Brian Gilligan, Nigel Dudley, Antonio Fernandez de Tejada and Heikki Toivonen

Management Effectiveness Evaluation of Finland's Protected Areas

Metsähallituksen luonnonsuojelujulkaisuja. Sarja A 147
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Brian Gilligan
P.O. Box 100
Raymond Terrace
NSW 2324
Australia

Nigel Dudley
Equilibrium
47 The Quays
Cumberland Road
Spike Island
BS1 6UQ Bristol
United Kingdom

Antonio Fernandez de Tejada
European Commission
Directorate-General Environment, Nature and Biodiversity Unit
B-1049 Brussels
Belgium

Heikki Toivonen
Finnish Environment Institute
Research Programme for Biodiversity
P.O. Box 140
FI-00251 Helsinki
Finland

Editing and information pages: Mervi Heinonen and Liisa Nikula
Graphs and maps: Marianne Katainen and Hannu Sipinen
Layout: Sirpa Routasuo

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Cover: The Louhimaa Croft and surroundings, Linnansaari National Park in the eastern lake area in Finland. These are home waters to the remaining endemic Saimaa Ringed Seals. (Photo: Lentokuva Vallas)

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ABSTRACT

A comprehensive international management effectiveness evaluation (MEE) of the Finnish protected area system was commissioned by the Metsähallitus Natural Heritage Services (NHS) in 2004. The evaluation was conducted in the IUCN World Commission on Protected Areas (WCPA) framework, but was adapted to the conditions of Finland. The elements of the management cycle considered were context, planning, resources, process, outputs and outcomes. The evaluation team reviewed literature and the NHS conducted a rapid self-assessment on 70 protected areas. Drawing on these, the team developed a series of specific questions based on the WCPA framework. The questions were answered by the NHS and they formed the core of the assessment and the subsequent report. The MEE was finalised by a field assessment, which included visits to representative protected area sites as well as meetings with NHS staff and representatives of directing and financing ministries, local stakeholder groups and NGOs.

The evaluation gives the general rating that Finland's protected areas are well managed, and with some exceptions, they appear to be achieving their aims of conserving biodiversity. However, the evaluators give a number of recommendations for improvements, summed up into ten areas of suggested action.

Ecosystem approach in planning is suggested to integrate protected areas with the land and water mosaics surrounding them to form effective ecological networks. Regional landscape plans for conservation should involve innovative partnerships with private land owners, local communities and other state land managers.
System planning is recommended to be supported by national strategies addressing invasive species and climate change. In addition a gap analysis of threatened species is suggested to see whether current conservation actions are adequate.
Site planning for management is falling behind schedule; strategic targets and milestones are required to finish and update this process. Periodical risk assessment would help to focus planning on sites in greatest need of action.
Conservation outcomes should be emphasized in management of protected areas. Certain declining habitats deserve greater attention. More areas where hunting and fishing is prohibited are needed as are efforts to reduce impacts of overgrazing by reindeer in the far north.
Community outcomes: specific efforts should be made to poll opinions and build arguments for protection with rural local communities to reduce still continuing antipathy for protected areas.
Visitor outcomes: visitor impacts should be assessed and impact reduction looked into by raising public awareness of service costs and environmental effects.
Financing provided by the Finnish government is in general seen adequate in international comparison. Exploration of options for other kinds of support are recommended. Annual audits should check against delivery on objectives, especially on those related to conservation.
Global role of Finland's protected areas and the significance of conservation work was seen not fully to be comprehended by all NHS staff. Better understanding of the Convention of Biological Diversity and Natura 2000 targets was suggested as a potentially motivating factor for staff.
Assessment of cultural values requires a strategy. Terrestrial and underwater habitat inventories are to continue. A Natura 2000 master plan for monitoring is needed. Assessment and monitoring systems should be worked into a coherent framework and resources concentrated on a suite of key indicators to sum up biodiversity and cultural outcomes in protected areas.
State of the Parks reporting is recommended on a regular five-year basis to analyse and communicate management effectiveness and support a culture of adaptive management. Reporting should involve external review.

KEYWORDS	protected areas, evaluation, biodiversity, management, nature conservation, cultural heritage		
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SAMMANDRAG

En omfattande internationell evaluering av effektiviteten i naturskyddsområdenas förvaltning i Finland utfördes på uppdrag av Forststyrelsen år 2004. Evalueringen grundade sig på en av Internationella naturvårdsunionens kommission för naturskyddsområden (IUCN WCPA) utarbetad referensram, som hade anpassats till finska förhållanden. Föremål för evalueringen var verksamhetsmiljön, naturskyddsområdenas tillstånd, planeringen, resurserna, verksamhetssätten, resultaten och effektiviteten. Evalueringsgruppen gjorde en litteraturbaserad översikt och Forststyrelsen utvärderade med en snabbanalys 70 skyddsområdens tillstånd. Utifrån dessa utarbetade evalueringsgruppen en serie frågor med WCPA:s referensram som grund. Forststyrelsen besvarade dessa frågor, som utgjorde kärnan i den egentliga evalueringen och den efterföljande rapporten. I evalueringen ingick också ett fältavsnitt, som omfattade besök på olika slags naturskyddsområden samt möten med representanter för Forststyrelsen, intressentgrupper och olika medborgarorganisationer.

Evalueringen gav vid handen att finska naturskyddsområden allmänt sett förvaltas väl, och med vissa undantag ansågs målen för skyddet av biodiversiteten på dem ha uppnåtts. Evalueringsgruppen framlade dock ett antal effektivitetshöjande rekommendationer, som sammanfattas i tio handlingsförslag.

Eksosystembaserad planering rekommenderas för att man skall kunna integrera skyddsområdena med omgivande land- och vattenområden. Med hjälp av regionala skyddsplaner bör man bilda ekologiska nätverk och ett nytt slag av samarbete med privata markägare samt representanter för lokala samfund och den offentliga förvaltningen.
Planeringen av skyddsområdessystemet: För att främja denna planering rekommenderas att man utarbetar nationella strategier för beaktande av inkomlingsarter och klimatförändringen. Därtill föreslås att man gör en luckanalys (gap analysis) av de hotade arterna för att utreda om det nuvarande artskyddet är tillräckligt.
Planeringen av objekten sackar efter tidtabellen; det krävs strategiska åtgärder för att man skall uppnå de uppställda skyddsmålen för naturskyddsområdena. Periodisk hotbedömning vore till nytta för att man skall kunna koncentrera skyddet till sådana skyddsobjekt där behovet av åtgärder är mest brådskande.
Naturskyddets effektivitet borde betonas vid förvaltningen av naturskyddsområden. Man borde fästa avseende vid habitat som håller på att försvinna. Det behövs fler områden där jakt och fiske är förbjudna. Man bör också finna sätt att bekämpa miljökonsekvenserna av renars överbete.
Lokala samfunds inställning till skyddsområdena borde undersökas, och man borde försöka påverka samfundens attityd så att den blev positivare gentemot skyddsområdena.
Friluftstjänsternas miljökonsekvenser och produktionskostnader borde utvärderas, och besökarnas och personalens kännedom om dem borde utökas för att reducera miljökonsekvenserna.
Finansieringen med statliga medel ansågs internationellt sett tillräcklig. En utredning av andra former av understöd rekommenderas. Resultat- och ekonomiuppföljningen borde vara mer förknippad med målen, i synnerhet med verksamhetens naturskyddsverkningar.
Global roll: I evalueringen påpekas att personalen vid Forststyrelsens enhet naturtjänster inte fullt förstått hur viktig roll skyddsområdena och naturskyddsarbetet i Finland spelar globalt sett. En djupare förståelse av de internationella naturskyddsmålen ses som en viktig motiverande faktor för personalen i dess praktiska arbete.
Kartläggning och uppföljning: Kartläggningen och vården av kulturvärden kräver en strategi. Inventeringen av naturtyper såväl på land som till havs borde fortsätta. För Natura 2000-uppföljningarna behövs en utredningsplan. Uppföljningssystemen bör i sin helhet sammanföras under en enhetlig referensram, och resurserna bör inriktas på en rad indikatorer, med vilka man kan mäta hur väl biodiversiteten och kulturvärdena bevaras.
Rapportering av parkernas tillstånd med ca fem års mellanrum rekommenderas för att analysera och informera om förvaltningens effektivitet och för att främja s.k. adaptiv förvaltning (adaptive management). Rapporteringen borde omfatta även en extern bedömning.

