more youths, women and foreigners. Most long-term ongoing inventory work is done by men, almost a third of whom are over 60. Annually, around 100 people have participated in volunteer camps, and 230 have been involved in inventory work.

Voluntary work is felt, by those who take part, to provide a valuable opportunity to play a part in practical nature conservation work, to become more informed about and have enjoyable experiences in natural surroundings, to meet new

Table 20. Well-being of the Metsähallitus Natural Heritage Services staff. Source: Metsähallitus.

	2002	2003	2004	2005
Job satisfaction (staff surveys 2003 and 2005)				
rating given to employer (scale 4-10)	–	8.2	–	8.2
rating given to superiors (scale 1-5)	–	3.9	–	3.8
job satisfaction (scale 1-5)	–	4.1	–	3.9
percentage of staff involved in personal career development discussions over the past year	–	89	–	89
Sick leave, days/man-year	5.9	5.7	4.6	5.3
Work-related accidents	16	11	23	24
accident-related sick days, days/man-year	0.56	0.5	0.35	0.45

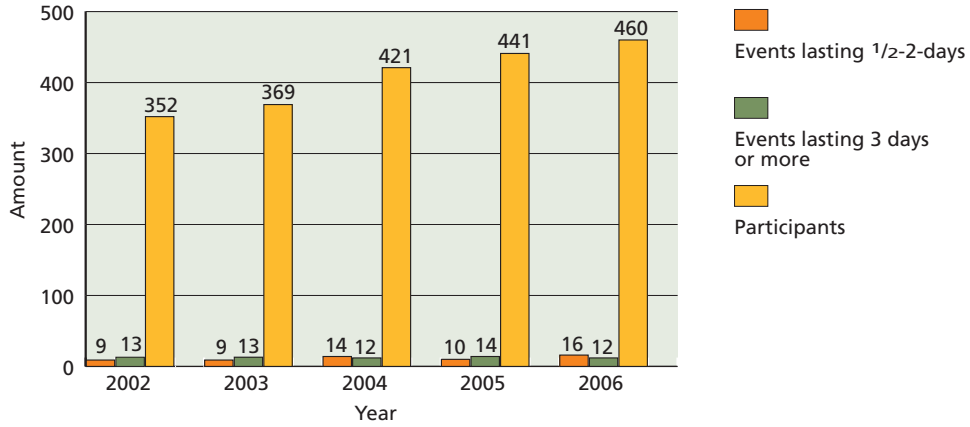


Figure 51. Numbers of voluntary work events organised by the NHS, and participant numbers 2002-2006. Source: Metsähallitus.

people, and to do physical work as a counterbalance to normal activities.

The effectiveness of such events varies widely depending on the abilities and experience of the volunteers. An examination of the achievements accomplished by voluntary work needs to take into account the NHS work contribution and organisational costs including the provision of transport and equipment for volunteer workers.

Voluntary work done by amateur naturalists contributes considerably to species monitoring. Example activities include inspecting golden eagle nests or Saimaa ringed seal dens, and inventories conducted within game survey triangles. The continuation of monitoring must be ensured by maintaining the motivation of those involved in this work and by seeking out new people to participate in surveys. Compensations for expenses are not taxed, when work is done for non-profit NGOs. The expansion of this practice to cover species-monitoring volunteers working for the NHS should be negotiated with the tax authorities.

New ideas have also been considered to develop voluntary work. Employing camp leaders during the field season would partly solve the problem caused by a lack of NHS employees available for weekend work and events held during the holiday season. Charitable sponsoring schemes could be considered with regard to national parks and species, and cooperation with associations of nature enthusiasts could be increased. Young people in particular should be encouraged to join in such activities. Voluntary activities must be examined more systematically, also aiming to identify a wider range of tasks that could be carried out by volunteers.

Rewarding work in building and customer service

In Northern and Eastern Finland cooperation with the administrative sector of the Ministry of Labour has long been productive and even vital for operational development. Funding from the Ministry of Labour over the period 2000-2005 has amounted to 4.2-5.3 million euros per year (this figure includes the national government finances provided in connection with EU structural funds). Unemployment relief funds have been used to carry out nature management work and especially the construction and repair of facilities which would have otherwise been neglected. This funding has also allowed customer service and maintenance work to be carried out more comprehensively than would otherwise have been possible through basic funding alone. Unmployment relief funds have had the biggest impact in the Ostrobothnia-Kainuu region, where over half of the Ministry of Labour funding has been used.

Collaboration with The Criminal Sanctions Agency (RISE) in Southern Finland has provided meaningful work for prisoners in the management of protected areas. The extensive habitat restoration work in Nuuksio National Park would not be possible at present funding levels without the work done by convicts, whose work contribution in 2005 amounted to no less than 18 man-years.

8.4 Management Procedures

Metsähallitus NHS's activities are based on the best available information, goal-orientated management plans, stakeholder participation, systematic evaluations, and the ongoing development of methods and services in accordance with the principles of adaptive management (see Figure 2, p. 23). This work involves the construction of strong networks at home and abroad, and aims for interactive cooperation. NHS management procedures are also based on Metsähallitus's shared values and subsequent environmental policies.

8.4.1 Supportive Organisational Structure and Information Management

National and local networks

The current organisational structure (see Fig. 45, p. 155) and regional division of the NHS fulfils the prerequisites for the flexible and efficient organisation of activities. The general outlines for NHS's activities are decided on a national level in the steering units, where process managers direct core activities. Regional units' activities are the responsibility of regional directors, supported by area managers guiding core tasks. This model strives to promote coherent action and consistent operational principles across the country. Issues are addressed and know-how is developed in national and regional management groups and teams.

Metsähallitus's 50 customer service points comprise a nationwide network (see Fig. 33) with a common visual image and mode of operation. Cooperation between planners and field workers aims to spread and apply best practices, also with regards to the maintenance of hiking facilities. Individual national parks, for instance, are also involved in their own stakeholder, partnership and customer networks.

The NHS regions are divided into park districts, of which there are eight in Southern Finland and five each in Ostrobothnia and Lapland. Park districts are directed by park superintendents, who are in charge of developing the recreational use and nature tourism in protected areas located within tourist areas in their district. They lead regional work teams who take care of hiking and customer services, manage collaboration with local stakeholders, and participate in management planning and steering issues related to the protected areas of their district.

In Southern Finland, which is an extensive and highly varied region with a large number of stakeholders, nature conservation work is also managed through local district teams. The surveying of biotopes in nutrient-rich environments and smaller protected areas, extensive habitat restoration work and the management of many valuable natural sites require more conservation field workers than in the other regional units. Staff has specialist skills in protecting essential species groups and cultural heritage, and the know-how can be deployed across the whole region.

Investment in information systems

Metsähallitus's information management systems are essential to many NHS activies. Metsähallitus has invested heavily in information technology, basic software and electronic administration. Over the last five years the NHS has worked with other Metsähallitus business units and Finland's environmental administration and invested in the development of internet services and particularly in geographic information systems (GIS). The web services are designed for stakeholders and visitors with an interest in protected areas, while the GIS are primarily developed for in-house use.

Data on real estate properties and land use has been collated in Metsähallitus's common GIS. The property information system has been developed in recent years to make it better able to serve the NHS units' special needs regarding protected area management planning, land use administration and advocacy.

Data on natural and cultural values is also stored in Metsähallitus's joint GIS. The forest and habitat information system has been developed to better serve natural resource planning and other land use planning of State-owned lands. Besides details of tree stands, data can be stored also on biotopes as compartments, and species occurrences and cultural sites as point locations. This information is essential to planning and management of protected areas. The system will be further developed in the coming years to facilitate the monitoring of the state of aquatic environments.

Information in the National Board of Antiquities register of ancient relics was transferred in 2005 to Metsähallitus's habitat information system. Part of the data collected by the Geological Survey of Finland and the environmental administration on valuable geological sites is also now available to Metsähallitus. The environmental administration is responsible for collecting information on threatened species nationwide, and NHS experts have access to the data.

The monitoring and planning of game and fish stocks has been a focus area in recent years. Metsähallitus commissioned and implemented a tailored game management planning and monitoring system in 2003. The system has been constructed to plan the sustainable use of game animal populations, and to administrate and register customer feedback on hunting issues. Information collected by the Finnish Game and Fisheries Research Institute on game species' populations is used as background information.

Management of constructed property was much improved by the GIS-based information system that set up in 2004. The system enables efficient planning of recreational facilities and makes it easy to map out the services of any area. It also helps to monitor the condition of buildings and service structures, to plan maintenance work, and it is also used in customer services.

A visitor information management system was developed in a NHS project in 2005-2006. The system contains the results of visitor counts and surveys on all monitored protected areas and customer service points. The system is used to manage and report information related to the numbers and types of customers and their feedback, but it does not individualise customers.

Comprehensive knowledge base for land use planning

The comprehensiveness, accuracy and validity of the information upon which activities are based are central prerequisites for achieving long-term goals. For this reason a great deal of work has been invested in information systems and the collection of data. The basic information required for protected area management planning was discussed above in Section 8.2.2. Such data concerns the management of areas, conservation values and factors which threaten them, and the use of areas. Table 21 shows the status of the basic information required for area planning in various types of areas at the end of 2005.

The cadastral information on all protected areas is comprehensively up-to-date, but there are gaps in the administrative information on areas designated for conservation programmes. The levels of information regarding the assessment and monitoring of biotopes and species in protected areas vary. Most terrestrial biotopes have been assessed in the region of Southern Finland covered by the METSO Programme, but information about Northern Finland must still be supplemented, and data on wilderness reserves is insufficient. There is scant information on marine biotopes, and no information system has yet been set up to store the data. With the exception of threatened and EU directive species, more information on species would be required from almost all areas not yet covered by management plans.

Information on cultural heritage, especially ancient relics, is very deficient. Only a proportion of the recorded sites are included in information systems, and systematic assessments are needed of almost all planning areas. Information on buildings, structures and routes has been collected and recorded fairly comprehensively in Metsähallitus's GIS. Information on the use of protected areas for recreational purposes and as a source of livelihood is also quite comprehensive and has largely been recorded in the information systems. Land use analyses, which include assessments of pressures on and threats to conservation values, have in almost all areas either not yet been conducted or not logged into the information system.

The building up of basic information resources for protected areas will continue in the coming years. The recording of comprehensive and up-to-date basic information in information systems enables areas to be flexibly and efficiently planned. Integrated plans can be compiled to cover several areas of different kinds, enabling assessments of the connectivity of protected area networks. Planning of the use of areas also becomes more rational, when small neighbouring areas can be examined at the same time. Due to scarce planning resources and the need for stake-

Table 21. Levels of different types of basic information available for management planning 2005. Source: Metsähallitus.

Type of information/data	Protected area type					
	Strict nature reserves	National parks	Other nature reserves	Wilderness reserves	Hiking areas	Other Natura 2000 sites
Administration	1	1	2	1	1	2
Habitat types (terrestrial)	2	2	2	3	2	2
Habitat types (aquatic)	4	4	4	4	4	4
Habitat types listed in the Habitats Directive	2	2	2	2	2	2
Species	3	3	3	3	2	3
Threatened species	2	2	2	3	2	3
Directive-listed species	2	2	2	2	2	2
Ancient relics	3	3	3	3	3	3
Buildings	1	1	1	1	1	1
Facilities	0	1	1	1	1	2
Recreational use	0	2	2	3	2	3
Local uses	2	2	2	3	2	2
Pressures and threats	4	4	4	4	4	4

0		Data not needed
1		Sufficient data available in information systems
2		Most of the necessary data available in information systems
3		Data incomplete or only partly available in information systems
4		Data lacking or not available in information systems

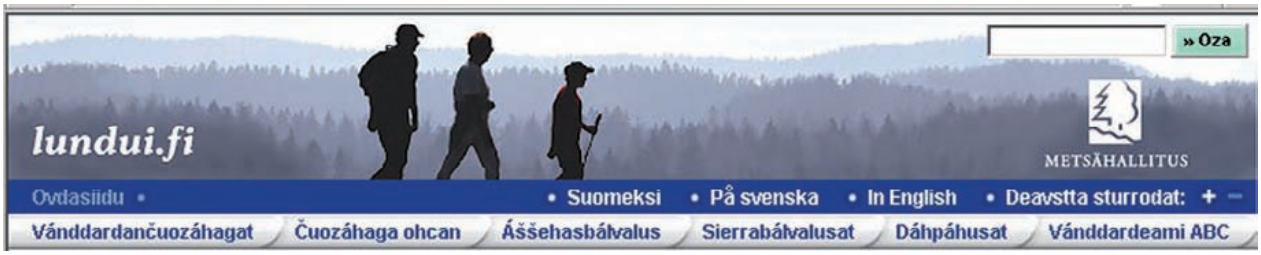
holder participation, this kind of "bunching" is already virtually indispensable in the planning of Southern Finland's small Natura sites.

Open communications with the public

Metsähallitus NHS has many public administration tasks, which are mainly funded from the public purse. This places a great demand for openness in its activities. Such transparency is also required by Finnish legislaton on openness in Government activities, by society in general, and especially by the mass media. One goal of the NHS is to raise the profile of its activities and act in such a way that enhances its public image. Operational preconditions and stakeholder relations of the organisation are supported by good communications.

Statistics on the success of communications in the mass media have been compiled within Metsähallitus since 2000. Some 200-300 press releases a year are sent to regional and local media. During the period 2001-2005 the NHS also released 60-70 press releases a year considered to be of national importance. The information presented in such press releases has been very well used by regional and local media, but on the national level only in about half of the cases.

Web services have increased at both national and local levels to join traditional media as an important communication and marketing channel. The web services of Metsähallitus and the NHS have been renewed, expanded and diversified over the last three years.



The Sámi-language Lundui.fi web-site provides information about the protected areas of Northern Lapland. Metsähallitus's web pages contain one of the most extensive internet services available in any of the Sámi languages anywhere.

Metsa.fi, Metsähallitus's common web service, is targeted at stakeholders. It includes information on nature conservation, and this section was completely overhauled in 2005. The site's Finnish, Swedish and English language pages contain information about issues including the management planning of protected areas; the protection of species, biotopes and cultural heritage; EU projects; and cooperative work at national and international level. The hiking and recreation section presents nature tourism services and related commercial cooperation, planning and monitoring of the recreational use of nature, the supervision of hunting and fishing, and permit procedures. The Metsa.fi website also has a section in the Sámi language, which features on activities in Northern Lapland.

The **Luontoon.fi** web service, built by the NHS over the years 2003-2004, is the most comprehensive and up-to-date source of information in Finnish on the publicly-financed services for hikers and nature tourists provided by the NHS. The website was expanded in 2005 to include versions also in Swedish, Sámi and English (Outdoors.fi) and now features information on over 100 protected areas and cultural sites with services for visitors. This multi-lingual site was visited a total of 1 million times in 2005 and nearly 1.7 million times in 2006.

The **Suurpedot.fi** website, which features detailed information about Finland's four large carnivores and their protection, was launched as a renewed version in 2004. This site is maintained by the NHS under the supervision of a steering group with representatives of several relevant stakeholders. The site attracted some 70,000 visitors in 2005.

Printed and electronic publications complement these web services. The NHS publishes studies and reports relating to protected areas, reports about different kinds of activities, and management plans in its three serial publications. The NHS also prepared a dozen books about protected areas during the period 2001-2005. The book *Seas of Blue, Seas of Green* about Finland's national parks was published in Finnish and English in 2001. An updated fourth Finnish-language edition of Suomen retkeilyopas (Guide to Hiking in Finland) was published in 2005.

A dozen general booklets on different topics and some 40 smaller brochures featuring individual national parks and other protected areas were published over the period 2001-2005. However, the NHS has sought to reduce the amount of printed material and serial publications, and moved more in the direction of electronic publications that can be read online and printed out from websites.

The international MEE of Finland's protected areas drew attention to NHS's communications. The evaluation team felt that the NHS should communicate more about how it uses public funds, and about the benefits of its work to the general public. Visitors to protected areas receive sufficient information, but there could be more communications about nature conservation. A lot of such information has been added to the NHS web pages in 2005. Reporting on the state of the parks in Finland will also add more depth to the image of Metsähallitus's social responsibility with respect to protected areas.

8.4.2 Cooperation at Many Levels

To achieve common goals, the operating principles of the NHS include in-house and inter-organisational cooperation, both at home and abroad. Stakeholder cooperation is also emphasised as a means of finding out information and different kinds of views about the use of protected areas, and helping to build up approval for their establishment.

It is difficult to conceptually differentiate stakeholder collaboration from other kinds of cooperation. Cooperation involves activities which may be based on contracts or involve some kind of commercial partnership. This kind of cooperation is often project-based and linked to clear objectives. The goals of stakeholder collaboration are often difficult to define precisely. Certain actors, such as regional environment centres, may play different roles in different collaborative contexts.

Cooperation and contracting within Metsähallitus

The NHS cooperates with other Metsahallitus units through both joint development projects and the purchasing of services. The NHS has in recent years participated actively in Metsähallitus's natural resource planning by especially emphasising objectives that promote nature conservation and the recreational use of nature. Planning projects have been led by the Forestry Unit.

The NHS purchases expert services from Metsähallitus's business units. In 2005 these services amounted to almost 60 man-years (MYrs). They consisted mostly of:

- Forestry work related to habitat restoration in nature reserves (20 Myrs) and of tasks related to hunting and fishing (17 MYrs)
- Laatumaa work acquiring land for nature reserves (14 MYrs)
- Wild North work related to the sale and marketing of permits for hunting, fishing and off-road traffic (7 MYrs)
- administrative services related to legal matters and information management (2 MYrs).

In the beginning of 2006 staff who dealt with NHS personnel, financial and office services were transferred to Metsähallitus's common service centre, from where these and other support services will be purchased in the future.

Practical benefits from research cooperation

Metsähallitus is not a research institute, so cooperation with different kinds of research institutes is an important way of receiving research information. This information is needed for the protection and management of the areas administered by the NHS and the natural and cultural heritage they contain. The NHS is already a cooperation partner in many research projects with research institutes and universities, but such cooperation could be significantly widened.

The importance of research was accentuated in 2003 with the formulation of Metsähallitus's nature conservation research strategy. This defines the primary research requirements and lists the benefits researchers obtain by cooperating with Metsähallitus. Representatives of the central cooperation partners were also brought together to form a scientific advisory committee.