NYCKELORD	Naturskyddsområden, förvaltning, evaluering, effektivitet, biodiversitet, kulturarv		
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JULKAISUN NIMI	Suomen suojelualueiden hoidon tehokkuuden arviointi		

TIIVISTELMÄ

Kattava kansainvälinen arviointi Suomen suojelualueiden hoidon tehokkuudesta toteutettiin Metsähallituksen tilauksesta vuonna 2004. Arviointi perustui Maailman luonnonsuojeluliiton suojelualuekomission (IUCN WCPA) kehittämään viitekehykseen, jota mukautettiin Suomen oloihin. Arvioinnin kohteina olivat toimintaympäristö ja suojelualueiden tila, suunnittelu, voimavarat, toimintatavat, tulokset ja vaikuttavuus. Evaluointiryhmä teki taustakirjallisuuteen perustuvan katsauksen ja Metsähallitus toteutti pikamenetelmään perustuvan 70 suojelualueen tila-arvioinnin. Näiden perusteella arviointiryhmä laati WCPA:n viitekehykseen kysymyssarjan. Metsähallitus vastasi kysymyksiin, jotka muodostivat varsinaisen arvioinnin ja sitä seuraavan raportin ytimen. Arviointiin kuului myös kenttäosuus, johon sisältyi vierailuja erilaisilla suojelukohteilla sekä tapaamisia Metsähallituksen, sidosryhmien ja järjestöjen edustajien kanssa.

Yleisellä tasolla Suomen suojelualueiden hoidon taso arvioitiin hyväksi ja joitakin poikkeuksia lukuun ottamatta suojelualueiden katsottiin päässeen tavoitteisiinsa luonnon monimuotoisuuden suojelussa. Arviointiryhmä esitti kuitenkin tehokkuuden parantamiseksi joukon suosituksia, jotka on koottu kymmeneen toimintaehdotukseen.

Ekosysteemilähtöistä suunnittelua suositellaan suojelualueiden kytkemiseksi osaksi ympäröivien maa- ja vesialueiden kokonaisuutta. Ekologisia verkostoja ja uudenlaisia kumppanuuksia yksityismaiden omistajien, paikallisyhteisöjen ja julkishallinnon toimijoiden kanssa tulisi muodostaa aluekokonaisuuksia kattavien suojelusuunnitelmien avulla.
Suojelualuejärjestelmän suunnittelun tukemiseksi suositellaan kansallisten strategioiden laatimista tulokaslajien ja ilmastonmuutoksen huomioimiseksi. Lisäksi ehdotetaan uhanalaisten lajien kokonaisanalyysia, jotta voitaisiin arvioida, ovatko nykyiset toimet lajiston suojelemiseksi riittäviä.
Kohteiden suunnittelun aikatauluista ollaan jäämässä jälkeen, tarvitaan strategista otetta suojelualueiden suunnittelutavoitteiden saavuttamiseksi. Ajoittainen uhkien kartoitus voisi auttaa suunnittelun kohdistamisessa sellaisiin suojelukohteisiin, jotka vaativat kiireisimmin toimenpiteitä.
Luonnonsuojelun vaikuttavuutta tulisi painottaa suojelualueiden hoidossa. Tietyt häviävät elinympäristöt ansaitsevat huomiota. Tarvitaan lisää alueita, joilla metsästys ja kalastus kielletään. Porojen ylilaidunnuksen ympäristövaikutusten vähentämiseen tulee löytää keinoja.
Paikallisyhteisöjen suojelualueisiin kohdistuvia asenteita tulisi kartoittaa ja panostaa myönteiseen suhtautumiseen vaikuttavaan työhön.
Retkeilypalveluiden ympäristövaikutuksia ja tuottamiskustannuksia tulisi arvioida. Yleisön ja henkilöstön tietoisuutta niistä pitäisi myös lisätä, jotta vaikutuksia voitaisiin vähentää.
Rahoitusta valtion budjettivaroista pidettiin kansainvälisesti arvioiden yleisesti hyvätasoisena. Muiden tukimuotojen kartoittamista suositeltiin. Tulos- ja talousseurannan tulisi kytkeytyä kiinteämmin tavoitteisiin, erityisesti toiminnan luonnonsuojelulliseen vaikuttavuuteen.
Maailmanlaajuista roolia, joka Suomen suojelualuilla ja luonnonsuojelutyöllä on, ei arvioinnin mukaan täysin ymmärretä MH:n luonnonsuojeluhenkilöstön keskuudessa. Kansainvälisten luonnonsuojelutavoitteiden ymmärtäminen nähdään käytännön työtä motivoivana tekijänä.
Kartoitus ja seuranta: Kulttuuriarvojen kartoitus ja hoito vaatii strategian. Luontotyyppien inventointia sekä maalla että merellä tulee jatkaa. Natura 2000 -seurantoja varten tarvitaan yleissuunnitelma. Seurantajärjestelmät kokonaisuudessaan pitäisi nivoa yhtenäiseen viitekehykseen ja voimavarat kohdistaa sarjaan indikaattoreita, joiden avulla monimuotoisuuden ja kulttuuriarvojen säilymistä suojelualueilla voidaan mitata.
Puistojen tilan raportointia säännöllisin n. viiden vuoden välein suositellaan suojelualueiden hoidon tehokkuuden analysoimiseksi ja viestittämiseksi sekä ”sopeutuvan suunnittelun” (adaptive management) tukemiseksi. Raportointiin tulisi liittyä ulkopuolinen arviointi.

AVAINSANAT	suojelualueet, hoito, arviointi, vaikuttavuus, luonnon monimuotoisuus, kulttuuriperintö		
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Preface

Park managers and directors of park agencies need plenty of information to be able to manage their national parks and nature reserves efficiently and to run their agencies properly. In addition to the baseline information of ecological, cultural, social and economic values of the protected areas (PAs), we need to monitor the trends in biological diversity and other values within and outside the protected areas. We also need to understand the constraints and opportunities of the local and national social, cultural and economic circumstances. Without convincing performance measures, it may be difficult to gain accountability and public support and to secure funding in societies where transparency of decision-making and participation of different stakeholder groups are becoming increasingly important.

The management effectiveness evaluation (MEE) is a useful tool to organize the huge and chaotic information flow in a way that helps the managers to sharpen their strategies and "see the forest from the trees". Surely it helps a lot to get fresh insights from external evaluators in order to deepen one's own understanding of our work. It also buffers the park agency against overlooked risks and provokes innovative dialogue between park professionals and other stakeholders. The MEE report summarizes essential information on the management of protected areas in a well-structured manner. It celebrates the small victories of adaptive management, shows the success of systematic strategic development projects and illustrates clearly where we are just now; and recommends new approaches and steps to fill the existing gaps and make things better. By doing so, it underlines the fact that the MEE should indeed be incorporated in the general planning and monitoring system of protected areas. Especially, it helps to assess the capability and success in achieving intended outcomes and long-term aims, such as the Convention on Biological Diversity (CBD) target of significantly reducing the loss of biodiversity by 2010.

In Finland, the idea of international evaluations of the Finnish protected area system is not a new one. Already in 1994, Harold Eidsvik (Canada) and Hans Bibelriether (Germany) carried out such an evaluation. Since then, the World Conservation Union, IUCN, has created a logical and comprehensive framework for such evaluations; several new and refined tools have been developed for assessing specific management practices. At the same time, criteria and indicators have been developed for many aspects of ecological, social and economic sustainability, sometimes in association with the debate on certificates and ecolabels. The use of performance indicators have flourished in general business management. My serious personal interest in the MEE, though based on quite practical needs, was greatly increased due to the inspiring discussions with several friends and colleagues, notably with Dr. Marc Hockings. In Finland, the externally audited environmental management system, quality-related development projects and feed-back systems, internal auditing, directions from the ministries and involvement of local communities had all affected our effectiveness in managing protected areas. Thus, the timing for the MEE seemed to be appropriate. However, the idea was not just to get a snapshot of the present situation at the national level but to obtain recommendations on how to include the MEE as a solid part of the general management system of protected areas.