Nature conservation research and monitoring requires long-term cooperation, which can be offered especially by research institutes funded by the State budget. The rapidly changing nature of university research groups can, on the other hand, make them innovative. Metsähallitus strives to participate in research projects and applications for research funding as a cooperative partner. Metsähallitus NHS can also actively bring research teams together to apply for funds to conduct research that will generate information to meet Metsähallitus's own needs. However, the scientific and financial responsibility for research projects is assigned to professional researchers.

The NHS has aimed to consolidate cooperation with different kinds of partners by signing cooperation contracts. Contracts have been signed with:

- Geological Survey of Finland (GTK)
- Finnish Forest Research Institute (Metla)
- National Board of Antiquities (NBA)
- Finnish Game and Fisheries Research Institute (RKTL)
- Finnish Environment Institute (SYKE).

The NHS has been able to utilise the information produced by research programmes of recent years in many ways as a theoretical base for the development of the conservation and recreational use of nature. The findings of joint research projects have also been applied, for instance, by assimilating common assessment and monitoring methods. Practical application of research results helps the scientific community to make concrete contributions to the adaptive management of protected areas (see Fig. 2, p. 23).

The major national biodiversity research programmes (FIBRE 1997-2002 and MOSSE 2003-2006) have produced notable quantities of research findings that have shed more light on the occurrence of species and their habitat requirements, changes in the number and quality of biotopes, and factors which pose a threat to biodiversity. The information produced will be used with the researchers to further develop means of protecting and managing biodiversity and to evaluate the state of nature conservation in Finland.

The SAVA project, led by SYKE, evaluated Finland's protected area network at the turn of the century. The project's key findings regarding shortcomings in the protection of forests in Southern Finland and concrete suggestions about how to develop the network in quantitative and qualitative terms have directed conservation work to a large extent in recent years. Metsähallitus has significantly improved the quality of landscape ecological planning and increased the coverage of the ecological network.

Within the METSO Programme, habitat restoration measures have been developed to have more of an impact and to be more cost-efficient. Close cooperation with the research network connected to the METSO Programme is continuing, even though the MOSSE Programme ended in 2006. There is also cooperation with the Universities of Joensuu and Jyväskylä as well as Metla on matters related to the restoration of forest and mire habitats. NHS's experts have long cooperated with researchers from SYKE, and the Universities of Helsinki, Oulu and Joensuu, focusing on the conservation of species and biotopes, especially those that are red-listed.

A close-knit research network operates in Finland to protect the Baltic Sea. Metsähallitus is involved as a major partner in the Finnish Inventory Programme for the Underwater Marine Environment VELMU. NHS marine biology centres include Helsinki, Turku, Vaasa, and Oulu (and also Ekenäs and Kotka in the near future). Each centre cooperates closely with university and research institute partners (Finnish Institute of Marine Research, SYKE, RKTL) who produce information on changes occurring in the Baltic marine ecosystem, and the impacts of conservation. Within the VELMU programme, cooperation with the University of Turku and Åbo Academy was launched in the Archipelago Sea pilot area in 2004. The results of these projects facilitate inventory work carried out right around Finland's coasts (see Fig. 6 on p. 33 and Information Box 19, p. 190).

The Geological Survey of Finland (GTK) played a crucial role in the study of special geological values in the Kvarken Archipelago World Heritage Site. Without such research, the site would probably never have been added to the World Heritage List. Research carried out on the seabed is also useful as background information for the VELMU inventories in the Kvarken Archipelago. Many projects related to basic geological inventories have been carried out in other areas, and the GTK has coordinated local inventories according to Metsähallitus management plan schedules.

An exhibition presenting the traces of the last Ice Age in Finnish landscapes was also set up together with the GTK. This exhibition has been on show in Metsähallitus visitor centres in many parts of Finland. Such cooperation has made it possible for the GTK to introduce important geological sites and its own work to a wider audience, while the NHS has used the exhibition to help highlight the significance of protected areas in the conservation of geological diversity.

The National Board of Antiquities (NBA) is the most important cooperation partner regarding the management of cultural heritage in the NHS areas. The NBA has expertise that Metsähallitus does not possess. A cooperation framework agreement was signed with the NBA in 2003. Concrete cooperation with experts in the fields of archaeology and architectural history should intensify further, when the NHS begins to systematically assess the cultural heritage of protected areas over the coming years. Training and field surveys have already been organised.

Cooperation between Metla and Metsähallitus within the framework of the first National Outdoor Recreation Demand and Supply Assessment (LVVI) has resulted in diverse research and cooperation since the year 2000. Visitor monitoring and customer research methods, for instance, have been purposefully developed. Standardised practices have been implemented nationally and NHS's management of visitor information has also been presented at international research forums. Cooperation in recent years with Metla and universities has worked towards the development of evaluation methods to measure impacts of nature tourism on regional economies.

The Finnish Game and Fisheries Research Institute (RKTL) plays a central role in overseeing sustainable hunting and fishing in Finland. Trends in game and fish stocks are monitored nationally through information supplied by hunters and fishers on their catches and the related conclusions drawn by researchers. Metsähallitus's decisions on annual hunting and fishing quotas are then based on these calculations. The RKTL also collects area-specific monitoring data on numbers of reindeer and large carnivores from various sources. In 2005 Metsähallitus was involved with the RKTL in a total of some 30 joint projects involving seals, reindeer, arctic fox, river pearl mussel, native salmon and the significance of fishing in the indigenous Skolt Sámi area of Lapland.

On the basis of the RAPPAM assessment carried out in connection with the international evaluation, NHS staff feel that research results are used fairly routinely in management planning, although there was seen to be room for improvement. Sufficient key ecological research is conducted from the point of view of planning, but a lack of socio-economic research concerning protected areas was perceived. Research topics of importance for management are well recognised and placed in order of importance. One challenging area for improvement is evaluations of the impacts of management measures.

Expanding know-how through international projects

International collaborations by Metsähallitus NHS are part of the Finnish environmental administration's international activities. The activities focus on protecting natural features in the Fennoscandian boreal zone, because the work also supports the conservation of nature in Finland. There is close cooperation with Russia in particular, but also with Estonia, Norway and Sweden. Metsähallitus is an active representative of the Finnish environmental administration in cooperation between different countries and international organisations, and there has also been cooperation with the Province of Hunan in China, South Korea, and the park administrations of Lithuania and Namibia.

International collaboration is carried out both on an organisational level and a grassroots level through personnel exchanges and other direct contacts. Everyday work often includes tasks that cross national borders, such as multilateral EU projects, and law enforcement work and the monitoring of large carnivores in Lapland. More detailed descriptions of the collaborative projects can be found in Sections 8.5.6 and 8.5.7.

The NHS staff are encouraged to apply for international posts to help them learn how to network and acquire the new skills needed for international dealings. Similarly, training opportunities are offered within the NHS to foreign colleagues to support international networking.

8.4.3 Stakeholder Participation in Planning and Management

Metsähallitus strives for transparency and dialogue in all activities. Different kinds of interactive operational procedures are essential elements of planning the use of lands and waters. Interaction procedures produces additional information about the operating environment and can prevent possible conflicts. Metsähallitus's stakeholder network is exceedingly broad, extending from local amateur naturalist clubs and village committees to Parliament and international organisations.

Key stakeholders, with whom Metsähallitus cooperates during both the drafting and implementation of management plans for nature reserves, are located across the country in the public and private sectors, as well as the "third sector", which is comprised of NGOs (see Fig. 52).

Public actors as everyday partners

Among Metsähallitus's most important stakeholders are the ministries that fund and direct its activities: the Ministry of the Environment and the Ministry of Agriculture and Forestry. NHS top management collaborates with the ministries, but for the NHS regional units the most significant everyday partners are the regional environment centres. The regional environment centres issue official statements and grant permits allowing exceptions to the regulations controlling privately-owned protected areas, which are often necessary to carry out management work. They are also important partners in most EU-funded projects. The NHS engages in little practical cooperation with the regional forestry centres, but they have been partners in certain projects and the NHS has provided training for forestry centre workers.

The NHS is an important employer in Eastern and Northern Finland, both of which suffer from high unemployment. The regional employment and economic development centres and the municipal employment authorities value the work done by the NHS, and projects have been provided with high levels of unemployment relief funding. Many educational institutes, including polytechnics, have close relations with Metsähallitus. Häme University of Applied Sciences' training forests in Evo adjoin the Evo National Hiking Area and its neighbouring nature reserves. The institute's students often carry out dissertation work on issues related to protected areas.

Certain areas which are used by the Finnish Defence Forces are valuable from the point of view of nature conservation, and cooperation with the army has led to practical protection measures being implemented in areas including Säkylänharju in Western Finland, which contains valuable esker species. Many large protected areas lie alongside Finland's national border. In these areas cooperation with border guards, customs officials and the police is important in law enforcement, game and fisheries supervision and other matters.

Regional council activities closely relate to the NHS at least in their formulation of regional development plans and land use plans. Advocacy and the management of stakeholder relations are important, because this is the only way to ensure that nature reserves are taken sufficiently into account. Regional councils often also fund projects.

The municipal interest in the NHS activities has increased in line with the growth of nature tourism. Municipalities are interested in how national parks and other nature reserves are managed, and they want to participate in management planning. Popular parks influence

Figure 52. Stakeholder and partner groups involved in Metsähallitus's protected area planning and management. Source: Metsähallitus.

planning, traffic arrangements and building of municipal infrastructure in their surroundings.

The Sámi Parliament of Finland is responsible for issues defined in the Act on Sámi Cultural Autonomy. Metsähallitus is obliged to negotiate with the Sámi Parliament about all issues related to the Sámi, and the Sámi Parliament is asked to provide official statements on all plans for areas in the Sámi Homeland. In addition to such official cooperation with the Sámi, there is also much more informal and everyday cooperation and interaction. The Northern Lapland Nature Centre is located within the Siida complex in the same premises as the Sámi Museum, facilitating the exchange of information on cultural matters.

Media relations are extremely important from the point of view of the NHS's successful management of basic tasks. Relations with the media are managed by inviting reporters on excursions to meet and discuss topical issues. Visitor centres often maintain close relations with local journalists who are interested in nature and keen to write about events organised at the centres.

Support of local communities indispensable

The NHS manages nature reserves on State land. However, the acquisition of many Natura sites for the State is still ongoing, so private landowners are important Metsähallitus stakeholders. Activities in nature reserves, such as controlled forest burnings for habitat restoration, can affect the surrounding private land, and vice versa. Additionally, the protection of threatened species sometimes requires the NHS to carry out measures in private lands, even though the regional environment centres are responsible for the majority of nature conservation matters.

It is vital that local residents should have positive attitudes towards protected areas, so the management of relations with local stakeholder groups is emphasised. Visitor centres' premises can be made available to all local people in various ways. Special events can be arranged for local residents, and the NHS can also collect and present details of local history in its guidance.

Many protected areas are very important tourist attractions, so cooperation with tourism enterprises has also been emphasised in recent years. At its best, cooperation benefits both parties, and the signing of cooperation contracts is a way to accentuate the importance of such partnerships. Nature tourism enterprises have been given information and training on Metsähallitus's principles for sustainable nature tourism.

Advisory committees and cooperation groups

Provincial or area-specific advisory committees comprised of representatives from different interest groups have been formed to help decision-making processes regarding the use of State areas administered by Metsähallitus. The task of these committees is to take local attitudes into account and promote the harmonisation of activities. They also provide Metsähallitus with statements on issues related to uses of State land and waters that may have significant impacts on regional policies.

In accordance with the Nature Conservation Act, Metsähallitus can set up advisory committees for national parks. The Urho Kekkonen National Park, for instance, is managed with the help of an advisory committee appointed by the Ministry of the Environment. Municipality-specific cooperation groups are also active in Northern Lapland.

Reindeer husbandry greatly affects Metsähallitus's activities in Northern Finland. Metsähallitus has a special agreement with the Reindeer Herders' Association, which aims to improve cooperation between two important sources of livelihood in Lapland – reindeer husbandry and forestry – with respect to the requirements of those who practice these livelihoods. Care is taken during forestry operations to consider the sensitive nature of local environments and the needs of the Sámi and reindeer herders.

Participating in the planning of the proposed Inari National Hiking Area in Lapland. The new area as envisaged by Metsähallitus would encompass 1,200 km² of State-owned lake waters, river banks and recreational forests. The hiking area is already part of the Natura 2000 network. Photo: Metsähallitus.

Dialogues with NGOs

The management of fishing and hunting on State land is of particular interest to the hundreds of thousands of Finns who count fishing or hunting among their hobbies. Fishermen and hunters have organised themselves into associations which participate as NHS stakeholders in many aspects of management related to hunting and fishing.

Environmental organisations are especially interested in nature conservation matters, while hiking organisations and scouts are interested in the use of State land for hiking. Amateur naturalists provide a continuous stream of useful observations on the flora and fauna of nature reserves. Visitor centres' customers include special groups who participate in the development of guidance services and accessibility.

Systematic dialogues were conducted with two major environmental organisations (the Finnish Association for Nature Conservation and the WWF) between 2003 and 2005. These dialogues particularly addressed the land use solutions devised by Metsähallitus for Northern Finland in landscape ecological plans drafted over the period 1996-2000. This process resulted in the protection of 120,000 hectares (1,200 km²) of land, of which around 55,000 ha are productive forest. Parts of these areas will be annexed to protected areas already in existence, some will become Metsähallitus protected forest, and some will be preserved through stand-specific land use decisions.

8.4.4 Many Kinds of Feedback

NHS activities are developed on the basis of monitoring, evaluations and customers' requirements and feedback. The international management effectiveness evaluation (MEE) conducted for Finland's protected areas provided valuable expert feedback on all NHS activities. To support planning, many kinds of feedback are collected

from stakeholders. Customer feedback entered in and audits conducted for environmental and quality management systems are used as bases for repairing found deficiencies and improving working procedures. The media offer a useful means of monitoring how NHS actions are perceived in the operating environment.

MEE recommendations driving development work

The efficiency of the management of Finland's protected areas was evaluated in 2004 by an international team, whose recommendations with a view to enhancing the management of the protected area system are presented at the beginning of this report (see Section 2.3.1). These recommendations also apply to other actors than Metsähallitus, even though the evaluation mainly focused on the management of areas administered by Metsähallitus. The NHS has begun to work with the ministries and other stakeholders to develop national strategies on issues including the application of the ecosystem approach in the planning of the protected area network, and adaptation to climate change. The proposals have also been incorporated in Finland's new national biodiversity action plan for 2006-2016.

The evaluation team came up with a number of proposals and recommendations to improve NHS core activities. To facilitate adaptive planning, the standardisation of activities and efficient sharing of best practices were recommended. Operational models are developed and learnt together in the new organisation to promote these aims. Methods for monitoring the impacts of habitat restoration and nature management have been designed and systematic monitoring is already under way. Land use and management planning as well as cultural heritage matters have become more important and strategic guidance has been improved. The ecological impacts of the recreational use of nature are already being measured in a number of popular sites, while research into the impacts of nature tourism on local economies is being developed continuously in cooperation with the Finnish Forest Research Institute and universities.

State of the Parks reporting will provide useful information to the public and Metsähallitus's own personnel on NHS activities and their significance. This report aims to paint an overall picture of the state of the protected area network and the management of areas.

Continuous improvement through the environmental management system

Metsähallitus manages natural resources on a very large scale, even in global terms. As the steward of extensive lands and waters, Metsähallitus also bears great responsibility for the state of the environment. Metsähallitus was one of the first Finnish public authorities to adopt a certificated environmental and quality management system (EMS), based on the ISO 14001 standard, in 1998. Consequent environmental policies include the multi-objective management of natural resources, responsibility for the environment, continuous improvement and open cooperation.

The most important environmental aspects of Metsähallitus's activities relate to the use of natural resources, the maintenance of biodiversity, the protection of waters and the management of landscapes. Environmental aspects and risks are evaluated annually. To control environmental impacts and continuously improve environmental management, the environmental targets, objectives, guidelines and monitoring methods are also defined annually. The functioning and efficiency of the EMS is monitored through both internal and external audits. Audit results and the feedback system result in proposals for improvements in the EMS, through which the goal of continuous improvement is realised.

Basic internal auditing targets are NHS units, processes and teams. Other targets of annual audit planning might also include certain elements, products or services within activities. The auditing plan for 2006, for instance, included one national park together with a project for drafting its management plan, an EU-funded project, a single task entity within a core process, the regional team for another process, a projected hiking area, facilities along a hiking route, activities related to the supervision of hunting and fishing, and burning methods used in habitat restoration. It is intended that all sites and all tasks with significant environmental impacts will eventually be audited once every three years.

Deficiencies noted during audits are classed according to the EMS content classification and divided into slight and serious deficiencies. A total of 65 sites were audited and 60 slight deficiencies noted during the inspection period 2000-2005 (see Table 22). No deficiencies which would be deemed as serious were found, but in many cases there was seen to be room for improvement; indeed the primary aim of internal auditing is to identify areas for development.

Det Norske Veritas (DNV), that granted Metsähallitus its environment certification, also carries out several external audits a year for Metsähallitus, some of which concern work related to the management of protected areas. The quality and safety of facilities were evaluated in 2005. The evaluation noted two slight deficiencies and the administration of environmental issues was rated overall at 4 on a scale of 1-5. Metsähallitus's Internal Auditing Department evaluates standards of internal surveillance applying the CosoERM framework, with focus largely on the same issues addressed in DNV auditing.

Deficiencies related to environmental issues may be revealed through other means than audits, for instance during routine work, game and fisheries supervising or monitoring tasks. Negative stakeholder feedback can also be classed as deficiencies. Hundreds of feedback messages are received each year through websites, customer service points and other channels, and this feedback is processed under the Metsähallitus EMS. Of the approximately 770 items of feedback received in 2005, half took a clear stance (40% negative and 10% positive), a fifth included suggestions for improvements, and a third were merely enquiries. Most of these enquiries were received through the websites.

Table 22. Internal audits of Metsähallitus Natural Heritage Services and observed discrepancies 2000-2005. Source: Metsähallitus.