The first draft of the Terms of Reference was compiled by our agency, Metsähallitus Natural Heritage Services (NHS), in early 2003. The aim was to utilise in full all the new tools available for such an evaluation. We considered that the MEE would benefit from a wide participation of different stakeholders. Thus, we invited well-known experts with different backgrounds both to the Evaluation Team and to the Steering Group. The Evaluation Team itself consisted of experts representing expertise of managing a park agency, national parks, a biodiversity research unit, and a conservation-related private consultancy. The team had expertise from the Secretariat of the Convention on Biological Diversity, and from the European Commission on the Natura 2000 network and on the Habitats and Birds Directives. The IUCN and World Wildlife Fund, WWF, were involved actively during the whole process through their members in the Steering Group. Our aim was also to contribute to the implementation of the CBD Programme of Work on Pro-

tected Areas, and to help to streamline the potentially overlapping reporting needed for national, European and global purposes.

I am very satisfied that we decided to initiate the MEE and that we were successful enough to have such a professional, devoted and constructive Evaluation Team. I am deeply grateful to all of them – Brian Gilligan, Nigel Dudley, Antonio Fernandez de Tejada and Heikki Toivonen – for their outstanding services to the management of the Finnish park system. My acknowledgements are also due the members of the Steering Group for their advice and support. I can sincerely recommend organizing such an evaluation to other park agencies and services, as well as individual parks. It is well worth the time and investment; it gives a lot of food for thought; and it strengthens our global commitment towards the joint conservation goals.

Dr. Rauno Väisänen
Director
Natural Heritage Services ("Parks Finland")
Metsähallitus

Editorial notice

The final report drafted by the Evaluation Team was approved by the MEE Steering Group and received by the Metsähallitus Natural Heritage Services in December 2004. The NHS has added several information pages to the report (pages are distinguished by a light green background) as well as illustrations to make the context of the Finnish protected area system more understandable. Information sheets on protected area sites reviewed by the Evaluation Team in Finland and the NHS report of the RAPPAM self-assessment of PAs are annexed in agreement with the evaluators.

Evaluation group with stakeholders in the Archipelago National Park. Standing from left: Brian Gilligan, Evaluation Team Leader; Rauno Väisänen, NHS Director; Antonio Fernandez de Tejada, European Commission Representative; Jouko Högmander, NHS Regional Manager; Leif Lindgren, NHS Conservation Biologist; Nigel Dudley, WWF International Representative, and Heikki Toivonen, Finnish Environment Institute Professor. In front from left: Outi Engström, SW Finland Regional Environment Centre; Anita Mäkinen, WWF Finland; Päivi Valkama, Ministry of Finance; Micheala Gilligan. (Photo: Jan Ekebom)

Contents

Section 1: Background to the Evaluation

International state of protected area reporting

A premise of protected areas is that they should remain secure in perpetuity, to conserve their biological and cultural values. Devoting time and resources to the selection and designation of protected areas only makes sense, if there is a reasonable chance that they will remain intact. However, there is increasing evidence of a serious breakdown in many protected area systems and many individual protected areas are being degraded and destroyed. Others have been designated in name only: the so-called "paper parks" that exist as lines on the map, but have never been implemented or afforded management to protect heritage values. Some only remain secure by virtue of their remoteness; a situation likely to change in the future. Many threats result from interference, often illegal, including poaching (of wildlife, timber and other resources), mining and fossil fuel extraction, encroachment by settlers, tourist pressure and through development of roads and dams. Protected areas are also subject to indirect damage from air and water pollution, fire, hydrological change and global warming.

A study of 12 countries in Africa, Asia and Latin America and the Russian Federation, carried out for the World Bank and WWF, found less than a quarter of forest protected areas in the countries surveyed were considered to be "well managed with a good infrastructure" and only one per cent were judged to be wholly secure (Dudley & Stolton 1999). A more detailed study for WWF concluded that: "Estimates for the percentage of protected areas suffering more or less serious threat or damage range from a quarter to three quarters in national or global surveys (excepting parts of Europe, Australasia and North America)" (Carey et al. 2000). Threats are particularly acute in some developing countries, where lack of money and infrastructure are together creating acute problems for protected area managers. However, problems also occur in some of the richest nations; for example the Panel on the Ecological Integrity of Canada's National Parks reported in March 2000 that only one of the country's 39 national parks was free from ecological stress (Parks Canada Agency 2000).

Recognition of the scale of problems facing protected areas has created recognition of the need for better knowledge about the status and management effectiveness of protected areas. At present, many countries have no centralised source of information about the status of their protected areas; knowledgeable individuals may have a good understanding about the status of individual protected areas, but this will often not be written down or collected into any central database. There is also often a very poor understanding about what management effectiveness means and how it might be measured.

A number of surveys of threats to and status of protected areas have been carried out and methodologies reviewed by Hockings (2000). These range from reasonably detailed monitoring systems, such as one implemented on Fraser Island National Park in Queensland, Australia (Hockings & Hobson 2000), to a rapid assessment system developed by WWF and the World Bank to prioritise protected areas at risk within a national protected areas system (Ervin 2003).

The IUCN World Commission on Protected Areas (WCPA) set up a Task Force to focus attention on the issue. As a result, a framework for assessment has been prepared (Hockings et al. 2000). The framework aimed to provide overall guidance in the development of assessment systems and to encourage basic standards for assessment and reporting. The framework is based upon the premise that management starts by establishing a vision (within the context of existing status and pressures), progresses through planning and allocation of resources and, as a result of management actions, eventually produces goods and services. Monitoring and evaluation provide the link that enables managers to learn from experience and helps governments, funding agencies and civil society to monitor the effectiveness of protected areas. Assessment should look at all aspects of the management cycle. Figure 1 presents a common framework within which evaluation and monitoring programmes can be established.

Figure 1. The IUCN WCPA framework for assessment of management effectiveness.

The elements to be measured in a Management Effectiveness Evaluation

Design issues relating to both individual sites and to protected area systems: *Context – Where are we now?* This aims to provide an understanding of existing status, importance and the threats facing the area. It also helps to provide information about management focus. *Planning – Where do we want to be?* This covers appropriateness of planning including: national protected area policies, plans for protected area systems, the design of individual protected areas and management plans.

Appropriateness of management systems and processes: *Input and process – What do we need and how do we go about it?* This relates to adequacy of resources and management systems. Information includes a measure of staff, funds, equipment and facilities required at agency or site level. Management processes can be assessed through issues ranging from day-to-day maintenance to the adequacy of approaches to local communities.

Delivery of protected area objectives: *Output and outcome – What were the results and what did we achieve?* This considers whether management has fulfilled the management plan, national plans and aims of the IUCN protected area category. Output evaluation looks at management actions and implementation of targets, work programmes or plans. Approaches to outcome evaluation involve long-term monitoring of the condition of the biological and cultural resources, socio-economic aspects and impacts of management on local communities.

Assessment systems have now been applied in a number of countries, at both the level of individual protected areas and protected area systems. These are currently being assembled into a first global study of protected area effectiveness. This work was given an important boost in February 2004 when the Convention on Biological Diversity identified management effectiveness of protected areas as an output in its proposed Programme of Work on Protected Areas as outlined in the box below (www.biodiv.org).

Goal 4.2 – To evaluate and improve the effectiveness of protected areas management

Target: By 2010, frameworks for monitoring, evaluating and reporting protected areas management effectiveness at sites, national and regional systems, and transboundary protected area levels adopted and implemented by Parties.

Suggested activities of the Parties

4.2.1 Develop and adopt, by 2006, appropriate methods, standards, criteria and indicators for evaluating the effectiveness of protected area management and governance, and set up a related database, taking into account the IUCN WCPA framework for evaluating management effectiveness, and other relevant methodologies, which should be adapted to local conditions.

4.2.2 Implement management effectiveness evaluations of at least 30 percent of each Party's protected areas by 2010 and of national protected area systems and, as appropriate, ecological networks.

4.2.3 Include information resulting from evaluation of protected areas management effectiveness in national reports under the Convention on Biological Diversity.

4.2.4 Implement key recommendations arising from site- and system-level management effectiveness evaluations, as an integral part of adaptive management strategies[1].

Suggested supporting activities of the Executive Secretary

4.2.5 Compile and disseminate information on management effectiveness through the clearing-house mechanism and develop a database of experts in evaluation of protected area management effectiveness and consider the possibility of organizing an international workshop on appropriate methods, criteria and indicators for evaluating the effectiveness of protected area management.