Year	Audits	Discrepancies
2000	20	21
2001	9	12
2002	6	10
2003	7	6
2004	11	10
2005	12	1
Total	**65**	**60**

Annual environmental reviews at management level ensure the continuous applicability, sufficiency and efficiency of the EMS. These managerial reviews focus on the whole Metsähallitus group as well as the NHS at national and regional management group level.

Stakeholder feedback compiled to support planning

Stakeholder cooperation with local authorities, municipalities, residents and interest groups is very much part of NHS's routine work. A good 200 public gatherings and events of different kinds are held every year, attracting over 20,000 participants. Similarly, around 200 stakeholder events with municipalities, employment and economic development centres and nature conservation organisations are arranged annually.

The principle of participatory planning, which is integrated into all Metsähallitus planning, requires that stakeholders' opinions are actively sought and listened to. Public meetings are organised and opinions are collected, also through websites, while plans are still being prepared. Steering groups including representatives of key stakeholders are formed to support planners. Statements about plans are solicited from as wide a range of stakeholders as possible, and every citizen also has the right to comment on plans during the drafting stage.

Every NHS region has its own communication plan, which strives to consider the needs and desires of different stakeholders. Different regions must monitor changes in their own operating environments. New stakeholder groups sometimes arise, and it is important to be prepared to adapt to such changes. Visitor surveys, direct feedback and media follow-ups all provide useful information on the attitudes and interests of the users of protected areas.

Customer satisfaction assessed through surveys

Customer satisfaction is monitored at customer service points and through the Outdoors.fi website on an annual basis, as well as through regularly repeated customer surveys in national parks, other popular protected areas and visitor centres. Overall customer satisfaction levels are

assessed by averaging ratings given in response to several questions on a scale of 1-5.

The amounts of written customer feedback have stabilised over the last five years at around 8,000 items per year. This figure includes feedback through the websites, continuous feedback collected through forms distributed at customer service points, and responses to questionnaires used in customer and visitor surveys. The overall customer satisfaction index calculated on the basis of the feedback received through all these different channels has been between 4.2 and 4.5 out of 5. The issue of customer satisfaction will be returned to in Section 9.2.5.

Media follow-up and public attitudes

Metsähallitus and its various business units are often in the public eye, so it is important to follow up media mentions on a day-to-day basis. Media follow-ups reveal both local attitudes and issues of current interest. This information is particularly valuable for the purposes of stakeholder cooperation.

Media follow-ups have been conducted since 2004 as an electronic service, which enables analysis according to subject areas, issues and general tone in addition to the monitoring of individual stories. Daily media monitoring covers the national press, the main provincial newspapers, and major periodicals. National television and radio channels are also monitored.

Almost half of all the news concerning Metsähallitus deal with protected areas or the NHS. National parks in particular, and their services and management, are of great interest to the local press, and to the organisations and citizens who contribute to the letters pages in local newspapers. Topics concerning Southern Finland or newsworthy events are also often featured in the national media. The great majority of what is written is neutral or positive; while a more negative tone often appears in news items dealing with forestry and land use issues in Lapland (which are not linked to protected areas or the NHS), and also sometimes also on issues concerning nature tourism.

8.5 Activities and Achievements

The Natural Heritage Services (NHS) manages protected areas and performs other public administrative functions of Metsähallitus in four broad areas of work: protected area management planning, the conservation of nature and cultural heritage, nature recreation, and game and fisheries. International projects and assignments are managed as part of these functions. The work of the NHS and its results over the period 2000-2005 are described in this section for each of the core processes. The social impacts of protected area management are reviewed in Section 9.

8.5.1 Property and Land Use Management

Protected area management planning tasks became a core function in the NHS organisational reform in 2005. This function includes establishing protected areas (land purchasing, statute drafting and property formation for protected areas), land use planning (including natural resource planning, management planning and the issuing of regulations), land use administration, and protected area information management and impact assessment.

One objective of the international Programme of Work on Protected Areas under the UN Convention on Biological Diversity is to achieve a global network of comprehensive, ecologically representative and effectively managed national and regional systems of protected areas by 2012. This programme imposes requirements on statute drafting, property formation, management planning and impact monitoring for protected areas. Implementing and monitoring Natura sites and the related reporting will thus become still more important functions for the NHS.

Land acquisitions for conservation coming to an end

The Metsähallitus Laatumaa business unit and the regional environment centres purchase nature conservation sites for the Finnish State. Sites procured by the environment centres are generally transferred to Metsähallitus's administration from the Ministry of the Environment. Metsähallitus formerly purchased land with funds secured through land exchanges and land sales, but since

the beginning of 2005 these procurements have been financed through the State budget, with any lands required for exchanges generally purchased from the Forestry Unit. The land areas purchased and secured through transfers of possession to the NHS in 2001-2005 are shown in Table 23.

Most purchases made under the old nature conservation programmes will be completed by the end of 2007. Some 90,000 ha of private land acquisitions needed for conservation programmes had not been completed by the end of 2005. The final purchases, which are chiefly in Southwestern and Western Finland, will be completed by the end of 2009 under an extended financing programme.

The protected area purchases made by Laatumaa under voluntary property sales and the associated costs incurred in 2003-2005 are shown in Table 24. Over 300 sales have been completed annually in recent years at a cost of roughly 250 euros per hectare for holdings averaging about 20 ha in extent.

Since 2005 land purchases have also been made under the METSO Programme based on tenders offered by landowners in Southern Finland. Many unprotected forest areas with greatest species diversity are privately owned. This type of competitive tendering project responds to initiatives taken by landowners and to the supply of land holdings or parts thereof. Decisions to purchase are taken on the basis of set conservation biological criteria, with the primary focus on purchasing lands in the vicinity of existing protected areas. A total of 46 purchases covering a total area of nearly 1,900 ha were made under the METSO Programme in 2005. Some 5 million euros is available for METSO purchases annually.

One thousand new reserves to be established

Considerable work will be undertaken establishing protected areas over the next few years. Metsähallitus administers about 1,500 nature conservation programme sites that have yet to be established (see Table 4, p. 49). More than 1,000 new nature reserves are awaiting establishment. Over three hundred of these are sites of less than 100 ha which may be established through ministry decisions, while the remaining 700 will be established by decree. The other programme sites will be attached to existing nature reserves by decree or through an act. Most of the pending nature reserves are in Southern Finland, with two-thirds of these sites lying south of the Province of Oulu.

One important objective of the NHS over the next few years will indeed be to assist the Ministry of the Environment in drafting statutes for protected areas. Only just under 500 of the more than 2,000 protected sites managed by the NHS have valid legislation passed in relation to their establishment. Two such statutes were enacted in 2005, and four were enacted between 2000 and 2004.

Table 23. Land acquisitions by Metsähallitus (hectares) 2001-2005. Source: Metsähallitus.

	2001	2002	2003	2004	2005
Purchases	4 315	3 542	2 097	4 263	1 740
Exchanges	4 256	4 629	3 535	3 313	3 072
METSO acquisitions					1 884
Administrative transfers	11 210	93 488*	22 621	5 801	3 523
Total	**19 781**	**101 659**	**28 253**	**13 377**	**10 219**

* Includes areas transferred from the Finnish Forest Research Institute and the Ministry of Defence

Table 24. Protected area acquisitions by Metsähallitus Laatumaa 2003-2005. Source: Horne et al. 2006.

Year	Number	Area, hectares (average)	Average costs (euros/hectare)
2003	264	21,6	320
2004	378	20,2	244
2005	347	18,2	246

After protected areas have been established, they must be formed into nature reserve real estate properties (cadastral units). By the end of 2005 nature reserve properties had been established for 68% of statutory protected areas accounting for 87% of the total combined area of these holdings. Some 2,000 such properties will be established or enlarged, creating nearly 8,000 kilometres of boundaries to be demarcated between protected areas and commercially managed forests.

Only a few nature reserve properties (cadastral units) have been formed annually in recent years. However, the process of forming the properties has been developed and tested for several sites. The aim is to form preparational nature reserve cadastral units that may be transformed into a proper nature reserve cadastral units after legislative statutes have been drafted for their establishment. The preparational nature reserve properties facilitate the drafting of statutes, management planning, and area management.

Two-thirds of statutory management plans in force

The management plans required by legislation are drafted for established national parks, wilderness reserves, national hiking areas and certain other nature reserves. About 60 such plans have so far been drafted out of the total of about 90 required. Management plans are drafted for other Natura areas as needed, with needs determined through wider Natura master plans. The plans for most protected areas are drafted by the NHS.

Since 1974 framework plans or newer management plans have been drafted for a total of about 140 protected areas. Plans have been prepared at least once for nearly all national parks and national hiking areas. At the beginning of 2006 the average age of plans was about ten years for national parks and less than two years for national hiking areas. The oldest national park framework plans are already over 20 years old, but many of them are already subject to review (see Table 25). At the end of 2006 there were six confirmed and current plans for strict nature reserves. Management plans have particulalry been prepared for strict nature reserves that are partly accessible to the public (Karkali, Kevo) or lie in the immediate vicinity of a national park (Salamanperä). There are confirmed management plans for three wilderness reserves: Hammastunturi, Kemihaara and Pöyrisjärvi.

Metsähallitus prepared a total of 35 management plans between 2001 and 2005. A further 15 management plans covering 21 Natura areas were completed in 2006. Planning is gradually moving away from individual protected areas towards planning for more extensive protected area complexes. Instead of reviewing smaller Natura sites as separate disconnected entities, it is preferable to plan their management as part of local ecological networks and land use as a whole.

Protected area management plans are prepared in accordance with standardised Metsähallitus guidelines. These plans determine the need for and objectives of habitat restoration and management measures, the extent, objectives and associated conditions of increasing recreational use, and the acceptable limits and indicators to be applied in this respect. Land uses within an area can be guided by dividing the area into zones and planning trails and service facilities to minimise the impact of recreational use on conservation values. This demarcation of zones will also involve access restrictions that are specified in regulations issued on the basis of the management plan.

Regulations have so far been prepared for 35 nature reserves, most of which are strict nature reserves and national parks. Regulations for national parks are statutory. Access to strict nature reserves and hunting in mire reserves (in Southern Finland, where local people have no automatic right to hunt) are only permissible after regulations have been drafted. Regulations were issued for only four areas over the period 2000-2005.

About 60% of national parks have current regulations. Ten national parks in Southern Finland, one in Ostrobothnia and two in Lapland have no regulations as yet. With an average age of about 17 years, many current regulations are also outdated. Efforts are being made to draft new regulations together with management plans where possible. The aim is to update or draft all the necessary regulations by 2010.

Management plans primarily guide the operations of the NHS. It is vital, however, to secure the approval and support of local stakeholders and provincial and national interest groups for

Table 25. Statuses of management plans for national parks and hiking areas in January 2006. Source: Metsähallitus.

National Park	Year established*	Management plan**	Age of plan	Plan under preparation
Helvetinjärvi	1982	1986, 2002	4	
Hiidenportti	1982	1988	18	x
Isojärvi	1982	1984	22	x
Eastern Gulf of Finland	1982	1987	19	
Kauhaneva–Pohjankangas	1982	1985	21	
Koli	1991	2005	1	
Kolovesi	1990	1993	13	x
Kurjenrahka	1998	2005	1	
Lauhanvuori	1982	1985	21	
Leivonmäki	2003	2004	2	(x)
Lemmenjoki	1956	1988	18	x
Liesjärvi	1956	1985	21	x
Linnansaari	1956	1991	15	x
Nuuksio	1994	2006	0	
Oulanka	1956	2003	3	
Pallas–Yllästunturi	1938 (2005)	1998, (2006)	0	(x)
Patvinsuo	1982	1998	8	
Perämeri	1991	1993	13	x
Petkeljärvi	1956	1997	9	x
Puurijärvi ja Isosuo	1993	1995	11	
Pyhähäkki	1956	1984	22	
Pyhä-Luosto	1938 (2005)	1986, (2006)	0	(x)
Päijänne	1993	1996	10	
Repovesi	2003	2004	2	
Riisitunturi	1982	1987	19	x
Rokua	1956	1978	28	x
Archipelago	1983	1999	7	
Salamajärvi	1982	1985, 2006	0	
Seitseminen	1982	1995	11	x
Syöte	2000	2005	1	
Ekenäs Archipelago	1989	1991	15	
Tiilikkajärvi	1982	1998	8	
Torronsuo	1990			x
Urho Kekkonen	1983	2001	5	
Valkmusa	1996	2002	4	
			mean 10	

Hiking area	Year established*	Management plan	Age of plan	Plan under preparation
Evo	1994	2004	2	
Hossa	1979	2005	1	
Iso-Syöte	1985	2004	2	
Kylmäluoma	1979	1992, 2004	2	
Oulujärvi	1993	2004	2	
Ruunaa	1987	2002	2	
Teijo	1991	1992, 2004	2	
			mean <2	

* Pallas-Yllästunturi National Park was originally established as Pallas-Ounastunturi National Park and Pyhä-Luosto as Pyhätunturi National Park in 1938. Both were established as new national parks in 2005 with considerable extentions.

** Management plans for Leivonmäki National Park is temporary, Nuuksio and Salamajärvi scheduled to be completed in 2006, Pallas-Yllästunturi and Pyhä-Luosto likely to continue in 2007.

protected area management. Every planning project includes opportunities for interest groups and members of the public to comment in particular on any area management policies that directly affect such matters as local livelihoods. Opportunities for participation are generally arranged at the beginning and end of projects, and also during several other phases where national parks and wilderness areas are concerned.

Protected area management planning focuses attention on assessing the impacts of solutions, particularly with reference to Natura values (Habitats Directive species and habitats) and indigenous Sámi culture. All plans for areas in the Sámi Homeland are translated into the Sámi language and assessments made by the Sámi Parliament of their impacts on Sámi culture are appended to the plans.

Protected area management planning amounted to about 13 man-years in 2005, which means half of work contribution of the core process. There has been no precise project-specific monitoring. It is also difficult to compare different areas, as the planning work required for each site largely depends on its character and current use. Solutions involving hunting, for example, often require extensive preparation in association with interest groups.

Management planning of protected areas will become more efficient in future years. Systematic work will enable a clearer division and timetabling of duties and the use of national specialists. Information management will be further developed to support planning. A planning and management toolkit is being compiled for marine protected areas. The first initiative of this kind was created by the Baltic Marine Environment Protection Commission in 2004-2005 (*HELCOM BSPA Planning and Management: Guidelines and tools*). This initiative draws extensively on published sources and experiences gained elsewhere in the world.

Safeguarding conservation assets and values

The NHS seeks to alleviate external pressures on protected areas by such means as participating in land use planning, expressing opinions on projects involving the use of land and waters, guiding land use through agreements and permits, working closely with stakeholders operating in and around protected areas and collaborating with the forestry and Laatumaa business units of Metsähallitus.

The NHS also takes part in land use planning working groups and issues statements on regional land use plans and local master plans. Metsähallitus expressed views on about twenty regional land use planning projects and several dozen municipal local master plan projects that were under consideration between 2000 and 2005. It has also been involved in several shoreline planning processes affecting the habitat of the Saimaa ringed seal. Participation in planning is one way of influencing solutions in the vicinity of protected areas that are important for conservation and recreational services.

Participation in natural resource planning for State-owned lands is also one way of overseeing the interests of protected areas. Revised and reformed natural resource plans for Kainuu and Western Finland were completed in 2004. To support protected areas, the latest plans compiled in association with Metsähallitus Forestry and stakeholders have further developed the ecological network of commercially managed forests and conditions for their recreational use. Ecological networks were extended by 3,800 ha in Kainuu and 9,000 ha in Western Finland by excluding valuable environmental and recreational sites in the commercially managed forests from logging operations.

Natural resource plans for Western, Eastern and Upper Lapland were published in 2006. The region's ecological network now covers nearly half of the land holdings of Metsähallitus in Lapland and two-thirds of the total area of the province. The operations of Metsähallitus are increasingly focusing on the objectives of recreational use and tourism by such means as defining focus areas for tourism and extending the network of areas in which landscape and recreational use are important aspects.

Most advocacy work for protected areas consists of environmental impact assessment, recording the views of neighbours, performing inspections and transactions. This work often concerns specific needs for using State-owned lands and waters that could affect the natural values of protected areas. It may concern various road developments, construction projects and

the land extraction in the vicinity of protected areas. A great deal of advocacy work is done in Southern Finland, where areas administered by Metsähallitus are mainly small and fragmented. Clear operating principles, methods and assignments of duties facilitate this undertaking.

Land use within protected areas is also guided by leases and right-of-use agreements, and through various permits. In 2005 the NHS prepared or renewed 220 land use and leasing agreements. A total of 1,350 agreements were in force, mostly concerning various rights of routes. The administration of leases for hunting and fishing areas was assigned to the NHS at the beginning of 2005.

Towards systematic monitoring of sustainability and effectiveness

The aim of monitoring effectiveness is to keep track of how well protected areas are managed and how sustainably they are used, and to provide an overall assessment of social impacts. This comprehensive overview involves collating and analysing monitoring data, and regular reporting. This is a new function on the whole, even though monitoring and reporting have always been part of NHS work.

This State of the Parks report is the first broad summary of NHS activities, compiled to review operations and their impacts over the long term. To improve data collection and analysis, performance measures and information systems need to be further developed. The systematic use of continually updated data systems is a cornerstone of information gathering on individual protected areas. Developing monitoring of the state of and impacts on protected areas may also help to harmonise reporting for various purposes.

8.5.2 Habitat Inventories, Restoration and Management

Managing information on the location and state of habitats and on the direction and pace of their change is essential for the long-term progress of nature conservation. Biotope surveys and species inventories seek to provide comprehensive information on the natural values of protected areas. Comprehensive details of biotopes in nature reserves must be recorded in order to be able to allocate management and restoration measures to the areas where they are most urgently needed. Information is also required when visitors need to be channelled away from the most sensitive areas. Information on threatened species enables the cost-effective allocation of habitat management measures.

Terrestrial habitat inventories largely completed

The data gathered on nature reserves is considerably more diverse than the tree stand data procured in conventional forest assessments. The information includes details of shrubs, Natura 2000 biotopes and site geomorphology, such as esker occurrences. The biotope data collected by the NHS forms the basis for Habitats Directive reporting on Natura 2000 sites. The collated data is also used for assessing the results of the METSO Programme and the need for new conservation measures.

The biotype inventories conducted for the METSO Programme contribute substantially to mapping of the natural values in nature reserves. About 500,000 ha or 14% of State-owned protected areas lie within the region covered by the METSO Programme. A quarter of this area (126,000 ha), comprises established mire reserves lying principally in Northern Ostrobothnia. National parks and strict nature reserves cover about one fifth of the area. One third of the area (167,000 ha) consists of areas within conservation programmes. The programme aimed to complete an inventory of biotopes in nature reserves in southern Finland by the end of 2006. Work began in 2003.

In 2005, the NHS completed inventories of more than 200,000 ha, of which about 92,000 ha were in the METSO area and 120,000 ha were further north. Inventories within the METSO area were almost entirely performed through field work and were recorded in Metsähallitus's geographical information system. Altogether some 425,000 ha, or 85%, of the METSO area target had been surveyed by the end of 2005, and inventories were completed in 2006.

Over 3.3 million hectares of protected areas lie outside the METSO region. Inventories were completed for 2.4 million ha (24,000 km^2) of this area between 1995 and 2000 in the Northern

Lapland biotope survey. Further inventories have subsequently been conducted the region outside METSO, and by the end of 2005 a total area of about 2.8 million ha had been surveyed. Only a quarter of the Northern Lapland biotope survey was performed through field work, while the average proportion of field work in later inventories has been about half. This means that, for reasons of cost, a substantial amount of inventory work was based aerial photographs, resulting in some inaccuracy in the results. Data will be supplemented by field work in the coming years. A nationwide summary of protected area inventories completed by the end of 2005 is shown in Table 7 (p. 70).

The NHS is also involved in biotype inventories of protected areas on privately-owned land, with a view to surveying 50 000 ha by the end of 2006. Some 19 000 ha, or about 38 % of this goal had been achieved by the end of 2005. This information is recorded separately, in a GIS based on the Metsähallitus in-house system.

The total costs of gathering basic data within the METSO region based on work completed in 2003-2005 amounted to about 4.3 million euros (see Table 26). While this work was mainly funded through a State budget allocation, substantial additional financing of about 150,000 euros was secured from the EU's LIFE programme. The unit cost in protected areas of the NHS was about ten euros per hectare, and on privately-owned protected areas about 55 euros per hectare. By the end of 2005, the NHS had devoted nearly 100 person-years of work to biotope surveys in areas covered by the METSO Programme.

Field inventory in a southern forest habitat. By the end of 2006, habitat types had been assessed in protected areas on a total of 500,000 hectares as part of the METSO forest biodiversity programme. Photo: Anneli Suikki.

Marine habitat inventories well under way

The NHS launched its own survey programme for marine areas (MERLIN) in 2003 as part of the VELMU programme. These underwater habitat inventories in marine areas are pioneering efforts in many respects. To find the methods and the necessary expertise for this work has required innovative practices and an extensive network of partners.

Submarine surveying methods were tested in the SAVELIN project in a pilot area of the SW Archipelago in 2004. The work of this project is described in Information Box 19. In 2005 inventory covered already an area of 1,700 ha in the Archipelago Sea. Surveying work continued in 2006, and a similar survey was launched in the Kvarken Archipelago. These surveys will also gradually be extended into the Bothnian

Table 26. Expenditure on and extents of habitat inventories in State-owned protected areas in the METSO region in Southern Finland and related work contribution. Source: Metsähallitus.

Year	Ministry of the Environment funding (1 000 euros)	EU LIFE funding (1 000 euros)	Other funding (1 000 euros)	Total funding (1 000 euros)	Total area inventoried (hectares)	Total work contribution (man-years)
2003	1 508	63	8	1 579	186 773	32
2004	1 413	69	38	1 519	126 185	35
2005	1 186	16	31	1 233	111 791	29
Total	**4 106**	**148**	**77**	**4 331**	**424 749**	**96**

Underwater Survey Methods Developed in the Archipelago Sea

Metsähallitus's SAVELIN project was carried out in the Archipelago Sea in the years 2004-2006 as part of the Finnish Inventory Programme for the Underwater Marine Environment (VELMU). The project was financed through the Ministry of the Environment's research and development funds, and its main aim was to develop methods for surveying the underwater marine environment to be used in subsequent inventories conducted under the VELMU and MERLIN programmes. The end products of the project include guidelines for inventory work to be used by Metsähallitus and other parties in the VELMU programme. The project has cooperated closely with other actors in the programme, and promoted the exchange of information between projects.

Inventory methods developed in the SAVELIN project produce habitat information on larger marine areas, as well as observations of species that can be identified on video film, such as bladder wrack (*Fucus vesiculosus*), eel grass (*Zostera marina*) and pondweeds (*Potamogeton pectinatus* and *P. perfoliatus*). More specific information on the species present in smaller areas can be obtained by observation and sampling by divers. The project mainly focused on surveying biotopes, which can be defined by identifying fixed vascular plants, algae and sea bed types.

Video films

Underwater video films are shot from a boat using a watertight camera connected by a cable to a video camera onboard the boat. The camera used in the SAVELIN project can be used to depths of about 25 metres. The GPS device of the boat is used in photography to precisely define the location where the video was filmed. The method used in the Archipelago Sea was the drop-video method, where a fixed point is filmed for a certain time (30–60 seconds). A GIS grid system is used to select filming points. The size of the grid squares depends on the depth of the water: in shallow waters (<10 m), 50-m grid squares are used, and in deep waters (>10 m) the size of the squares is 150 m. About 30 km^2 of marine areas managed by Metsähallitus were surveyed in 2005 and 2006.

Photo: Metsähallitus.


Photo: Metsähallitus.

Diving inventories and photography

Diving inventories play a vital role in inventories of marine species and biotopes. They are the only way to produce data detailed enough to confirm the information gathered by other rougher methods, such as aerial photography, echo-sounding or underwater video filming. Species and biotopes are also photographed during each dive.

Collecting data on species

Many species cannot be identified during dives because of their small size or because their distinctive characteristics are not easy to see. With a few exceptions, it is also difficult to identify species on video films. Therefore samples were collected in the SAVELIN project during dives. Data on species can be used for comparative purposes in inventories and also for further research. Samples of species are dried and kept in a herbarium.

Bay and the Gulf of Finland (see Fig. 6, p. 33). The provisional objective is to survey between 10,000 and 15,000 ha annually in each survey area. The prospects for realising these targets largely depend on the available resources and the prevailing conditions. Surveys of marine areas can only be performed under favourable weather conditions in summer. The survey programme will continue until 2014.

The information produced by VELMU will facilitate the more effective planning of nature conservation and sustainable use of natural resources in marine areas. The results of the project will also enable integrated marine and coastal area management (IMCAM) planning and environmental impact assessments in the EU. Details of valuable natural areas are also important when combating and cleaning up oil spills and chemicals at sea.

Extensive restoration within the METSO Programme

Together with the Finnish Environment Institute, Metsähallitus has been working for more than a decade to improve the ecological restoration of mire and forest habitats in nature reserves. Forest habitat restoration in particular has been systematically improved and efforts made to harmonise the planning of such work in protected areas. Monitoring has also begun with a view to evaluating ecological impacts.

Restoration work is based on plans drawn up for aggregate areas, with about 220 such plans prepared in 2000-2005. Methods and objectives applied in habitat restoration are described in greater detail in Information Box 15 (p. 148).

The METSO Programme has enabled extensive restoration measures in nature reserves. Using METSO funding between 2003 and 2006, Metsähallitus sought to restore a total of about 10,000 ha of mire and forest habitat in Southern Finland, western parts of the Province of Oulu and SW Lapland. By the end of 2005, a total of nearly 11,000 ha of forest and mire habitats within this METSO region had been restored. The total amounts to nearly 20,000 ha, when the restoration work that has been done previously outside the METSO Programme is added (see Table 27).

A total of about 4,800 ha of drained mires from Southern Finland to Central Lapland had been restored by the end of 2005 (see Fig. 53). Most of the restoration work was done in Western Finland. By 2005 Metsähallitus had used METSO funds to restore just under 6,000 ha of forest, mainly in protected areas in Southern and Central Finland. Mire or forest sites classified as Natura biotopes were the subject of 64% of this work.

The costs of habitat restoration and management (including the management of wooded traditional agricultural biotopes and herb-rich forests) in nature reserves over the period 2003-2005 are shown in Tables 28 and 29. The total costs amounted to 8.9 million euros, with an employment impact of 157 man-years, of which 40% was forest workers' share. The Ministry of the Environment provided 5.8 million euros in budget funding for this work.

Restoration work on forests and mires has also been promoted in projects supported by the EU's LIFE Nature fund. Five LIFE Nature projects led by the NHS were ongoing in 2005. The NHS was also a partner in five other LIFE Nature projects involving habitat restoration work. EU LIFE Nature funding for these projects amounted to over four million euros over their entire operating period (i.e. about one million euros per year).

Action to combat overgrowth and alien species

There are about 3,400 ha of valuable traditional agricultural biotopes, such as slash-and-burn forest, dry and wooded meadows, in protected and conservation programme areas administered by Metsähallitus. Continuous management has only been possible in part of this area. Habitat management in traditional landscapes is important for threatened species, as heritage and other cultural environments are the second most common habitat of threatened species.

The NHS is responsible for one tenth of Finland's managed traditional agricultural biotopes. Just under 1,400 ha of wooded and open heritage biotopes were managed in 2005, a substantial proportion of which are in SW Finland. Well over half of this area (750 ha) consists of wooded

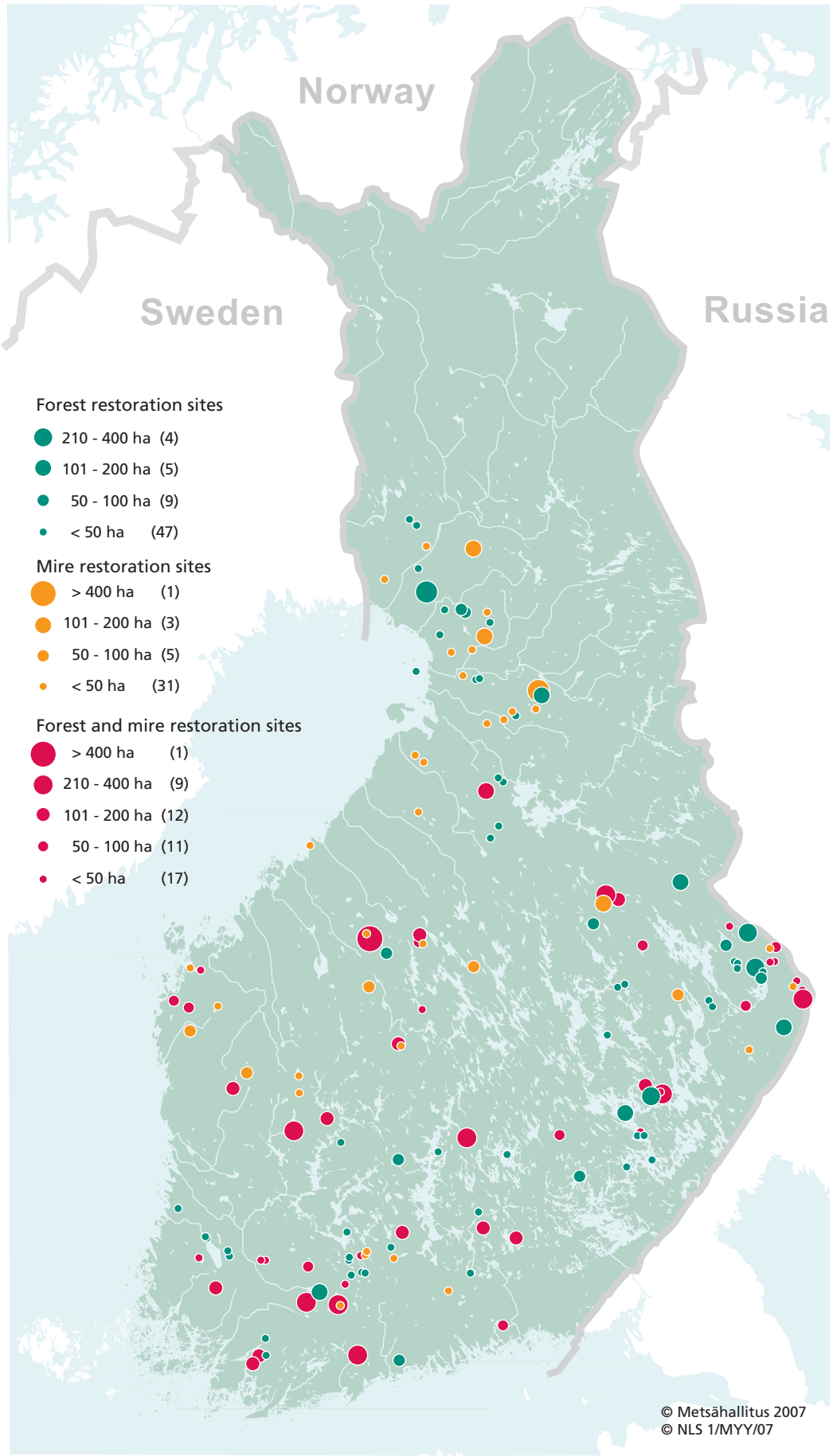


Figure 53. Habitat restoration of forests and mires in the METSO region 2003-2005. Source: Metsähallitus.

Table 27. Habitat restoration in protected areas 2003-2006. Source: Metsähallitus.

WHOLE COUNTRY							
Measure	**<2003**	**2003**	**2004**	**2005**	**Total**	**2006**	**Total**
Forest habitat restoration	1 092	1 155	2 244	2 788	7 280	2 724	10 003
making small clearings	217	511	1 043	1 457	3 228	926	4 154
increasing quantities of decaying wood	554	526	1 173	1 187	3 440	1 529	4 969
controlled burnings	321	118	28	144	611	269	880
Mire habitat restoration	7 161	1 551	2 090	1 799	12 601	1 247	13 848
Total	**8 253**	**2 706**	**4 334**	**4 587**	**19 880**	**3 971**	**23 851**
METSO REGION							
Measure		**2003**	**2004**	**2005**	**Total**	**2006**	**Total**
Forest habitat restoration		1 148	2 237	2 650	6 035	2 430	8 466
making small clearings		511	1 042	1 438	2 991	893	3 884
increasing quantities of decaying wood		519	1 167	1 094	2 780	1 346	4 126
controlled burnings		118	28	119	264	191	456
Mire habitat restoration		1 136	2 027	1 640	4 803	1 243	6 046
Total		**2 284**	**4 265**	**4 290**	**10 839**	**3 673**	**14 512**

Table 28. Expenditure on habitat restoration and management by funding source and total work contribution 2003-2005. * Natural Heritage Services expenses include planning and monitoring. ** Metsähallitus Forestry unit expenses include only Government budget funds. Source: Metsähallitus.

Year	**Ministry of the Environment funding (1 000 euros)**	**EU LIFE funding (1 000 euros)**	**Other funding (1 000 euros)**	**Total funding (1 000 euros)**	**Total man-years**
2003	1 398	279	52	1 730	28
2004	1 439	451	42	1 933	35
2005 NHS*	2 187	356	82	2 624	27
2005 Metsähallitus Forestry unit**	789	0	0	789	17
Total	**5 813**	**1 086**	**176**	**7 075**	**107**

Table 29. Expenditure on and total work contribution to habitat restoration and management by Metsähallitus Forestry unit 2004-2005. Source: Metsähallitus.

Year	**Forestry staff (1 000 euros)**	**Administrative staff (1 000 euros)**	**Other expenses (1 000 euros)**	**Total (1 000 euros)**	**Total man-years**
2003	582	37	130	749	17
2004	1 048	60	47	1 155	33
Total	**1 629**	**97**	**177**	**1 904**	**50**

Cattle grazing on the shore meadows of Laajalahti Nature Reserve. Laajalahti Bay is one of the best waterfowl habitats in the Helsinki metropolitan area. It hosts plenty of breeding birds and also provides resting grounds for thousands of migrating birds. Grazing is part of the landscape management of the area. Photo: Jari Kostet.

biotopes that are mainly managed with METSO funding.

The NHS has been managing traditional agricultural biotopes for many years and has solid expertise in this field of work. Metsähallitus is seeking to bring another 900 ha of wooded traditional agricultural biotopes under management by the year 2012. To this end, a management programme for traditional agricultural biotopes is being drafted together with other stakeholders. Metsähallitus will initially increase the management of traditional agricultural biotopes primarily with the financial support of the EU LIFE-Nature fund and METSO financing. Efforts will also be made to arrange habitat management in association with business enterprises and using agri-environmental subsidies.

In the agri-environmental subsidies scheme for 2000-2006, the conservation and management of biodiversity have been promoted by basic measures that maintain habitats and landscapes, together with special subsidy agreements on the management of traditional agricultural biotopes, landscape development, and the rearing of native Finnish livestock breeds. The NHS has concluded about 80 current management agreements with private farmers and livestock owners. Traditional agricultural biotopes are often managed by grazing indigenous cattle herds and sheep flocks.

Bird wetlands and smaller water bodies can easily become overgrown without active conservation measures. Waterfowl habitats are restored according to priorities set for areas covered by the bird wetland programme where resources permit. The achievements of this work are also maintained, and the impacts of restoration measures are monitored. Since 2000 the NHS has restored bird wetlands amounting to just over 100 ha, largely through EU LIFE projects focusing on Natura sites.

Springs, streams and rapids have also been restored to some extent. The impacts of stream restoration on trout stocks, water quality, zoobenthos and aquatic plants are monitored in association with the Lammi Biological Station of the University of Helsinki. Work at the Evo Fisheries Research Station seeks to restore waters to a near-natural state and thereby also improve the prospects for environmental research in the area.

Many alien species posing a threat to their indigenous counterparts have been introduced or have spread into the Finnish environment. These species are examined more closely in Section 7.1.3. Data on non-native plant species is collated in the course of biotope inventories of protected areas. The rugosa rose, which thrives on coastal dunes, is one example of a species that readily out-competes small and rare coastal plants. Its growths have been eradicated from shores in areas including the Eastern Gulf of Finland National Park. Mink and raccoon dogs are also examples of small predators that have proved highly damaging to ground-nesting birds, particularly in the archipelagos. In recent years Metsähallitus has worked with local naturalists and hunters to eradicate these two invaders in the Southwestern and Kvarken Archipelago regions, with favourable impacts on nesting birds in these areas (see Information Box 20).