4.2.6 In cooperation with IUCN WCPA and other relevant organizations, compile and disseminate information on best practices in protected area design, establishment and management.

Over the coming 2–3 years, the World Commission on Protected Areas will be working with the Convention on Biological Diversity to develop and implement actions to help meet these targets. The current report from Finland should be seen in the context of these international developments. It has particular importance in being the first national-level study from a developed country based on the WCPA framework and may therefore be useful as a case study or template for similar systems elsewhere.

[1] Adaptive management incorporates research into conservation action. Specifically, it is the integration of design, management, and monitoring to systematically test assumptions in order to adapt and learn (Salafsky et al. 2001, Oglethorpe 2002).

Protected area assessment in Finland

Finland has a well developed network of protected areas (PAs), numerically spread around the country and covering about 10 % of the total area, but with the majority of the area protected being in the far north. There are generally no permanent settlements in protected areas and no logging, although reindeer herding and subsistence hunting (under licence for less common species) is allowed in the three northern regions.

The protected areas on state land are mostly administrated and managed by the Natural Heritage Services (NHS). The agency is part of Metsähallitus, which is also responsible for management of state forest land. Metsähallitus is directed by a Board of Directors made up of nominees of both from the Ministry of Agriculture and Forestry and the Ministry of the Environment (see Figure 2). The large majority of funding for the NHS comes from the state. At a budgetary level, the Metsähallitus NHS is supervised mostly by the Ministry of the Environment.

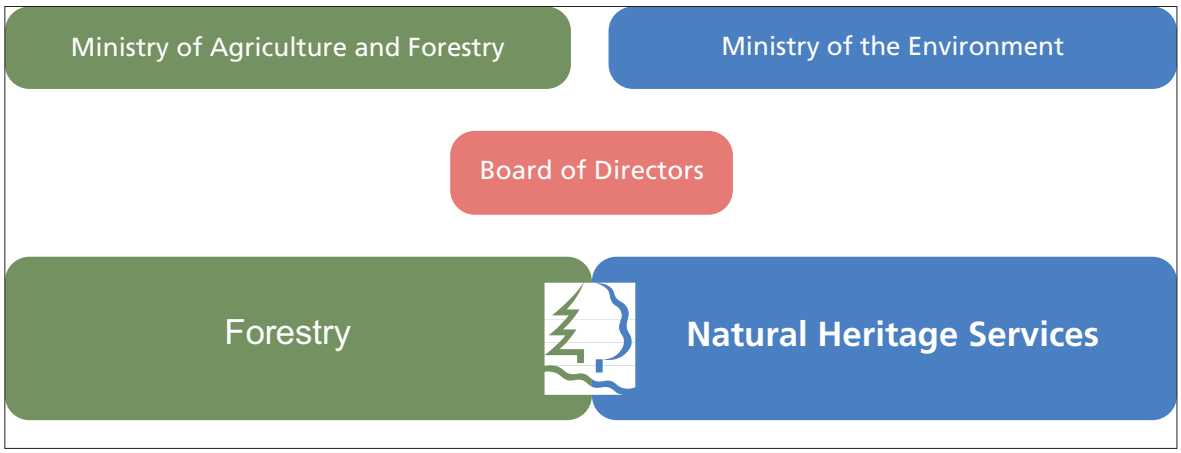


Figure 2. Organisation of Metsähallitus.

Protected area system of Finland

The backbone of the Finnish protected area system is a network of national parks, strict nature reserves and wilderness areas on state land. Most of the areas consisting of representative forest, mire and fell habitats are situated in northern Finland, but there are also several national parks in the southern part of the country (see Fig. 3). There are currently 34 national parks managed by the NHS, registering over 1.1 million visitors in 2003 (Finland has 5.2 million inhabitants).

Another main element in the Finnish protected area system is a series of sites belonging to national conservation programmes for particular ecosystems and their species' assemblages. Specific national conservation programmes have been established for mires, herb-rich forests, waterfowl wetlands, shores (both inland and coastal waters), and old growth forests, respectively. Many areas, especially those for mires or old-growth forests, are large, but many more sites are small. The national conservation programmes include areas both on state and privately-owned land, and an important way in implementing these programmes is through establishing conservation areas on private land. (For details on the protection programmes see pages 16–17.)

The first Finnish national parks and strict nature reserves were established in 1938. Of these only four remain, the rest were in territories claimed by the Soviet Union after the II World War. Twelve national parks and seven strict nature reserves were designated in 1956. These were administered by the Finnish Forest Service (as Metsähallitus was called then) as part of the forestry organisation. The first conservation area official was employed in the early 1970s.

Inventories for modern science-based nature conservation programmes were accomplished between 1981–1991 for national parks, mires, herb-rich forests, bird wetlands and shore biotopes and 1991–1995 for old-growth forests. The programmes were ratified from 1978–1996 as Council of State decisions. Twelve wilderness areas were established in Lapland in 1991. The number of statutory protected areas on state land increased to 380 by the year 2000 and to 442 by 2004.

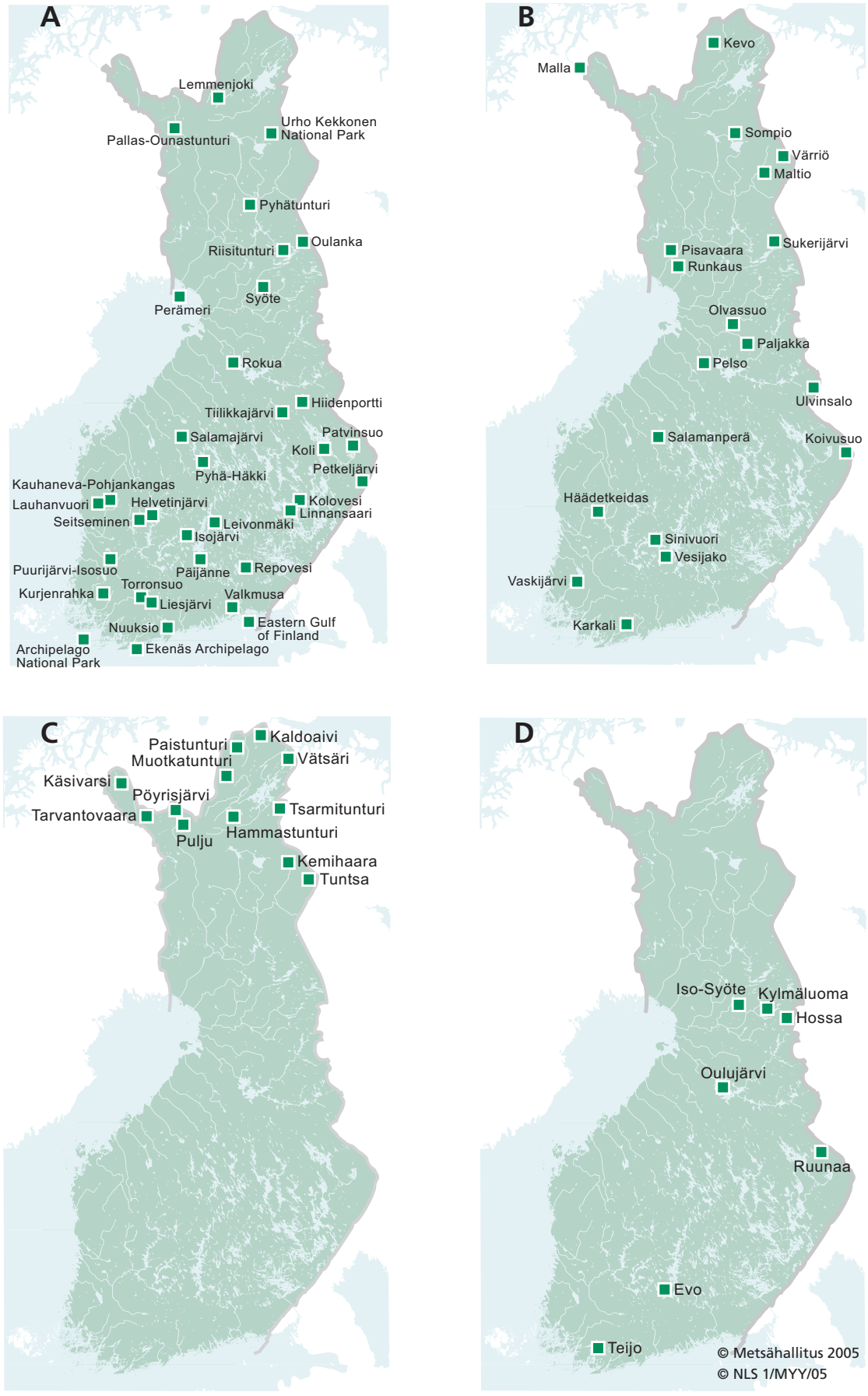


Figure 3. Protected areas in Finland. A) National Parks, B) Strict Nature Reserves, C) Wilderness Reserves and D) National Hiking Areas. Of the total 442 established on state land these represent the protected areas analysed in this assessment. Koli National Park as well as Malla and Vesijako Strict Nature Reserves are administered by the Finnish Forest Research Institute, others by Metsähallitus.

Programmes for Nature Protection in Finland

The Finnish Government has approved seven nature conservation programmes in the past few decades. They cover national parks and strict nature reserves, mires, bird wetlands, eskers, herb-rich woodland, shores and old-growth forests. The preparation of the conservation programme decisions have been multi-stakeholder processes. Each programme has its own specific aims, which were used as criteria for the selection of the conservation areas. Nomination of sites for each programme was based on extensive scientific inventories and underwent scrutiny of different interest groups. Implementation of the present conservation programmes is a continuing process, which will go on until the end of 2007.

About 10 % of the total area of Finland is now protected under the Nature Conservation Act or the Act on the Protection of Wilderness Reserves. There are 442 statutory nature conservation areas and 12 wilderness areas. The aim in designating nature reserves is to ensure that representative examples of all natural habitat types found in Finland are preserved. This also helps to maintain the populations of their characteristic animals and plants, and to safeguard threatened species. Wilderness areas aim also at preserving Sámi culture and sustaining traditional means of livelihood in the North.

Additional acts have been passed and actions taken to protect nature and cultural values in other ways. The Act on the Protection of Rapids prohibits the construction of new hydropower facilities along more than 50 stretches of rapids. Metsähallitus' landscape ecological planning policies ensure valuable natural areas and cultural sites are preserved on state-owned land. Landscape ecological plans were first drawn up for all forestry areas, but the policies are now incorporated into the natural resource planning process – in forestry areas as well as designated protected areas. Numerous small protected areas have been established on private land. Many smaller-scale natural features have also been designated as natural monuments.

Altogether 7,777 km^2 of the proposed conservation programme sites were still pending on January 1st 2004. With the exception of waterfowl habitats, a major part of the land acquisitions for the state have already been done, but the protection areas have not yet been established. By the end of 2007 the number of statutory protected areas in Finland will triple.

Finland's original proposal in 1998 for the Natura 2000 network included 1,813 sites covering a total of 49,000 km^2. Supplementary areas were added in 1999, 2002 and 2004. The estab-

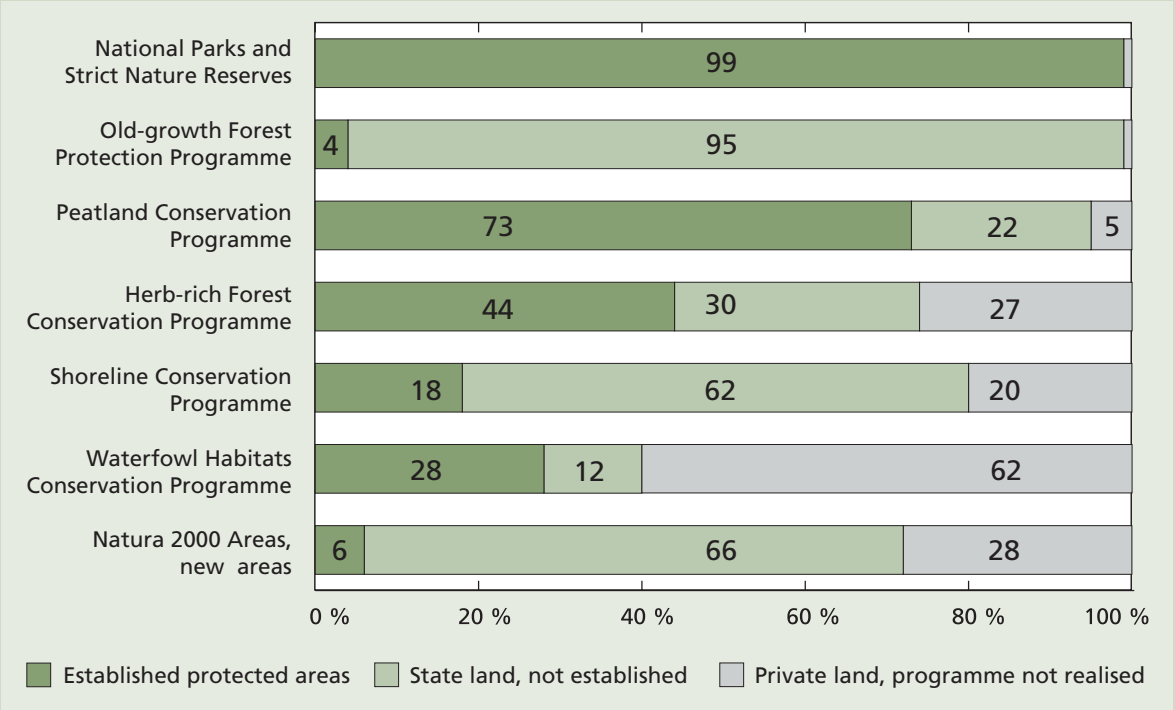
Nature protection programmes in Finland 1978–2007.

Starting years	Protection Programme
1978–1988	National Parks and Strict Nature Reserves
1979–1981	Mire Conservation Programme
1982	Waterfowl Habitats Conservation Programme
1984	Glacifluvial Esker Formations
1987	Act on the Protection of Rapids
1989	Herb-rich Forest Conservation Programme
1990	Shoreline Conservation Programme
1991	Act on Protection of Wilderness Reserves
1992–1996	Protection of Old-growth Forests
1996–2002	Landscape Ecological Planning in State-owned Forests
1998–2002	Natura 2000 Network

Protected areas in Finland 1.1.2004.

Protected areas	Number	Area (km^2)
National Parks	35	8 170
Strict Nature Reserves	19	1 530
Mire Reserves	173	4 490
Protected Herb-rich Forest Areas	53	13
Protected Old-growth Forest Areas	92	100
Grey Seal Protection Areas	7	190
Other Protected Areas on State Land	39	460
Protected Areas Established by Metsähallitus	24	8
Protected Areas on Private Land	3 438	1 220
Total	**3 880**	**16 181**
Wilderness Areas	12	14 890
Total	**3 892**	**31 071**

lished protected areas and the not yet realised conservation programme areas form the core of the network, altogether 97 % of the total Natura 2000 area. National hiking areas, which in Finland are not considered proper nature conservation areas, are also included in Natura 2000. There are seven hiking areas, established by outdoor recreation legislation, totalling 360 km². Only 19 Natura sites in the Alpine zone have been established and they total 17,900 km². The rest of the proposed Finnish sites are in the Boreal region and have just been approved by the European Commission on January 13th 2005.



Status of conservation programme areas and the Natura 2000 network areas 1.1.2004. Natura 2000 areas include only new areas, which were not established and not included in the conservation programmes before 1998 and will be established as protected areas. (Source: Ministry of the Environment)

Nuuksio National Park. Within the metropolitan area of capital Helsinki, this 'wilderness' is accessible by city bus. (Photo: Jari Kostet)

Implementation of the current conservation programmes continues until the end of 2007. The number of protected areas is expected to triple to about 2020, mainly as a result of legislation to protect old-growth forests and through implementation of Natura 2000, although these will mainly be of small areas in the southern part of the country covering around 7,000 km^2 in all.

Protected areas are mostly managed by the Natural Heritage Services

All the protected areas on state land are administrated and managed by the Natural Heritage Services excluding those few managed by the Finnish Forest Research Institute. On January 1st 2004, 425 state-owned and 55 privately-owned protected areas covering 14,995 km^2 were under Metsähallitus' administration, along with the 12 wilderness areas covering 14,898 km^2, and a further 1,429 sites covering 7,777 km^2 pending protection. There are also significant holdings of national hiking areas (360 km^2), recreational forests (1,600 km^2) and public water areas (24,350 km^2).