Special attention to threatened species

The starting point for species protection is the conservation of their habitats, and especially the management of biotopes that are important to threatened species. Protecting and managing habitats is supplemented by measures to protect individual species, which focus on strictly protected species and species listed in the Habitats Directive. Information for planning these measures is obtained by species surveys and inventorying occurrences of individual species.

Metsähallitus lands – especially protected areas, but also commercially managed forests – host a significant share of occurrences of threatened organisms in Finland. The species protection work of the NHS in recent years has focused on monitoring and protecting species for which Finland has special responsibility. This includes gathering data on occurrences, protecting species occurrences in commercially managed forests, and conducting species surveys largely with project funding. NHS work also involves continual close collaboration with related working groups within the environmental administration and research institutes.

The NHS is responsible for promoting the national protection and arranging the monitoring of many threatened species. In 2005 Metsähallitus was nationally responsible for 19 species of vascular plant, four birds and two mammals. The most important of these included the golden eagle, certain other birds of prey, the white-backed woodpecker, and the Saimaa ringed seal. Considerable resources were devoted to protecting and monitoring these species, which accounted for nearly one third of the funds and more than one fifth of the labour allocated to species protection. The NHS devoted nearly 30 person-years of labour to species protection functions in 2005. Although the size of the volunteer workforce engaged in species monitoring increased in 2005, the total work done in this field remained at the level of the previous year. The contribution of volunteers is highly significant for monitoring certain species, such as the golden eagle and the Saimaa ringed seal.

In recent years Metsähallitus has made considerable efforts to compile information on occurrences of species that are threatened and otherwise in need of protection. Data on occurrences found on Metsähallitus lands is recorded in the Environmental Information System (Hertta) Threatened Species database, maintained by the environmental administration. Thousands of new occurrences are recorded in this information system each year. Over 7,000 new locations were added by the NHS in 2005, accounting for more than half of the new information added to the database. About 60% of the recorded information concerning Metsähallitus lands is less than ten years old.

As the coverage and real-time character of threatened species information improves, it has become considerably more serviceable for planning inspections of occurrences and conservation measures. Improved quality has also enabled the more effective use of information for implementing conservation measures: the NHS supplies occurrence data on threatened species to guide the Metsähallitus Forestry Unit. The Metsähallitus geographical information system now includes data on strictly protected and nationally threatened species for more than 4,500 stands within commercially managed forests.

Eradication of Mink Benefits Bird Communities of the Outer Archipelago

American mink (*Mustela vison*) were first raised in European fur farms in the 1920s. Escaped mink started breeding in the wild in Finland in the 1950s, and by 1970 they had spread throughout the country from the outer archipelago to northernmost Lapland. In Finland mink in the wild mainly eat fish, small mammals and birds. In the spring and summer as much as 60–75% of their diet consists of birds. Because it was suspected that predation by mink has a notable effect on auk species and also other bird species in the SW Archipelago, Metsähallitus started an experiment in the in the outer islands of the Archipelago National Park, aiming to eradicate mink from certain areas. The experiment was carried out over the years 1992–2002. Intensive trapping and hunting removed a total of 63 mink from the study area, which includes 60 islets, between autumn 1992 and spring 1993. In the next year, 12 more mink were removed, and no mink were found in subsequent years.

Breeding birds have been counted in the study area, three times since 1993, and also since 1994 in an nearby area surveyed for comparative purposes. The results show that mink are at least locally a factor limiting both the size of bird populations and the diversity of bird-life in the outer archipelago, where the white-tailed eagle (*Haliaeetus albicilla*) is practically the mink's only enemy. Removing mink seems to be an effective way to influence birds' nesting populations, especially in areas where bird populations have already been reduced due to predation by mink. Birds that nest in colonies, such as the common gull (*Larus canus*) and the arctic tern (*Sterna paradisaea*), particularly benefited from the removal of mink. Colonies can defend themselves effectively against bird predators that are active during the day, but they are defenceless against nocturnal predation by mammals. Destroying mink also benefited other species which nest on the ground near gull and tern colonies. Tufted duck (*Aythya fuligula*), turnstone (*Arenaria interpres*), velvet scoter (*Melanitta fusca*), mallard (*Anas platyrhynchos*), ringed plover (*Charadrius hiaticula*) and redshank (*Tringa totanus*), for example, all became more abundant. A few other species, such as shelduck (*Tadorna tadorna*), arctic skua (*Stercorarius parasiticus*) and rock pipit (*Anthus petrosus*) also clearly became more common after mink were eradicated. Auks, which had disappeared from the area in the late 1970s, returned to nest in the mid 1990s. In the context of biodiversity the most interesting outcome was the evident increase in the species diversity of the area's bird-life.

The mink and another invasive alien species, the racoon dog (*Nyctereutes procyonoides*), have also been hunted in other protected areas, including Linnansaari National Park, Siikalahti Nature Reserve and the Kvarken area. To keep mink out of such areas they need to be removed every year.

Source: Nordström, M. 2003: Introduced Predator in Baltic Sea Archipelagos: Variable Effects of Feral Mink on Bird and Small Mammal Populations. Annales Universitatis Turkuensis. Ser. AII 158. 118 p.

The American mink (*Mustela vison*) is a harmful alien invader in the Archipelago National Park. Photo: Seppo Keränen.

The Saimaa ringed seal (*Phoca hispida saimensis*) in the Linnansaari National Park. The current population of this endemic and endangered subspecies is only some 280 animals. Besides Linnansaari, other important waters for the seals lie within the Kolovesi National Park and the Pihlajavesi Natura 2000 site. Half of all the seal pups are born within protected areas, and Metsähallitus is responsible for monitoring and managing the entire population. Photo: Jouni Koskela.

Figure 54 shows the regional distribution of threatened species occurring on Metsähallitus lands as recorded in the Hertta database. At the end of 2005 the system included some 2,000 strictly protected species and nearly 12,000 occurrences of other threatened species or species listed in annexes of the Habitats Directive, making a total of some 14, 000 occurrences of threatened species. The figures for strictly protected species exclude occurrences of "flagship species" (the Saimaa ringed seal, golden eagle and white-backed woodpecker), which total well over 1,000. The regional distributions of occurrences of these and other strictly protected species are shown in Table 30. In some cases monitoring has indicated that the species are no longer found at some of their earlier known occurrences. In 2005, for example, nesting sites of the gyrfalcon (*Falco rusticolus*) in Northern Lapland were found in only one third of their previously known occurrences, and none of the former breeding dens of arctic foxes (*Alopex lagopus*) were in use. The occurrence figures shown in the table for these extreme examples actually give an idea of the amount of inspection work performed.

Special conservation and monitoring plans have been prepared for dozens of strictly protected species, serving to guide management and other measures. Management of threatened plants generally refers to the management of their habitats by clearance and by eliminating competing plant species. A wide variety of measures are involved in conserving threatened animals. These may include such measures as limiting snowmobile traffic and fishing methods that would disturb the reproduction of Saimaa ringed seals, managing old forest habitats of the white-backed woodpecker, compensating reindeer herders for damage to their livestock caused by golden eagles, eliminating competing red foxes from potential arctic fox territories, or improving conditions for the plants that nourish threatened butterflies and moths by clearing forest on sunlit slopes.

Species studies and inventories are made of non-threatened species in nature reserves to provide basic data for management plans and for

management and restoration measures. Species data are also gathered by organism group for the purpose of national and regional monitoring of biodiversity in general. Avifauna, for example, is monitored using a line transect method at several protected sites. Funds have sufficed in recent years for only a few dozen studies annually. Inventories of species have largely been externally subsidised as part of various EU projects. Owing to the lack of uniform inventory methods and data systems, the species data collected have not been available for more extensive use.

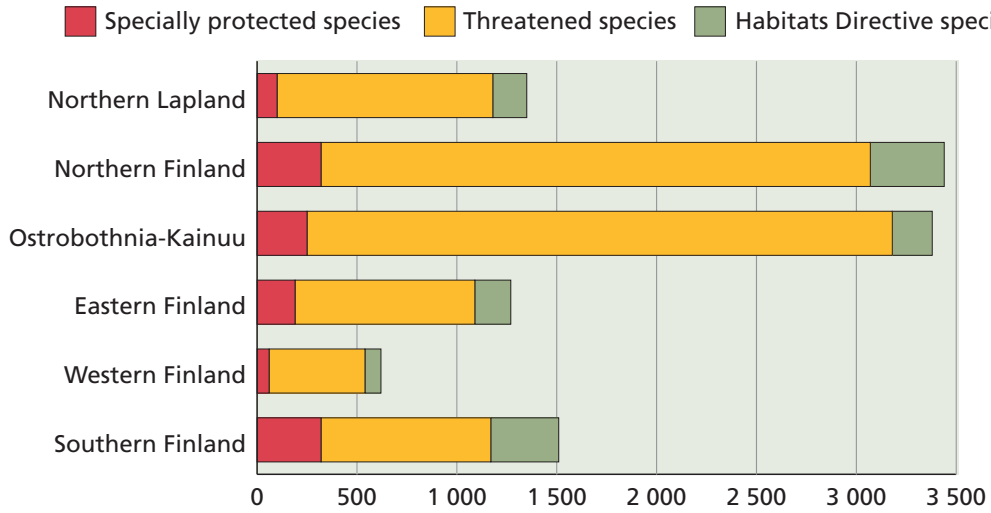


Figure 54. Numbers of threatened species found on Metsähallitus's land as categorised in the environmental administration's Hertta threatened species database. Species may belong to several classes, but are only included in the diagram once. Source: Metsähallitus.

Table 30. Registered occurrences of specially protected species for which Metsähallitus Natural Heritage Services was responsible in 2005. Some of these occurrences may no longer be occupied by the species. Different types of occurrences are not comparable, but the figures roughly reflect the monitoring efforts involved. Source: Metsähallitus

Specially protected species	Unit of occurrence	Southern Finland	Western Finland	Eastern Finland	Ostrobothnia-Kainuu	Northern Finland	Northern Lapland	Total
"Flagship" species		17	85	555	68	212	107	1 044
White-backed woodpecker	Territory	16	60	102				178
Saimaa ringed seal	Den			450				450
Golden eagle	Territory	1	25	3	68	212	107	416
Other species not registered in Hertta		38	1	1	74	351	404	869
White-tailed eagle	Territory	38			7	35	6	86
Gyr falcon	Nest	0	0	0	0	10	150	160
Peregrine falcon	Territory	0	1	1	67	206	26	301
Lesser white-fronted goose	Territory	0	0	0	0	0	0	0
Arctic fox	Den	0	0	0	0	0	201	201
Pearl mussel	River/ reach	0	0	0		100	21	121
Total of species registered in Hertta		465	117	323	512	348	119	1 884
Total NHS species		**520**	**203**	**879**	**654**	**911**	**630**	**3 797**

8.5.3 Cherishing Cultural Heritage

Since the very outset, Finland's protected area management has considered the parks' small-scale cultural landscapes and other cultural heritage. In the older parks attention was first paid to the remains of seasonal habitation, such as reindeer herding and fishing lodges. New pathways were made to follow old routes, and old postal and reindeer herding cabins transformed into open wilderness huts for hikers. The best known landscapes of the first national parks, such as the Pallas Fells and the valley of the River Oulanka, have become established national landscapes.

Metsähallitus's role increasing

The resources allocated to managing cultural heritage have always been limited. The role of Metsähallitus in cherishing cultural heritage is nevertheless growing, as it now administers most of the State-owned lands with significant cultural sites, and must find ways of conserving this national resource. A partnership agreement concluded with the National Board of Antiquities (NBA) in 2003 plays a key function in this search for solutions, as the NBA is responsible for guiding protection of national cultural environments in Finland.

The international assessment (MEE) in 2004 highlighted the need to survey the cultural values of protected areas and draft a strategy for managing them. Surveying and assessing cultural sites both in protected areas and elsewhere on Metsähallitus lands has become a priority function for conserving cultural heritage. Following its reorganisation, the NHS has made the protection of cultural heritage one of the core tasks of the nature conservation function. From 2006 on, the NHS is formulating a cultural heritage strategy over a ten-year timeframe, and planning a work programme for the medium term. The aim is to launch vital surveying operations and to pay more comprehensive attention to cultural heritage in planning and implementing protected area management. Cultural sites must also be increasingly viewed as factors that encourage tourism.

Safeguarding conditions for local cultures

Metsähallitus is responsible for safeguarding suitable conditions for the preservation of the cultures of archipelago-dwelling communities and of the indigenous Sámi people living on State-owned lands, as well as maintaining preconditions for traditional nature-based livelihoods in wilderness reserves. Local traditional livelihoods are supported by continuing to allow local people to hunt within the protected areas of Northern Finland.

NHS Southern Finland and NHS Ostrobothnia are responsible for ensuring that management planning and implementation in **marine and coastal protected areas** allow for the cultural environments of the coast and archipelago, and preserve conditions that permit islander lifestyle to continue. These principles are set out in the marine strategy approved by Metsähallitus NHS in 2001 and in the Finnish coastal strategy completed in 2005.

Metsähallitus administers four national parks in coastal areas. The Archipelago, Ekenäs Archipelago, Eastern Gulf of Finland and Perämeri national parks were established in the 1980s and early 1990s. The solutions for their management were formulated on the basis of framework plans drawn up in association with local stakeholders.

The Finnish Natura network approved in 2005 includes about 150 marine Natura sites in coastal and archipelago regions, of which at least one hundred include State-owned land. There are also a large number of conservation programme areas pending formal establishment on the coast, and an implementation programme is now being drafted for planning the management of coastal Natura areas.

The inhabitants of the archipelagos formerly lived in small self-sufficient villages, many of which have now fallen into disrepair owing to social changes. Fishing, hunting of seabirds and seals, and small-scale farming and animal husbandry have all left their mark on the environment of the archipelago national parks. There will be no future for these heritage landscapes unless such environments are continually managed and the built environment is restored and kept in continuous use.

The vitality of islander culture is maintained in protected areas in many ways, for example in the

Archipelago National Park and in the surrounding cooperation zone, which forms a UNESCO biosphere reserve. Heritage landscapes are actively managed on many islands in the national park, and old fishing lodges have been restored for use as nature information points, where visitors can learn about local nature and traditional ways-of-life. Nature trails leading to the most interesting natural and cultural sites have also been created on many islands. Boaters and hikers have been provided with mooring points and tent areas or campfire sites. Tourist services are developed and maintained in association with local businesses. These services provide income for many islanders, and nature tourism is actually having a significant impact on the economy of archipelago regions (see Information Box 27).

The culture of islanders in the Kvarken Archipelago is still thriving, and the area's building stock is in good condition. There is little State-owned land on the islands, but the Mikkelinsaaret islands near Vaasa are administered by the State, and large water areas are included in the shore and bird wetland conservation programmes. The village of Björköby in the Kvarken Archipelago is classified as a nationally valuable landscape area. Metsähallitus administers and coordinates management planning of this UNESCO world heritage site. The area's designation as a world heritage site has helped to boost local nature tourism.

Reindeer and tourists in Pallas-Yllästunturi National Park. Management planning conciliates different uses of protected areas through stakeholder participation. The park authorities maintain regular contact with reindeer herders' associations and nature tourism entrepreneurs. Photo: Martti Rikkonen.

The outermost islands of the Eastern Gulf of Finland and Perämeri national parks are no longer inhabited on a permanent basis, but there are long traditions of navigation and archipelago livelihoods in these areas. Former grazing lands are managed as heritage landscapes on larger islands, and old fishing lodges are maintained as seasonal facilities.

When operating in the **Sámi Homeland**, Lapland NHS must fulfil Metsähallitus's statutory obligation to safeguard Sámi culture. The Sámi Parliament understands culture to include all ecologically, economically and socially sustainable dimensions of development. Failure to realise any of these elements of sustainable development undermines the basis for the culture. Reindeer husbandry forms an integral part of Sámi culture, which also includes other traditional livelihoods, traditional knowledge and the Sámi language.

The management, use and conservation of natural resources are integrated in areas administered by Metsähallitus to ensure the prospects for safeguarding conditions for Sámi culture. The applicable methods are agreed during the natural resource planning process.

Nature-based livelihoods and Sámi culture are safeguarded through general, regional and function-specific statutory procedures. The most important legislation is the Reindeer Husbandry Act and the Sámi Parliament Act, both dating from the 1990s. The Non-Discrimination Act and the Sámi Language Act, which both took effect in 2004, also guide operations in the Sámi Homeland.

In a 2005 project to review the Northern Lapland natural resource plan, the Sámi members of local coordination groups assessed the efforts of Metsähallitus to safeguard conditions for natural livelihoods and Sámi culture. While the overall assessment was reasonably favourable, Metsähallitus was asked to pay greater attention to safeguarding

the interests of all Sámi people. More use should be made of Sámi traditions, and collaboration with the Sámi Parliament should be expanded. The assessment suggested that the use of the natural environment by outsiders should be more restricted to safeguard traditional livelihoods.

Efforts are made to harmonise various uses of protected areas, such as reindeer husbandry and tourism in Lapland, through collaboration with interest groups already at the management planning stage. In accordance with the principles of nature tourism, developments in recreational uses of nature and tourism take local cultures into account. This means that consideration is given to local cultural sites, when providing information and promoting experience and adventure activities, and that guidance services draw on local expertise. The aim is to expand customers' awareness and appreciation of local surroundings, livelihoods and cultures.

Particularly in Lapland, local stakeholders help to publicise aspects of local cultures. The Siida complex, which combines the Sámi Museum and the Northern Lapland Nature Centre, is one of the finest exhibition centres in the whole of the North Calotte region. Visitors to Siida can learn about nature in the north and Sámi culture. A project began in 2005 to expand the Fell Lapland Nature Centre. The enlarged premises include a new exhibition of nomadic Sámi culture designed by a local Sámi association. The new Nature and Culture Centre also accommodates the local office of the Sámi Parliament.

In recent years the NHS has produced more guidance material and website information in the Sámi language. Staff working in the Sámi homeland region is training Sámi, and most customer service points in the region can provide public services in the local language.

Cultural environments and sites identified and preserved

The NHS took charge of its first UNESCO world heritage site when the Struve Geodetic Arc was approved for the World Heritage List in 2005. Information boards and guided tours will help to make these otherwise unspectacular sites better known to the public. The Suomenlinna Fortress World Heritage Site is buffered by a Natura site managed by the NHS. Management planning for the Kvarken Archipelago region is a new kind of challenge, as in practice this planning must comply with the principles of the ecosystem approach (see Information Box 10, p. 90; and Section 8.2.1).

The rocky island of Ukonsaari in Lake Inarinjärvi and the rock carvings at the old Hauensuoli anchorage near Hanko are also candidates for the World Heritage List and popular attractions that bring customers to local tour operators. The NHS is responsible for managing these areas and is concerned to preserve their condition and value. The pressure of increasing tourist interest is jeopardising the character of Ukonsaari as a sacred site for the Sámi.

Besides nationally valuable cultural environments protected by statutes, the NHS is also responsible for several local sites. NHS Southern Finland protects and manages an English-style manor house park at Aulanko and the cultural environment of the Imperial Fishing Lodge in Langinkoski Nature Reserve. In both of these areas buildings have been restored and work has been done to prevent the immediate surroundings from becoming overgrown. Historical sites have also been restored in the Lemmenjoki and Urho Kekkonen national parks of Lapland in association with the National Board of Antiquities and the labour administration.

Sites listed under the Antiquities Act are protected by law. This act includes no specifications regarding the age of sites, and its scope is generally considered to also cover Second World War relics. Active management measures are required to conserve some sites. These sites are the responsibility of the National Board of Antiquities, and Metsähallitus complies with the Board's instructions as to their management.

The transfer of data from the NBA register of ancient relics to Metsähallitus's GIS has enabled cultural sites to be considered when planning land use in both forests and protected areas. Careful management planning ensures that the public may continue to visit significant national ancient sites without jeopardising them. The overgrowth around Finland's largest Iron Age relic, which lies in the Harola Herb-rich Forest Reserve, has been cleared with the help of local volunteers. This work has complied with the conservation requirements governing both ancient relics and herb-rich forest (see Information Box 21).

Management of Natural and Cultural Heritage in the Forests of Harola

Harola is one of the finest herb-rich forest areas in SW Finland. These deciduous forests contain many territories of the threatened flying squirrel (*Pteromys volans*), and abundant birdlife including three threatened species: lesser spotted woodpecker (*Dendrocopos minor*), blackcap (*Sylvia atricapilla*) and grey-headed woodpecker (*Picus canus*). The area also encompasses valuable spruce mires, wooded flood meadows, and shores of Lake Pyhäjärvi, which are included in the national Bird Wetland Conservation Programme.

In addition to their biodiversity, Harola's herb-rich forests contain one of the largest concentrations of Iron Age relics in Finland. An unprecedented 690 burial mounds estimated to be a couple of thousand years old have been found in the area. This makes Harola a nationally important concentration of ancient relics, and the area has been managed by the National Board of Antiquities (NBA) since the beginning of the 1990s.

This site is included in the Herb-rich Forest Conservation Programme, and was acquired by the State for conservation purposes in 1997. It also forms part of the larger Harolanlahti Natura 2000 site. A fifth of the total area of 350 hectares is managed by Metsähallitus, according to a management plan made in 2003.

Tree roots and falling trees can damage the ancient monuments of antiquity, and dense vegetation can cover them, so to preserve this valuable site and make it accessible it is necessary to clear vegetation and remove trees. Reconciling these measures with the conservation of herb-rich forests has been a challenge, but Metsähallitus's natural management planner and an archaeological expert from the NBA have together come up with a good solution.

The management plan includes three separate land use zones: a zone to be left in its natural state, a zone which is to be restored, and a zone where natural habitats are managed. The managed zone also includes grazed herb-rich woodland where former pastures are being carefully restored with due consideration given to the objectives of the management plan, made by the NBA, concerning the conservation and management of the area's ancient relics. The needs of the area's flying squirrels also have to be taken into account in planning.

Restoration work started in 2004. In the zone to be restored, flood meadows, coastal meadows and former herb-rich forests, later planted with spruce, are being restored by blocking drainage ditches, and by thinning out the growth of coniferous trees by either felling them or debarking them, and then leaving them to decay on the ground or dry out while still standing. In the managed zone, space has been created for herb-rich forest species by removing some of the coniferous trees and clearing scrub, especially from burial mounds. The spruce plantation has been cleared from a former meadow in the managed zone to recreate a pasture. The most important concentration of ancient relics is located in this pasture, so planning and work following the clear cutting have been carried out in cooperation with the NBA.

Since such work is labour-intensive and difficult to mechanise, the NBA, Metsähallitus and the local authorities organised a work camp in spring 2005 through which interested volunteers could contribute to management. By the summer, the pasture was already in good enough condition to enable a local farmer to graze his sheep there. Sheep graze selectively. Their grazing effectively manages the meadowland vegetation and these historic landscapes, creating conditions that could not be achieved using machines.

At the Harolanlahti Natura 2000 site the spring vegetation conceals hundreds of Iron Age burial cairns. Photo: Bo Storrank.

Valuable buildings demanding to maintain

The NHS administers about 100 statutorily protected buildings and 40 buildings preserved under an agreement with the National Board of Antiquities. These buildings constitute 8% of the building stock of the NHS. The last survey of the conservation values of all buildings maintained was conducted in 1994. The NHS is now assessing all its buildings, so that a comprehensive plan can be drawn up for their management. Work with the NBA began also in 2005 to assess funds required for maintaining this built heritage.

In the long run buildings can only be preserved through use, since without repair and maintenance they rapidly fall into disrepair. Metsähallitus restores valuable historic buildings and structures for educational, recreational and nature tourism functions in protected areas. However, it is not easy to find meaningful uses for all buildings, nor are funds readily available for restoration and maintenance. Various buildings associated with navigation, such as pilot stations, and fortifications dating from the Middle Ages to the Second World War, are novel and in many ways challenging elements of built heritage for Metsähallitus to maintain. It has, however, been possible to lease some sites to organisations and enterprises on terms that include maintenance requirements.

Heritage recorded and tradition kept alive

Several projects have been run in recent years to record local history and traditions. Former wilderness trekking traditions are being revived in the Urho Kekkonen National Park. In the Ruunaa area of Eastern Finland, the NHS has led a history-based nature tourism project for the River Lieksanjoki, seeking to draw on local log-floating traditions to generate new opportunities for tourism and environmental education. The nature experiences of modern Finns have been studied on the basis of visitor books in Lapland's wilderness areas and in national parks in Southern Finland. Visitor books from open wilderness huts have been preserved since the 1960s.

The heritage farms run by the NHS seek to maintain the biotopes and landscapes that have formed due to the traditional uses of nature, and to familiarise visitors with the living conditions and working methods of bygone days. These farms host various activities, such as exhibitions of traditional working methods and volunteer camps. The heritage farms attract many visitors to national parks. In 2005, the visitors to these farms, who mainly came during the Finnish summer months, accounted for one third of total number of visits to the national parks in question for the entire year. Other corresponding attractions, such as the historic viewing tower at Aulanko, can also bring significant numbers of visitors to protected areas (see Table 31).

Table 31. Total numbers of visits to selected Metsähallitus protected areas and percentages of visits attributed to respective cultural sites. Source: Metsähallitus.

Protected area	Total visits 2005	Heritage farm / site	Visits 2005	Percentage
Liesjärvi National Park	21 000	Korteniemi forest ranger's farm	8 000	38
Seitseminen National Park	40 000	Kovero crown tenant farm	11 800	30
Linnansaari National Park	28 000	Linnansaari croft	6 000	21
Aulanko Nature Reserve	380 000	Aulanko viewing tower	90 000	24

8.5.4 Opportunities and Facilities for Visitors

People of all ages and levels of fitness should be able to enjoy the finest natural sites in Finland. The NHS seeks to provide recreational and educational opportunities for customers in natural areas, and to encourage nature tourism and sustainable regional development. The services that NHS provides are safe structures and trails that encourage and guide people who travel in and enjoy nature, expert guidance in the use of these facilities, and interpretation of Finland's natural and cultural heritage.

Recreational services are developed according to demand, aiming to create a uniform, networked and recognisable service package. Through positive nature experiences and nature interpretation people are encouraged to appreciate and to conserve biodiversity. Recreational activities also promote well-being, for example by developing regional economies and livelihoods based on tourism, providing employment, and through the health effects of outdoor exercise.

Visitor counts and customer surveys as a basis for development

Demand-driven development of services is based on details of visitor preferences for areas and activities, and the focuses of interest of visitors in each area. Monitoring of the numbers of visits, combined with customer surveys and studies of impacts on the environment and on local communities, provides essential information for sustainable recreational use and nature tourism in protected areas.

Numbers of visits are both estimated and counted using various methods. The oldest of these methods involve simply keeping manual records (e.g. at visitor centres, rented cabins, organised public events, heritage farms) and referring to the visitor books at various sites (open wilderness and day-trip huts, lean-to shelters, trail stages and completion points, etc.). Other tallying methods are based on aerial surveillance (e.g. of boats in Archipelago National Park) and planned tallies organised on various routes (e.g. in Seitseminen National Park). Nowadays counts are also made both indoors (in visitor centres, nature information points, exhibitions etc.) and along routes (paths and forest roads) using various automatic equipment. Most counts are made by Metsähallitus staff, unless they form part of wider research studies conducted by other organisations, or have been outsourced to surveillance or management sub-contractors. The results of counts are entered into a national database which can be used to produce various summary reports.

A total of 185 visitor counters were installed at outdoor locations in 2005, of which 160 were in use. About one third of these counters operate all year round, while the remainder are mainly used in summer. The counters were installed in about 80 areas. A wide range of counters are generally used at national parks, where they may be installed at various locations. Some 30-45 new counters are installed each year.

Counts were also made at 65 customer service points in 2005. Nearly all visitor centres and customer service points, and many nature information cabins now also have electronic or mechanical counters. Manual counting is also done at most sites, either to estimate or check visitor figures.

More than 40 standardised visitor surveys and over 20 customer surveys were conducted in protected areas by the end of 2005. The preparation of management plans for national parks and hiking areas usually requires surveys of visitors or customers. Customer surveys are repeated every five years at parks located in tourism areas. These surveys help to provide information on visitors, on the reasons for visits and their duration, on the activities of visitors and on their expenditure. Enterprise surveys correspondingly seek to chart entrepreneurs operating in the area and their needs relating to the further development of park services. These surveys also help to provide information on the direct and indirect local impact of tourism on employment and the local economy. Enterprise surveys have also been standardised and the results are recorded in a common database.

Infrastructure developed with respect for values

Plans for the use of nature reserves favour activities that can be enjoyed in harmony with nature, such as hiking, cross-country skiing, rowing, canoeing and camping. Trails, campfire sites, mooring points and natural harbours, tent areas and car parks are constructed and maintained in protected areas for these purposes, as well as for nature interpretation and educational use.

Metsähallitus endeavours to construct durable buildings and structures which have low overall life cycle costs and are generally suited to the surroundings and landscape. Constructions should be correctly dimensioned for their use, versatile, and also favour the use of renewable energy sources. Old buildings are repaired and used in ways that respect their cultural value.

Nature reserves are developed with varying standards of facilities as their character dictates. Their minimum and maximum objectives are determined in the management plan. The aim is to provide service facilities and encourage their use in parts of the protected area where such activity causes the least danger to natural values. No service facilities at all are constructed at most mire reserves and small nature reserves.

All facilities and services are located and concentrated according to zoning principles to ensure that visitors do not disturb the most valuable ecological features of protected areas. On the one hand, zoning seeks to create sufficiently large undisturbed areas and minimise problems (such as erosion), while on the other hand, give nature-lovers opportunities to explore areas and enjoy great experiences in natural surroundings.

Metsähallitus constructs hiking facilities to meet the needs of a wide variety of users. For example sites offering disabled access include wide duckboard trails, suitable toilets and other facilities that allow visitors in wheelchairs to enjoy nature. Such sites also serve families with small children. About thirty national parks, hiking areas and other destinations provide facilities for disabled visitors. There is also disabled access to most visitor centres.

Investment in the renovation and construction of facilities totalled 4.5 million euros in 2005. Construction work was done on a total of 180 sites, amounting to 35 man-years. Most construction work was done in Ostrobothnia and Lapland, where funding was available for such work through unemployment relief schemes.

Recreational sites maintained using best practices

Metsähallitus's nature reserves, hiking areas, wilderness reserves and recreational areas include a large number of trails, accommodation and other facilities that require regular servicing (see Table 32). This continuous maintenance work includes waste management and the provision of firewood for campfire sites, huts and cabins. There are also more than 1,800 waste management points (dry toilets and waste collection) and over 1,400 firewood supply points, which consume nearly 10,000 m^3 of wood annually.

A fishing pier with disabled access in the Hossa Hiking Area. Protected area facilities are built to help all kinds of visitors enjoy outdoor activities, including families with small children, the elderly and the disabled. Photo: Matti Vainio.

Table 32. Facilities in protected and recreational areas maintained by the Metsähallitus Natural Heritage Services. Source: Metsähallitus.

Maintained facilities	Units
Nature trails	450 km
Hiking trails	4 850 km
Boating and canoeing routes	780 km
Winter and skiing trails	1 200 km
Snowmobile routes	4 250 km
Rentable cabins	150
Open wilderness and day-trip huts	300
Reservable wilderness huts	60
Firewood stocks*	1 400
Waste management and recycling points	280
Dry toilets	1 600

* incl. firewood stocks at 1,270 campfire sites and 880 shelters of various types

The aim is to reduce the harm caused by litter and waste transportation by encouraging hikers to act responsibly and leave no traces of their visit behind. In recent years Metsähallitus has in general only provided solid waste sorting points at car parks or other entry and exit sites, where visitors sort and dispose of their litter. The numbers of containers for mixed waste provided at resting places have been reduced, while at the same time more composting facilities and more advice on waste management have been provided. These policies have led to substantial reductions in the volumes of solid waste generated per visit between 2001 and 2005.

Dry compost toilet at Pihlajavesi Natura 2000 site. The Metsähallitus NHS maintains 1,600 dry toilets in protected areas, applying modern knowledge to improve traditional composting methods. Photo: Pasi Ikonen.

The NHS has a permanent field staff of about 120 employees and also employs a large number of temporary seasonal workers. In 2005 the maintenance of facilities accounted for 15% of all the work done by the NHS. In addition to such work, on-site staff are also involved in habitat management of protected areas and on-site customer service, including interpretation and supervisory duties (see Information Box 22).

Virtual paths to parks

The Outdoors.fi website (Luontoon.fi in Finnish) for hikers and nature tourists presents all of the nature tourism and hiking destinations maintained by Metsähallitus at public expense, including nature reserves with services for customers, national hiking areas and other recreational areas. The website is available in Finnish, Swedish, English and Northern Sámi.

In summer 2006, this 6,500-page website covered about 130 destinations managed by Metsähallitus in Finnish (and over 70 in English), hundreds of open wilderness huts, reservable and rentable cabins, and about 50 customer service points. It is a major challenge to keep the website up to date. Work on this national website also calls for close cooperation with staff working locally in the field.

A *Hiking ABC* section was opened on the Luontoon.fi website in 2005 following collaboration with the hiking association Suomen Latu and the Guides and Scouts of Finland. This new section provides basic details ranging from planning an outing to instructions for lighting campfires and how to find your way in the wilderness. There is also a special section on the website providing information for the disabled and others who appreciate unimpeded access to nature. This section gives details of the type and location of special services provided for visitors in State-owned lands. Internet users who are interested in cultural heritage and history can also find special materials on the website, which has been continually expanded to meet the needs of various target groups.

Fieldwork on Fells, in Forests and at Sea

Most of the Metsähallitus NHS's work in protected areas involves different kinds of fieldwork: maintaining and building facilities, conducting inventories of natural features, restoring and managing natural habitats, supervisory work, monitoring the state of natural features and processes, and providing guidance and customer services. Today, a couple of hundred permanent staff do such fieldwork, most of them in Ostrobothnia and Lapland. The work contribution of temporary staff is also notable. At peak times in the summer and tourist seasons hundreds of temporary staff work in customer service points and protected areas, including builders employed through job creation schemes. Volunteers also make valuable contributions, for instance in species monitoring and through voluntary work camps.

Basic fieldwork includes taking care of firewood, wastes, and wilderness huts, maintaining trails and facilities, and collecting information for data systems. Sometimes repair work, renovation and new construction are needed, and even demolition work where structures in a bad condition need to be dismantled. Fieldwork also includes guiding and instructing visitors, collecting feedback, and supplying the staff of visitor centres and customer service points with information from the field, so that they can in turn advise visitors.

Fieldworkers need to be continuously aware of events, circumstances and conditions in the areas where they work. They have a very important role in collecting data on natural features, in the monitoring and conservation of species, and in the restoration and management of habitats. They have to be able to recognise the species found in their area, to understand monitoring and management methods, and to be able to cooperate with conservation biologists and planners.

Underwater habitat inventories also involve collecting specimens. Photo: Metsähallitus.

Guides and other fieldworkers are constantly involved in environmental education and encouraging enlightened attitudes. Such work can be done wearing a Metsähallitus uniform out in the field, or sometimes even dressed up as a hare for a visit to a school camp. Natural landscapes, and the activities that people enjoy in them, contribute to an increased awareness of and respect for the natural and cultural features around us.

Sometimes fieldworkers have to step in when visitors behave irresponsibly. Roadsides around protected areas may sometimes be used as dumping sites, people may use national parks as dog parks or drive off-road vehicles without a permit. Threatened species, such as eagles or Saimaa ringed seals, are disturbed either deliberately or unintentionally. Occasionally illegal bear killings or thefts from visitor centres have to be investigated. The NHS cooperates closely with the police and the Border Guard.

Building duckboards along a trail featuring traditional meadow culture in the Arctic Circle Hiking Area. Photo: Juha Paso.

Unified visitor services maintained through cooperation

Metsähallitus visitor centres, customer service points and other guidance points provide information about nature, protected areas and local hiking opportunities. There were 26 visitor centres and customer service points at the end of 2005.

Customer service points are established and maintained according to demand and to standards of quality and service. A standardised appearance and common operating procedures, good staff training and efficient networking seek to create a chain-like set of operations, with best practices applied throughout. Customer surveys and research, for example, are systematically and uniformly conducted at all locations.