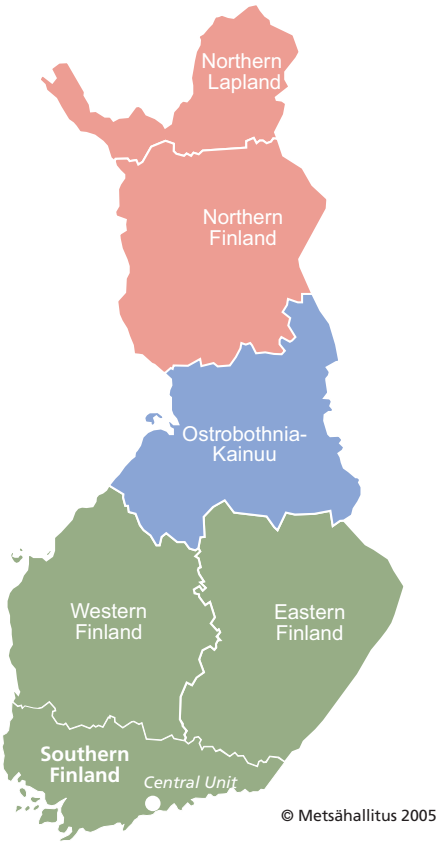


Figure 4. Regional organisation of the Metsähallitus Natural Heritage Services. Colours correspond to geographical grouping used in the RAPPAM self-assessment.

The management planning of private conservation areas is done largely on ad hoc basis and mostly executed by the Regional Environment Centres, which are also responsible for other administrative issues concerning them.

The first actual state park administration was established within Metsähallitus in 1981 and operated in the beginning as a bureau of seven persons. A decade later there were 60 people working in nature conservation, 24 of them in the central office. A nationwide regional organization was established in 1992 and the nature conservation unit grew to 100 persons and administered already one third of Metsähallitus land area. By 1999 the parks administration was named the Natural Heritage Services, had a staff of 230 and was in charge of 40 % of Metsähallitus land area and the public waters (transferred to Metsähallitus in 1995).

The Natural Heritage Services is now charged with management of protected areas, threatened species and international cooperation on conservation, along with responsibility for hiking and skiing services, management and utilisation of state-owned water areas and an umbrella role in the Northern Lapland District for Wilderness Management. The NHS is divided into six regional units (see Fig. 4), with around 300 permanent staff and 790 seasonal workers in 2003. Management aims are principally maintenance of biodiversity and "naturalness".

Previous assessments

Metsähallitus NHS has already undertaken several assessments, including internal and external assessments. The environmental and quality systems of the organisation comply with the requirements of the ISO 14001 standard according to a certificate granted in 1998. Operations are also systematically evaluated internally by an annual appraisal by the Internal Audit Function of Metsähallitus, conducted to IIA standards. There have been ten audits of NHS management and operations since 2000, along with some broader audits that included the NHS, based around the value, visions, goals, objectives and strategies of Metsähallitus. Audits are based on a model known as COSO, Enterprise Risk Management Framework (see Fig. 5).

Figure 5. COSO Internal control components. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) framework for enterprise risk management.

In 1994, Metsähallitus invited two independent assessors to carry out a technical assessment of Finland's protected areas (Eidsvik & Bibelriether 1994). The current study is in some ways a follow up to this, drawing on the international work on assessment that has taken place in the years since. Action has been taken to address the recommendations of the 1994 assessment for a more systematic approach to reserve establishment, enhanced linkages between visitor centres and school curricula and, to some degree enhanced resourcing of protected area management. Some of the challenges identified, such as the impacts of reindeer grazing, boundary issues and the need for enhanced protection of marine and freshwater systems remain.

There have also been several studies assessing the significance of the Finnish protected areas network to biodiversity, for instance with respect to forests and mires (Virkkala et al. 2000, Virkkala 2004, personal communication), forest-dwelling species (Heikkinen et al. 2000), mires (Aapala 2001) and inland waters (Toivonen et al. 2004). In addition, Oulanka National Park has undergone a successful Pan Parks evaluation, which is a certification system originally developed with support from WWF. This has been a major challenge for Metsähallitus NHS because principle 2 of the Pan Parks principles and criteria states that the protected area needs to have a core zone with some defined restrictions. Oulanka has therefore become the first national park in Northern Finland to be in the process of banning subsistence hunting in part of the area. Pan Parks certification requires re-inspection every year.

One Finnish protected area, again Oulanka National Park, was also included in a survey of 206 forest protected areas carried out by WWF and the World Bank, using a rapid tracking tool which results in a numerical score (Stolton et al. 2003). The limitations of this approach should be noted: the tracking tool draws on the subjective impressions of managers or other local experts and is relatively weak at allowing comparison between protected areas. In this analysis North American protected areas were not included. Nonetheless, the NHS can draw some comfort from the fact that in this analysis Oulanka had the highest score of any protected area assessed, suggesting that at an international level Finland's protected areas are performing quite well (Dudley et al. 2004).

Changing perspectives within Europe

Since the last assessment of the protected area system in 1994, and since most of the monitoring and evaluations systems were established within the country, Finland's membership of the European Union in 1995 has brought some new obligations.

One of the main aims of the European Union over the next few years is to halve the loss of biodiversity within member states. The Natura 2000 network is one of the key instruments that member states can use to achieve this goal and is thus a critical element within the national protected area network.

Natura 2000 is a network of sites that have the overall goal of protecting biodiversity within the European Union. It is composed of two main types of site: Special Protected Areas (SPAs) designated under the EU Birds Directive (1979/409/EEC) and Special Areas of Conservation (SACs) designated under the EU Habitats Directive (1992/43/EEC). Currently the Macaronesian and Alpine lists of Natura 2000 sites have been adopted by the European Commission; it is hoped that the Boreal list will be adopted before the end of 2004.[2] (The six bio-geographical regions within the EU's Natura 2000 network are Macaronesian, Alpine, Atlantic, Continental, Mediterranean and Boreal. See Fig. 6) The Natura 2000 network has been designed using best available scientific knowledge and aims to be a coherent and well-balanced European network of sites.

[2] Editorial notice: The Boreal list was approved January 13th 2005 by the European Commission.

The Finnish Natura 2000 network proposal was primarily based on existing protected areas and sites in the national conservation programmes, but it includes also many additional areas where the basis for protection are particular EU directive species or nature types (Anon. 2002a). The final Natura 2000 network proposal also includes large water and shore areas, in which many activities such as forestry, building of summer residences, water construction works are regulated by the Land Use and Building Act, the Forest Act and the Water Act. Most of Natura sites are, however, to be implemented by the Nature Conservation Act. The Finnish Natura 2000 proposal now covers a total 59,930 km^2 of which Metsähallitus has 42,840 km^2 (71 per cent). See Fig. 7.

Unlike many other member states that have included much private land with a range of management interventions, Finland has based its Natura 2000 network mainly on the existing protected areas network and on state land. Although Natura 2000 represents a coherent network from the EU perspective, nonetheless from national or regional perspectives more ambitious goals could probably be reached. The developing network, and the new approaches needed for its designation and management, formed an important element in the current evaluation.

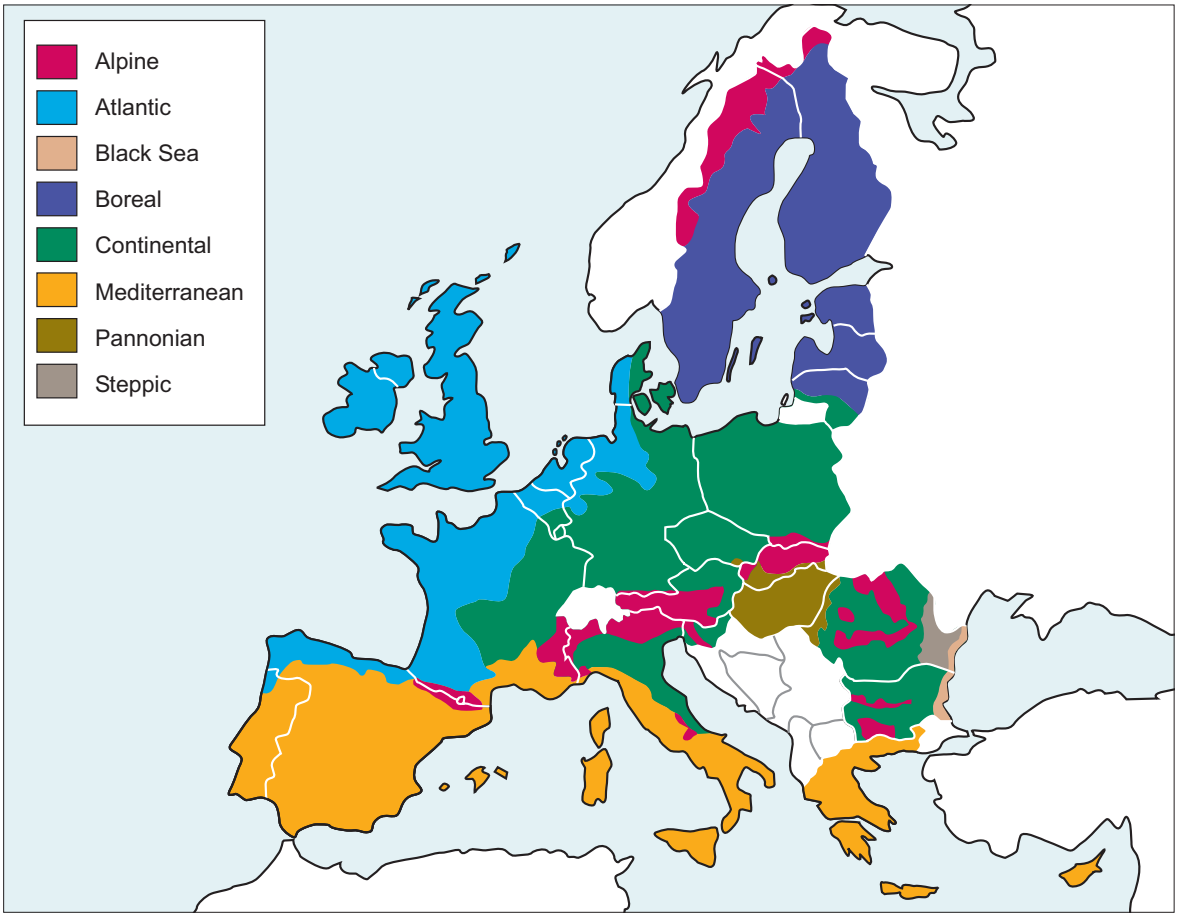


Figure 6. Indicative map of the biogeographical regions of the European Union member countries. Finland is primarily in the Boreal forest region, a portion of northern Lapland is in the Alpine region. (Source: European Topic Center for Nature Protection and Biodiversity, Paris)

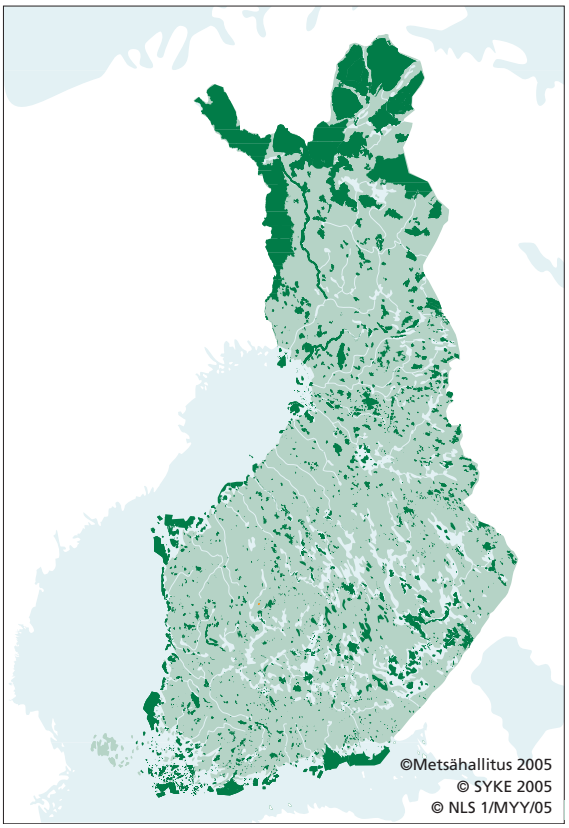


Figure 7. The Natura 2000 network in Finland. The Natura 2000 proposal is based on the existing network of established and pending protected areas and is supplemented with areas not included in the prior conservation programmes. A total of 71 % of the network area is administered by Metsähallitus.

Methodology for the assessment

The methodology for the current assessment was based on the IUCN WCPA framework, but adapted for the particular conditions in Finland (which includes, for instance, access to large amounts of data and trained staff available for interview). An international steering group was identified to help to develop and comment on the assessment, including:

- Mr. **Timo Tanninen**, (CEO of WWF Finland), chairperson
- Dr. **Chris Hails** (Conservation Director, WWF International)
- Mr. **Nicholas Hanley** (Head of Nature and Biodiversity Unit, Directorate-General Environment, European Commission)
- Dr. **Marc Hockings** (University of Queensland, Australia & IUCN WCPA Management Effectiveness Theme Chair)
- Mr. **Esko Jaakkola** (Environmental Counsellor, Ministry of the Environment, Finland)
- Dr. **Carl Gustav Lundin**, (Director of IUCN Marine Programme)
- Mr. **Matti Määttä**, (Regional Director, NHS Eastern Finland), rapporteur.

The aim was to represent key institutions with an interest in Finland's environment and by including two representatives from IUCN also to ensure that the assessment could help to drive the international efforts to increase protected area management effectiveness. Terms of reference for the MEE of the Finnish protected areas was approved by the steering group March 8th 2004 (see Appendix 1).

A four person evaluation team was identified and appointed, being chosen to include someone with specific experience in running a comparable protected area programme, someone with expertise in Natura 2000, a representative from a conservation NGO and a local expert:

- Mr. **Brian Gilligan** (former Director General of Parks New South Wales, Australia), team leader
- Mr. **Nigel Dudley** (MEE evaluation expert, WWF International)
- Mr. **Antonio Fernandez de Tejada** (Nature and Biodiversity Unit, Directorate-General Environment, European Commission)
- Professor **Heikki Toivonen** (Research Manager, Biodiversity Research Unit, Finnish Environment Institute), local expert.

The team reviewed a large amount of literature during spring 2004. Park managers in Finland also filled out a self-assessment questionnaire, modified from the WWF RAPPAM system (Rapid Assessment and Prioritisation of Protected Area Management, Ervin 2003)[3]. The assessment included 70 protected areas, including the national parks, strict nature reserves, wilderness reserves and national hiking areas (see Fig. 3). Analysis of results was done partly on georaphical basis; the land division used is marked on the map presenting the NHS regional units (see Fig. 4). The full report compiled by NHS staff is attached to the report (see Annex 2).

[3] The RAPPAM questionnaire would normally be filled out in a workshop, so that managers could discuss the results but this was not possible in all areas of Finland within the time and budget constraints of the current assessment.

Drawing on the literature review and the RAPPAM analysis, a series of specific questions were developed to form the core of the assessment and subsequent report. These are listed below.

1 Context
- 1.1 Is there a clearly articulated national vision for the on-going development and management of the Finnish PA system?
- 1.2 Does the legislative and administrative framework support the effective functioning of the PA system?
- 1.3 Are personnel and resources well organised and managed with access to adequate resources?
- 1.4 Is there a cohesive and nationally coordinated approach to PA management?
- 1.5 Is transboundary and regional cooperation established and maintained in a manner which supports effective management of Finnish protected areas?
- 1.6 Are the values of the PA system well documented and assessed?
- 1.7 Are the threats to PA system values well documented and assessed?
- 1.8 Do Finnish PA management objectives harmonise with Natura 2000 objectives?
- 1.9 Do Finnish PA management objectives harmonise with wider cultural objectives including those relating to the Sámi?

2 Planning
- 2.1 Are protected areas identified and categorised in an organised system?
- 2.2 Are individual protected areas designed and established through systematic and scientifically based criteria and process with a clearly articulated vision?
- 2.3 Are established reserves covered by comprehensive management plans?
- 2.4 Are management plans routinely and systematically updated?
- 2.5 Are protected areas located in places with the highest/most threatened biodiversity values?
- 2.6 Are stakeholders given an opportunity to participate in planning?