"The Cry of the Crane". The nature exhibition at the Häme Visitor Centre opened in 2000. Visitors can experience the rich life of the diverse bog types of Southern Finland both indoors through multimedia, and outdoors in the nearby Torronsuo National Park. Photo: Jari Kostet.

Visitor centres are developed and renewed continuously. Häme Visitor Centre in Tammela was completed in 2000, specialising in mire environments and serving the Liesjärvi and Torronsuo national parks. Metsähallitus took over the Pallastunturi and Pyhätunturi visitor centres from the Finnish Forest Research Institute in 2002. Also in 2002 Maretarium (which features native Finnish fish species in a saltwater aquarium), opened in Kotka. Metsähallitus collaborates with Maretarium to provide guided tours of Eastern Gulf of Finland National Park. Terranova – Kvarken Archipelago Nature Centre was opened in the city of Vaasa. Syöte Visitor Centre opened in Ostrobothnia in 2003, and the Petola Visitor Centre in northwest Finland in 2005.

In 2005, the NHS also worked towards the establishment of five entirely new visitor centres in different parts of the country. Planning of a "flag-ship" visitor centre for Nuuksio National Park is under way in association with the city authorities of Helsinki, Espoo and Vantaa, and the Solvalla Sports Institute. The aim is to create a centre that will attract international interest in the Finnish nature and nature tourism. This centre, which will open to the public in 2010, is a sizeable investment and enjoys a separate budget allocation.

Partnership arrangements have been sought in order to reduce the maintenance costs of visitor centres and other customer service points. About one third of the service points are managed under partnership arrangements (see Table 33). Upkeep of Häme Visitor Centre building, for example, is entirely paid for by the surrounding municipalities. Some visitor centres and customer service points are based in buildings owned by parties other than the NHS. For example Terranova in Vaasa operates as part of the Museum of Ostrobothnia.

Nearly 800,000 visits were made to visitor centres and other customer service points in 2005. Both total numbers of visits and the numbers of visits per service point have risen since 2000 (see Figure 55 and Table 34). The total use of labour and productivity levels have also increased.

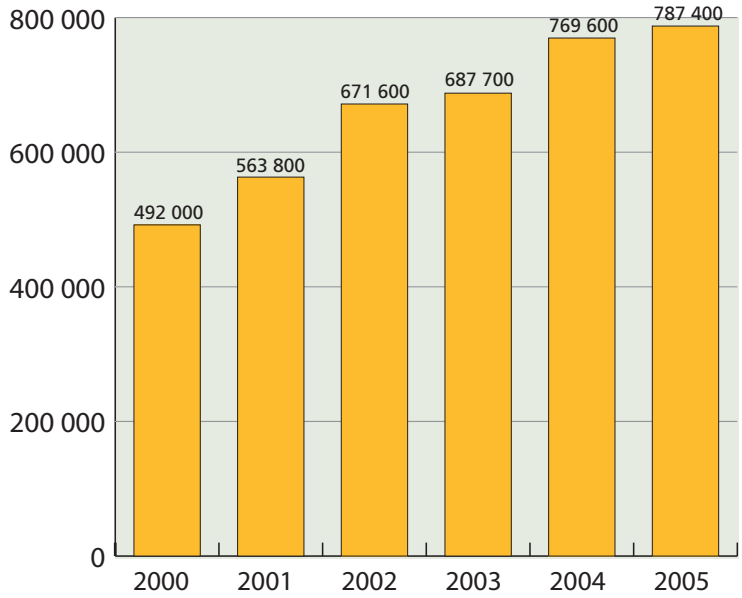


Figure 55. Total annual visits to customer service points 2000-2005. Source: Metsähallitus.

Table 33. Customer service facilities maintained entirely or jointly by Natural Heritage Services 2005. Source: Metsähallitus.

	Run by the NHS	Jointly run	Total
Visitor centres	10	6	16
Nature information points	5	1	6
Other customer service points	3	1	4
Total	**18**	**8**	**26**
% of total	69	31	100

Table 34. Customer service points, number of visits and changes from previous years, work contributions in customer service and visits per man-year 2000-2005. Source: Metsähallitus.

	2000	2001	2002	2003	2004	2005
Customer service points	20	21	22	23	26	26
Visits, total	492 000	563 800	671 600	687 700	769 600	787 400
Average visits per service point	24 600	26 848	30 527	29 900	29 600	30 285
Change in numbers of visits		71 800	107 800	16 100	81 900	17 800
Change as %		15%	19%	2%	12%	2%
Customer service man-years	54.4	52.1	57.8	66.2	65.4	71
Visits per man-year	9 052	10 821	11 619	10 388	11 771	11 166

Interpretation and environmental education

Nature interpretation services are more detailed than basic advice, and are provided for a fee both at customer service points and in the field. Over 2,600 groups averaging 20 persons and totalling nearly 60,500 customers were guided in 2005. Most nature interpretation is arranged at visitor centres (see Figure 56).

Environmental education is a high priority for Metsähallitus. Efforts have been made to develop nature interpretation in association with educational authorities and early learning specialists. Some visitor centres have adopted regular collaboration formats, for example a certain school grade may visit the area once a year, while annual theme events are arranged for nursery schools. Future visitor centres may serve as important providers of environmental education working in partnership with other local stakeholders.

Guidance materials also aim to promote environmental awareness and an appreciation of protected areas among adults. Guidance and interpretation aims to encourage people to take up hobbies related to nature, and to provide more detailed information to people who already have such interests and knowledge. Customer events at visitor centres also cultivate the approval and appreciation of local residents for protected areas and their management.

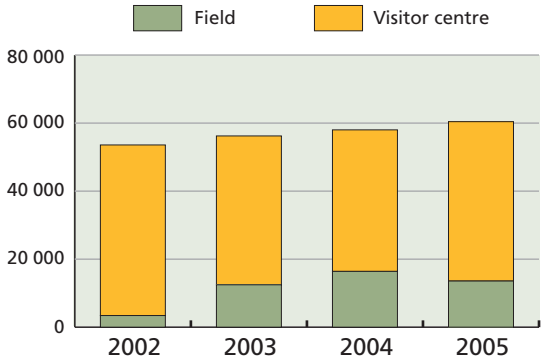


Figure 56. Total annual numbers of visitors taking part in field and visitor centre interpretation groups 2000-2005. Source: Metsähallitus.

Investing in attractive tourist areas

The national parks and other popular nature tourism sites managed by the NHS are crucial attractions in tourist regions, especially in the summer months. Development measures are allocated and prioritised according to demand and expected impacts on employment and the local economy. Visitor numbers and the main variables that affect them both inside and outside the parks themselves are monitored continually.

Nature tourism plans specifying the nature tourism development objectives are drawn up to support management plans for important tourist areas. Nature tourism plans are compiled in association with local tourism stakeholders, and also allow for broader objectives for the area, such as regional tourism strategies.

One general aim in developing nature tourism is to achieve closer collaboration between tourist centres operating in the vicinity of nature tourist attractions, such as national parks. In the future, the NHS will try to be more actively involved in the work of local tourism associations. New forms of cooperation have also been launched with national stakeholders, such as the Finnish Tourist Board (MEK). A joint project has sought to incorporate the sustainable nature tourism principles of Metsähallitus into the quality programme that MEK offers to tourist centres. The new quality programme will enable tourist centres to present environmental awareness as a competitive advantage of an area. Tourist centres located near national parks and other nature tourism attractions are eligible for inclusion in the programme.

Partnerships with Organisations and Enterprises

It is vital to work with local tourism businesses when seeking to develop sustainable nature tourism in protected areas. Effective cooperation supports both conservation objectives for the area and the work of local enterprises. Tourist businesses can benefit from the facilities established in protected areas by concluding right-of-use or partnership agreements with Metsähallitus. As the name suggests, partnership agreements incorporate both rights of use and elements of collaboration. They may also be concluded without

Learning about habitat restoration in Nuuksio National Park. Easy access from the Helsinki area makes Nuuksio a favourite studying site for school groups and recreational destination for conference participants. One of the park's nature trails features habitat restoration, while several other well-marked circular trails also offer plenty to see and learn. Photo: Antti Below.

rights of use, in the case of businesses that merely rely on protected areas without actually engaging in operations within these areas. Businesses of this kind include entrepreneurs offering accommodation services in the vicinity of protected areas.

Partnership agreements will extend certain duties and benefits to both tourist enterprises and Metsähallitus. For example, firms will agree to comply with the principles of sustainable nature tourism and to submit operating reports to Metsähallitus. In return the NHS must arrange collaboration meetings and training events pertaining to protected areas, and also provide partners with marketing channels through websites and visitor centres.

At the end of 2005, the NHS had concluded a total of 133 current agreements with tourist enterprises, comprising 36 agreements on rights of use and 97 partnership agreements. Half of these agreements were made in the Ostrobothnia region and a third were concluded in Southern Finland. Permits were also issued instead of agreements for business operations concerning wilderness reserves or of short-term character. The aim is always to conclude partnership agreements wherever business operations are ongoing and conditions are otherwise favourable for collaboration. Such agreements are the most effective way of guiding operations in protected areas in sustainable directions.

8.5.5 Exploiting Game and Fish Stocks Sustainably

The NHS seeks to manage public services related to hunting, fishing and off-road traffic in a customer-oriented and environmentally sustainable manner. Arrangements and guidance for hunting and fishing safeguard nature conservation objectives in protected areas, while preserving traditional Finnish hunting and fishing pursuits.

Stock monitoring and management

Stocks of game birds and small game mammals are mainly estimated in Finland through biannual surveys of *game triangles*. There are about 1,500 such survey triangles around the country, with several volunteers, who are mainly hunters, involved in the surveying of each triangle. This arrangement is virtually unique to Finland.

About 1,600 voluntary large carnivore contact people gather basic monitoring data on the numbers of large predators in Finland. Waterfowl stock estimates are similarly compiled with the aid of volunteers. About 100,000 elk hunters are responsible for gathering information on elk stocks.

The staff of Metsähallitus plays a notable role in producing observation data and organising game triangle surveys, especially in Northern Finland, where Metsähallitus manages very sizeable protected areas. A total of 109 game triangles have been established in protected areas of various kinds in Lapland (54), Ostrobothnia (26) and Southern Finland (19).

The Finnish Game and Fisheries Research Institute (RKTL) analyses game monitoring data to provide useful information for the public authorities. Metsähallitus uses the results of game triangle surveys when assessing and planning sustainable hunting levels for game birds in areas where hunting permits are sold. This is done using a specially customised game stock planning system that also incorporates catch data submitted by hunters. This data forms the basis for determining area hunting quotas. Annual sales of small game permits are allowed within these quotas. The computations of the planning system are based on all game triangle survey data regardless of whether triangles lie within protected areas. It is not considered sensible to monitor and estimate the sizes of game stocks separately in protected areas.

In Northern Finland – where local residents enjoy a statutory right to hunt on State-owned lands within their own municipality and even within most national parks – RKTL sample surveys of local hunters have been used in recent years in addition to catch monitoring to secure data on hunting pressures.

About 7,500 hunting catch notifications were submitted for all State-owned lands in 2005. Based on these, the estimated overall mortality rate due to hunting was about 3%, which is well within sustainable limits.

Managing game habitats and allowing for them in forestry has been a fundamental element of managing game stocks on State-owned lands. Even though forestry measures focus on commercially managed forests, these operations also affect species living in protected areas. Although no special management measures are devoted to game habitats in national parks, strict nature reserves, old-growth forest or mire reserves, the mire restoration work, controlled burning and small-scale clearance work carried out in parks also improves the habitats of game species. Wetland management planning also allows for game stocks.

The monitoring of fishing waters is changing rapidly. The NHS is working on a GIS-based monitoring system for fishing waters similar to the game monitoring system. This would enable, for each river basin district, the monitoring of management measures, fishing quotas, permit sales, catches and their structure, and the development of the customer base.

The state of fish stocks can be studied through fishing trials. For example, smolt production from trout stocks in Urho Kekkonen National Park has been studied by electrofishing. The management principle for fishing waters in protected areas is to endeavour to maintain natural fish stocks. Only indigenous Finnish species are used for stocking. Metsähallitus is working with RKTL fisheries researchers with a view to determining the most valuable indigenous stocks, to enable their spawning grounds to be wholly protected from fishing through decisions made by regional employment and economic development centres. Little genetic research on protected area fish stocks has been conducted as yet.

It is not easy to estimate the allocation of recreational fishing to protected areas and its impact on fish stocks. While the boundaries of fishing areas are drawn with no special reference to protected areas, the management plans for fishing areas allow for conservation regulations. Management plans for protected areas express views on local fishing arrangements and incorporate where necessary separate management plans for fishing waters, which also assess fishing pressures and their impacts on fish stocks.

Exploitation controlled through permits and contracts

The public regulation of hunting and fishing permits and off-road traffic has improved the prospects for controlling the pressures that these

activities impose on protected areas. Public attitudes, particularly those of local residents, towards these activities have also improved.

The NHS Game and Fisheries Manager confirms area quotas for hunting and fishing, and may delegate the issuing of permits to an employee of Metsähallitus or to an outside organisation. A total of nearly 64,000 fishing permits and over 38,000 hunting permits were issued for State-owned lands in 2005. There were 116 areas designated for hunting, encompassing 7,240,000 ha of land and 171,000 ha of water. About 2,000 hunting area leases and 1,100 fishing area leases were valid at the end of 2005. Some 1,700 off-road traffic licences were issued in 2005. No further details are available of permit, licence or lease allocations in protected areas.

Supervising complience with regulations

Metsähallitus's law enforcement functions seek to prevent unlawful and unlicensed action on State-owned lands and to coordinate and train voluntary rangers for this purpose. Metsähallitus has nine full-time police-trained game and fisheries wardens responsible for supervisory duties in association with the police and border guard authorities. These game and fisheries wardens have certain police powers specified in the Act on Metsähallitus Game and Fisheries Supervision.

Regular official cooperation with the police and border guard authorities is essential for supervisory work. This cooperation may include, for example, joint planning of supervisory functions, joint supervision patrols and information exchange. Other Metsähallitus staff and rangers from game management associations are also involved in this work. Voluntary supervising rangers are either police officers, border guards, customs officials or Metsähallitus staff. Game and fisheries wardens also train park district workers in supervisory duties, which are largely delegated to the staff of protected areas. Game and fisheries wardens or the police are contacted when offences are committed in an area.

Law enforcement functions focus on ensuring public compliance with legislation regulating the use of the natural environment. Supervision oversees hunting, fishing, off-road traffic, water traffic, forestry, compliance with waste legislation, and construction on State-owned lands. This involves checking that citizens have proper licences, for instance. Game and fisheries wardens also take part in nature conservation work, for example by monitoring the nesting of birds of prey and large carnivore populations in Northern and Eastern Finland.

Supervision in nature reserves particularly focuses on ensuring compliance with restrictions prescribed to protect various species. These restrictions concern such matters as movements or hunting, fishing and trapping equipment during breeding seasons. One of the most important targets in recent years has been fishing restrictions designed to protect Saimaa ringed seals. About a quarter of the fishing equipment inspected has infringed the restrictions.

Supervision has also increasingly focused on marine areas, with special attention paid to seal reserves, boating, waterfowl hunting and dogs allowed off lead. Special monitoring has focused on fishing licences, compliance with hunting quotas and proper boating equipment.

Between 5,500 and 11,000 inspections were performed annually between 2000 and 2005 (see Table 35). About 8% of these inspections revealed infractions. Problems arise, for example, with hunters shooting from moving on-road vehicles, killing elk without licence or poaching large predators. No breakdown of inspections or infractions is available for protected areas.

Table 35. The Metsähallitus Natural Heritage Services game and fisheries supervision 2000-2005. Source: Metsähallitus.

	2000	2001	2002	2003	2004	2005
Customer inspections	5 686	11 014	10 193	8 627	8 231	7 704
Recorded offences	408	665	680	608	618	510
Offences as % of inspections	7.1	7.9	8.6	8.4	8.8	7.9

8.5.6 International Activities

Nearly 70 employees of the Natural Heritage Services worked in international operations during 2005, amounting to a total of 14 man-years. The NHS cooperates with all neighbouring countries both bilaterally and through broader international arrangements in the Arctic, Nordic and Baltic regions, as well as through European and global organisations.

Regional and bilateral cooperation

The long common border between Finland and the Russian Federation has enabled wide-ranging cooperation between protected areas along the border. This cooperation aims to create a chain of transboundary twinned parks along the Finnish-Russian border all the way from the Gulf of Finland to the River Paatsjoki in Inari. This Fennoscandian Green Belt of protected areas would be a unique contribution to nature conservation in Europe. Parks on both sides of Finland's national borders are shown in Figure 57.

There are currently four pairs of twinned parks along Finland's eastern border, and a further four pairs are projected. The internationally acclaimed collaboration between the twinned national parks of Oulanka and Paanajärvi is described in Information Box 23. The Friendship Park in Finland and Kostomuksha Strict Nature Reserve in Russia together comprise the Friendship Nature Reserve, which engages in extensive collaboration not only in research, but also in customer service, environmental education and common cultural issues. The third park pair comprises Urho Kekkonen National Park and Russia's Lapland Strict Nature Reserve. Trilateral collaboration has been established between Vätsäri Wilderness Reserve in Finland, Norway's Ovre Pasvik National Park, and Pasvik Strict Nature Reserve in Russia. The aim of the Kalevala Park Interreg project completed in 2005, was to promote the establishment of Kalevala Nature Reserve in Finland and secure official status for Kalevala National Park in Russia. Although this project achieved its immediate goals, final confirmation of the protected area has been delayed on the Finnish side. Russia confirmed the establishment of its own Kalevala National Park at the end of 2006.

Finland and Russia have already been working together for more than a decade to protect the Ladoga ringed seal (*Phoca hispida ladogensis*). Cooperation has also focused on several other species, such as large birds of prey, the arctic fox, the lesser white-fronted goose and the freshwater pearl mussel (*Margaritifera margarifera*) in more northerly regions, as well as the white-backed woodpecker, the Eurasian flying squirrel (*Pteromys volans*) and other species in the Leningrad Oblast.

Finland concluded an environmental cooperation treaty with the USSR in 1985. This treaty has formed the basis for a Finnish-Russian nature conservation working group that promotes the establishment of protected areas and the conservation of threatened species in Finland and NW Russia, and works to improve collaboration between nature reserves in the two countries. One of the chairpersons of this taskforce comes from the NHS.

Playing an active role in international organisations

Metsähallitus has been involved in a joint Finnish-Estonian working group on nature conservation since 1998. The NHS has participated in work to improve nature interpretation and customer service at Estonian nature reserves and visitor centres, as well as the development of management and habitat restoration methods for protected areas.

The Kvarken Archipelago World Heritage Site is an extension of Sweden's High Coast World Heritage Site, and was prepared in close collaboration with Swedish partners. In general there is a long history of collaboration between Finland and Sweden on nature conservation in this region.

The most important operating forum for Baltic Sea collaboration is the Baltic Marine Environment Protection Commission (HELCOM), whose recommendations have been implemented by Metsähallitus, for example through inventories of subaquatic biotopes. An NHS representative is chairing the HELCOM HABITAT (Nature Protection and Biodiversity) Group until the end of 2007. Several projects financed by the EU have boosted management planning for marine and coastal areas of the Baltic Sea in recent years.

Collaboration in the North Calotte Region has been actively pursued with Sweden, Norway and Russia. The International Contact Forum on Habitat Conservation in the Barents Region (known as the Habitat Contact Forum or HCF) coordinates nature conservation collaboration between the Nordic countries and Russia in the Barents Region. The NHS has been involved in the operations of this protected area network. More extensive collaboration takes place in such contexts as the Arctic Council, which also includes the USA and Canada. The CAFF (Conservation of Arctic Flora and Fauna) working group of the Arctic Council focuses on nature conservation in the circumpolar region. The most important project of CAFF is implementing the polar biodiversity monitoring programme. The main aim of this programme is to investigate how flora and fauna and their habitats respond to climate change.

The Director of the NHS is a member of the board of the EUROPARC Federation, the umbrella organisation of Europe's protected areas, and NHS representatives have participated in many of EUROPARC's working groups. The NHS took the initiative in establishing the

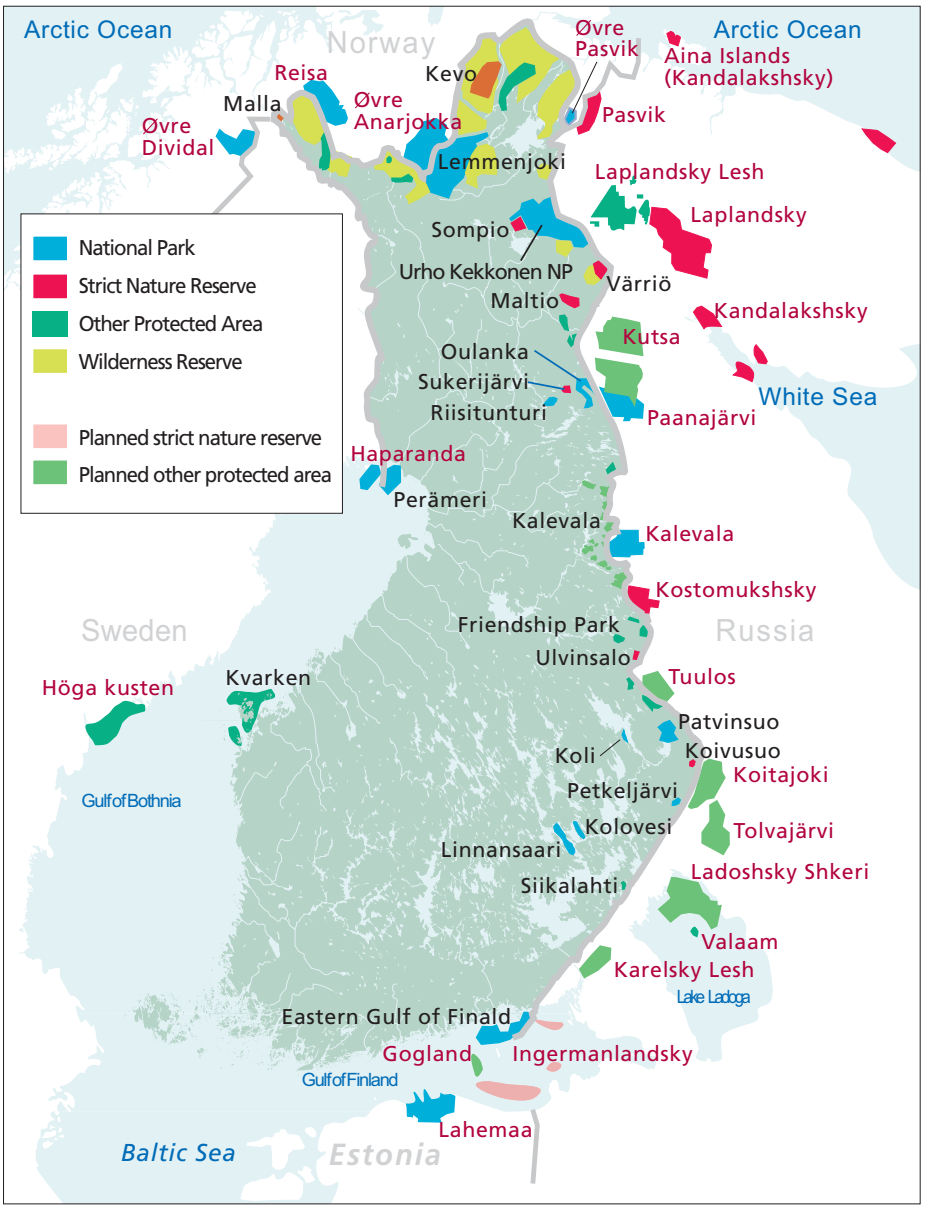


Figure 57. Transboundary cooperation between Finnish protected areas and areas in neighbouring countries. Source: Metsähallitus.

The Fennoscandian Green Belt – a Functioning Network of Protected Areas along the Finnish-Russian Border

The Green Belt of Fennoscandia is an important part of Finnish-Russian nature conservation co-operation. This extensive network of undisturbed natural habitats and protected areas stretches through the border regions all the way from the Gulf of Finland to the Arctic Ocean.
The idea came about in the 1990s, when it was found that the border regions are valuable to the Northern Europe in protecting the ecosystems and species of boreal forests. Later the Green Belt became part of the development programme for sustainable forestry and biodiversity conservation in Northwest Russia. Metsähallitus's network of twinned parks is an important tool for the practical realisation of the Green Belt.

Oulanka–Paanajärvi – flagship of twinned park cooperation

Oulanka National Park (established in 1956 in NE Finland), and Paanajärvi National Park (established in 1992 in Russian Karelia) together form a model for transboundary park twinning. Milestones in the cooperation between the two parks include:

- 1993: the signing of the cooperation agreement immediately after the establishment of Paanajärvi National Park
- 1997–1998 and 2002–2004: Interreg projects implemented to develop cooperation and conditions for nature tourism in both parks
- 1999–2001: Paanajärvi involved in a major Tacis project run by Metsähallitus to develop the parks of Russian Karelia
- 2002–2004: both parks involved in the Tacis CBC project "From Ladoga to the Polar Sea via the Fennoscandian Green Belt"
- 2005: renewal of the cooperation agreement, formulating a shared vision for 2015
- 2005–2007: Neighbourhood programme "Oulanka–Paanajärvi – wilderness, experiences and well-being"

In addition to project funding, everyday cooperation work has been supported through regional cooperation funds from the Finnish Ministry of the Environment. Cooperation has included exchanges of know-how between staff, training, surveys of natural features and cultural heritage, environmental education, and management planning. Promoting sustainable nature tourism, collaborating with local enterprises, and producing publicity materials have been important parts of the work. The visitor centre of Paanajärvi National Park was completed using Tacit funding in 2002.

Oulanka National Park is known for its many rare plants. The park's emblem is the fairy slipper (*Calypso bulbosa*), a threatened orchid for which Metsähallitus has special responsibility. Paanajärvi National Park's emblem is Nuorunen Fell, the highest point in Russian Karelia.

International recognition

The twinned parks' cooperation has gained extensive international recognition. Oulanka National Park was granted certification by the PAN Parks Foundation in 2002. Three years later certification was also given to Paanajärvi National Park and to nine enterprises cooperating with Oulanka. PAN Parks is a certification system established by the WWF. The EUROPARC Federation has created its own criteria "Transboundary Parks – Following Nature's Design" to accredit exemplary transboundary cooperation between parks. The Oulanka and Paanajärvi National Parks received this certification in 2005.

The River Kitkajoki in Oulanka National Park. Oulanka's flora and fauna include a unique combination of northern, southern and eastern elements. The park's eastern boundary coincides with both the national border, and the western boundary of Russia's Paanajärvi National Park. Photo: Paavo Hamunen.

Nordic-Baltic Section of EUROPARC. It also led and coordinated the early years of the section's operations in 2003-2005, before the Presidency passed to Latvia at the beginning of 2006.

Another important cooperation forum has been the World Conservation Union (IUCN) and particularly its World Commission on Protected Areas (WCPA). The Director of the NHS has also taken part in the work of the World Protected Area Leadership Forum (WPALF) to enhance cooperation between the managements of protected area authorities. The WPALF and the WCPA steering group met in Finland in June 2004 (see Photograph on Preface page). In 2006 the NHS joined EUROSITE, an organisation which has focused on management of Natura 2000 areas.

8.5.7 Substantial Achievements with EU-Funded Projects

Domestic and international cooperation make up a substantial element of the work of the NHS. Regional cooperation has been highly active, for example due to the impact of projects financed by the EU. By the end of the 1990s, the proportion of financing from sources outside the State budget had increased to well over one fifth, with 6-8% derived from EU funds. While annual EU project financing remained fairly stable at an average of 1.8 million euros between 2001 and 2005, this has accounted for a slightly decreasing proportion of total financing of about 5% in recent years.

Most EU finance has been secured through the LIFE Nature fund. Just under a third of EU financing comes from structural fund programmes (European Regional Development Fund ERDF), which are divided into Objective programmes and Community Initiative programmes. The Community Initiative programme projects have been Interreg III A or III B projects.

Projects receiving funding from the EU at the end of 2005, that the NHS was involved in, are listed in Appendix 19.

Many projects and partners

In recent years EU projects have been quite evenly distributed throughout Finland, but in 2005 use of EU funds by NHS Southern Finland increased to a level almost as high as the combined total for the Ostrobothnia and Lapland regions – nearly one million euros. Projects led by Metsähallitus have mainly been in NHS Ostrobothnia and Lapland. Projects in which Metsähallitus is involved as a partner have mainly been in Southern Finland. Between 2001 and 2005 Metsähallitus was the principal implementing party in nine LIFE Nature projects and one LIFE CO-OP project. Over the same period it was also involved in 21 other LIFE projects. Metsähallitus correspondingly launched 22 of its own structural fund projects and was also involved in seven projects led by other organisations.

LIFE funding enhances the efficiency of conservation

The LIFE fund grants subsidies for nature conservation, for protecting priority species and habitat types under the Habitats and Birds Directives, and for developing Natura 2000 sites. LIFE subsidies have been granted to Metsähallitus for such purposes as drafting management plans for Natura areas, and restoring habitats in more than 2,000 hectares of mires and well over 4,000 ha of forests on mineral soils. Waterfowl habitats and wetlands have been restored and managed both inland and along the coast.

LIFE funding has been used to study and manage habitats of the threatened mire plants lady's slipper (*Cypripedium calceolus*) and yellow marsh saxifrage (*Saxifraga hirculus*), and to train forestry professionals and forest-owners in respect of these plants (see Information Box 24). Most LIFE projects have also included purchases of land for protection. Some 5,000 ha of new protected areas were purchased in this way between 2001 and 2005.

Many projects involve environmental education and the construction of facilities to support the sustainable recreational use of areas and tourism. Regional environment centres nearly always serve as partners of Metsähallitus in LIFE projects, and local authorities are also often involved. Other partners include the WWF, game management districts, the Finnish Forest Research Institute, universities and other educational institutes.

In 2002 the European Commission launched the new LIFE CO-OP financing instrument with a view to subsidising exchanges of experience between projects financed under the LIFE Nature programme. Metsähallitus received funds for its project: "*Best practices in Finnish wetlands – networking for improved wetland management*" in 2003-2004. This project assessed six waterfowl habitat restoration projects that had received LIFE Nature funding and concerned Finland's principal bird wetlands, ranging from coastal bays to lakes with rich bird-life, located throughout the country (see Information Box 28 on page 251).

Boosting nature tourism with structural funds

Objectives programme projects financed using structural funds from the ERDF have, for example, improved facilities in protected areas, and designed and set up exhibitions with natural themes. Projects have also involved measures to protect species and habitats, and promoted environmental education. Many projects have improved the conditions for nature tourism and increased collaboration between enterprises. The projects have also supported the sustainable use of protected areas and regional development. Metsähallitus's main partners in Objective projects have generally been the local municipalities.

Interreg III projects always concern transboundary cooperation between States and regions. Interreg IIIA projects may include Russia, while Interreg IIIB projects may cover all of the countries in the Baltic Sea catchment area. While Interreg projects often either directly or indirectly concern nature tourism, they also seek to establish protected areas and protect the habitats of species, as well as promoting public awareness of nature and environmental education. The Finnish partners in these projects are typically local authorities, nature tourism businesses and research institutes.

The initiatives supported by Interreg IIIA projects include the establishment of a new protected area in Kainuu near the Finnish-Russian border, including studies of the local culture and

Lady's Slipper Orchid and Yellow Marsh Saxifrage – Protecting Species Effectively with EU Support

A 5-year project supported by EU LIFE funding, "Conservation of *Cypripedium calceolus* and *Saxifraga hirculus* in Northern Finland", aimed to promote the conservation of these two directive-listed plant species (lady's slipper and yellow marsh saxifrage) in Natura 2000 sites in the regions of Kainuu, Ostrobothnia and Southern and Central Lapland. Conservation of these species was also promoted outside protected areas by distributing information gathered during the project and organising related training.

The lady's slipper is Finland's largest and most impressive orchid. The marsh saxifrage is a less well-known mire plant with yellow flowers. Both are threatened species whose numbers have declined so steeply throughout Europe that they are listed in the EU Habitats Directive as species requiring strict protection. The places where the two plants grow are also often especially valuable habitat types.

The EU Life project aimed to survey all occurrences of the two species in Natura areas within the project area, and to assess the need for habitat management and restoration measures. The gathered information was used to select suitable habitat management and restoration sites, and for planning the measures, which were also implemented during the project. At the end of the project it was possible to evaluate the conservation situation of the two species in Finland.

To promote conservation of these species, wide-ranging cooperation with private forestry organisations and forest owners was organised, special training materials were prepared (such as forestry guidelines for lady's slipper habitats) and training was provided. A total of 2,100 hectares of privately-owned areas within Natura sites were acquired to enable the establishment of nature reserves, especially in areas of particular importance for the protection of these species. Other threatened plants, which are found in the same localities with lady's slippers and marsh saxifrages, have also benefited from these conservation measures.

The Life fund emphasises the importance of communication and working with interest groups. During the project new national and international contacts were made, which will also be useful in future conservation work. Active communications increased the interest of the public and landowners towards these species, and the conservation of threatened species in general.

Surveying an occurrence of lady's slipper orchid (*Cypripedium calceolus*). Photo: Tiina Laitinen.

Other parties involved in the project in addition to the Metsähallitus NHS included Metsähallitus's Forestry and Laatumaa business units, and the regional environment centres and forestry centres of Kainuu, North Ostrobothnia and Lapland, the regional Forest Owners' Unions of Kainuu and North Finland, and the Oulanka Research Station of the University of Oulu. The total budget of the project was 1.9 million euros, half of which was Finland's national contribution. The project's main sponsors were Metsähallitus and the regional environment centres. EU Life funding and the involvement of so many expert partners enabled this project to be much more wide-ranging and influential than would have been possible using Metsähallitus NHS funds alone.

natural features and networking among local enterprises. The range and population of the freshwater pearl mussel and the threats to this species have been studied in Northern Finland, Russia and Norway. A transboundary project concerning threatened species that occur in both SE Finland and the Karelian Isthmus in Russia has surveyed occurrences of the white-backed woodpecker and Eurasian flying squirrel.

The *Wetlands, nature reserves and heritage landscapes as rural resources (BIRD)* -project (Interreg IIIB) studies how bird-rich wetlands, lakes, and natural and cultural areas can support rural development. This project promotes sustainable use of areas by combining nature conservation and habitat management with tourism. The *Baltic Sea Management – Nature Conservation and Sustainable Development of the Ecosystem through Spatial Planning (BALANCE)* project enhances the planning process for using marine areas and seeks to improve our understanding of the Baltic Sea using GIS methods. This project also incorporates an assessment of the coverage of the current Baltic Sea Protected Areas network and develops *blue corridors* in pilot areas. These corridors connect protected areas to ensure that organisms are protected throughout their life cycle, including spawning and feeding areas. These joint projects of the countries in the Baltic Sea region reinforce collaboration networks across national, operational and disciplinary boundaries.

Support for the Green Belt through the TACIS Programme

Since 1991 the TACIS technical assistance programme has financed certain EU relations with Eastern Europe and Central Asian countries. This programme seeks to support the transition to a market economy, the democratisation of communities, and the evolution of civil society.

Several conservation projects financed by the TACIS programme have been completed in the Russian Republic of Karelia. In 2001 the two-year Karelia Parks Development Project came to an end, having sought to continue the development of Paanajärvi National Park and to promote the establishment of four new national parks. This project prepared management plans for the proposed protected areas.

The NHS was a partner in two TACIS CBC (Cross-Border Cooperation, Small Project Facility) projects in 2002-2004. Both of these projects concerned the promotion of environmentally responsible tourism and the consequent diversification of the regional economy in the border region of Russian Karelia. The projects involved training protected area staff and tourism entrepreneurs, and the construction of basic facilities for tourism.

The Interreg III A and TACIS programmes have now been combined into a Neighbourhood programme, and the first project under this new umbrella was launched in the twinned national parks of Oulanka and Paanajärvi at the end of 2005.

The NHS is also a partner in the LIFE 3rd Countries project that began in 2005, seeking to develop a network of protected areas in the Leningrad Region.