3 Resources
- 3.1 What level of overall resourcing is provided for PA management?
- 3.2 How have resourcing levels varied with increases in protected areas in recent years?
- 3.3 On what basis are resources allocated to PAs for management?
- 3.4 At the park level, are resources linked to priority actions identified in management plans?
- 3.5 What level of resources is provided by partners and/or volunteers?
- 3.6 Do PA managers consider resources to be sufficient?

4 Process
- 4.1 Is management performance against relevant planning objectives and management standards routinely assessed and systematically audited as part of an on-going 'continuous improvement' process?
- 4.2 Is NHS staff performance management linked to achievement of management objectives?
- 4.3 Is the NHS internal audit function systematic and credible?
- 4.4 Is there external and independent involvement in internal audit?
- 4.5 Is there effective public participation in PA management in Finland?
- 4.6 Is there a responsive system for handling complaints and comments about PA management?

5 Output
- 5.1 Is adequate information on PA management publicly available?
- 5.2 Are visitor services appropriate for the relevant protected area category?
- 5.3 Are management related trends systematically evaluated and routinely reported?
- 5.4 Do audit reports reveal effective management?
- 5.5 Is there a systematic maintenance schedule in place for built infrastructure/assets?
- 5.6 Does Finland fulfil its monitoring and reporting obligations under European Directives and international conventions?

6 Outcomes

- 6.1 Are threats to reserve heritage values held in check or reduced?
- 6.2 Are threatened species populations stable or increasing?
- 6.3 Are parks and reserves losing native species?
- 6.4 Are selected indicator species within acceptable ranges?
- 6.5 Are biological communities at a mix of ages and spacings that will support native biodiversity?
- 6.6 Are ecological processes [in the PAs] functioning in a healthy and sustainable manner?
- 6.7 Are the expectations of visitors generally met or exceeded?
- 6.8 Are neighbours and adjacent communities supportive of PA management?
- 6.9 Are cultural heritage assets protected?

To assist further in focusing the evaluation work a set of assessment criteria were drafted for each question. The evaluation team did not spend any time discussing these during the field evaluation phase and in some instances more precise wording might have enhanced their usefulness. However the assessment criteria as originally drafted do provide some basis for a one or two word statement on the overall outcome of the assessment with regard to each question.

Consideration was given to translating the assessment criteria into a numerical score for each question. It is noted that such an approach could have value in some instances in justifying the overall conclusion of an assessment or in undertaking a comparative assessment, if several protected area systems were being evaluated using the same questions and criteria. However, assigning numerical scores gives rise to complex debates

1 Siida Northern Lapland Nature Centre
2 Lemmenjoki National Park
3 Urho Kekkonen National Park
4 Oulanka National Park
5 Syöte National Park and Iso-Syöte Hiking Area
6 Hossa Hiking Area
7 Linnansaari National Park
8 Siikalahti Nature Reserve
9 Torronsuo National Park
10 Liesjärvi National Park
11 Teijo Hiking Area
12 Archipelago National Park
13 Nuuksio National Park
14 Headquarters Vantaa

Figure 8. Management effectiveness evaluation sites in Finland. The protected areas were selected to represent a range of different habitats in different parts of the country, with parks of high and low visitation. Several cultural sites were included. Natural Heritage Services headquarters is also marked on the map.

about the relative weighing of different questions and the precise wording of assessment criteria. It was concluded that for the purposes of this particular evaluation numerical scoring would not add value to the evaluation.

As the assessment does offer some additional insight into the questions posed and they have provided a very crude indication of the overall assessment by the evaluation team, they are included in full as Appendix 2 to the report. They may also be of some use to others considering how best to structure evaluations in other situations.

These questions were not a straitjacket for the assessment but general guidance (and in fact some were merged and others developed during the course of the study). The questions were initially answered by Metsähallitus NHS staff members and the assessment and verification of these answers formed the skeleton of the field assessment, which took place during August 2004. The assessment started and ended with a workshop at Metsähallitus NHS headquarters in Vantaa, and included a series of visits to protected areas, presentations from NHS staff and meetings with selected local stakeholder groups and non-governmental organisations (NGOs). The evaluation trip schedule and a list of people met and interviewed are included at the end of the report (Appendix 3 and 4). Sites visited are mapped out on Figure 8 and basic information on these sites is also annexed to the report (Annex 1). Following the field evaluation, the current report was developed.

A schematic presentation of the assessment process is given in Figure 9 and an analysis of the methodology itself is included in Section 4 of this document.

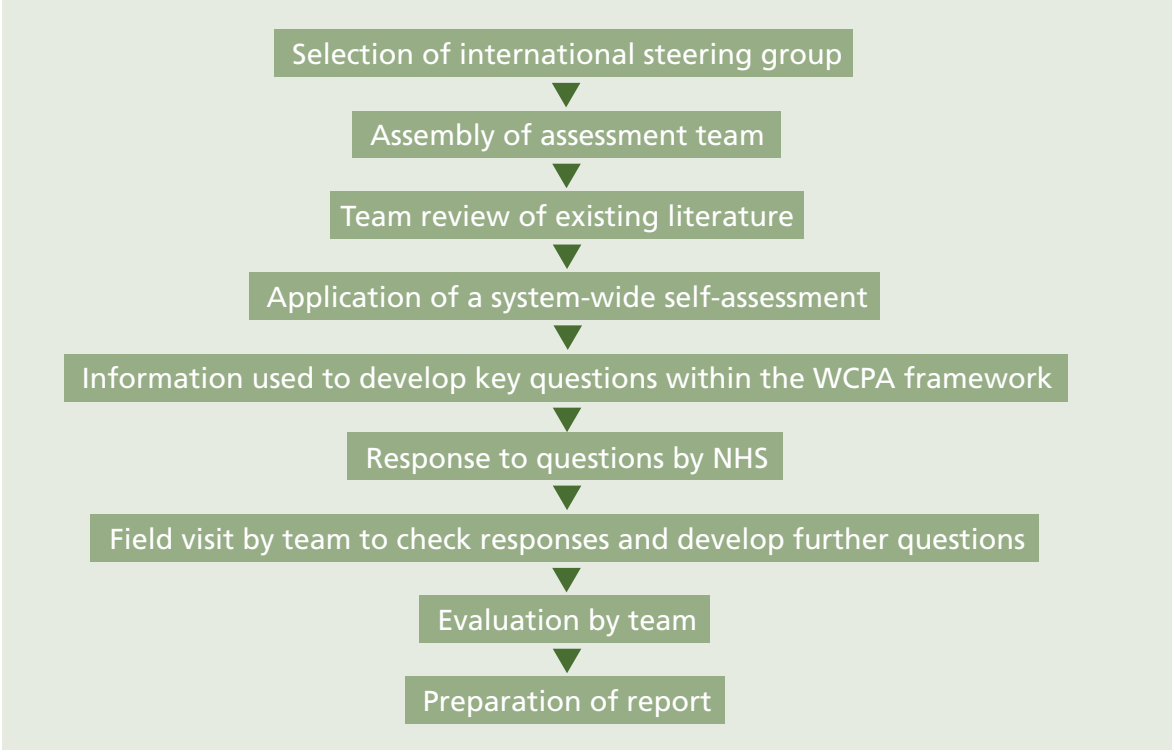


Figure 9. Schematic presentation of methodology used in the assessment of protected areas of Finland.

Section 2: Summary of Recommendations

In general, Finland's protected areas are well managed and well resourced, and with some exceptions they appear to be achieving their aims of conserving biodiversity. (We note that our attention was primarily on large designated protected areas and we were able to judge less about the efficacy of for instance small protected areas and the developing Natura 2000 network.)

The Finnish protected areas are in an enviable position compared with many of the world's protected area systems and should form a model that others can follow. Of course, this does not mean that Finland's protected areas are perfect and in the following document we have concentrated more on potential improvements than on a record of successes.

In the main text in Section 3, each assessment question is followed by recommendations; in this summary these are collected into ten suggested areas for action.

Ecosystem approaches

In line with recommendations of the Convention on Biological Diversity and in Europe from Natura 2000, we recommend that at the stage of developing the next vision in 2007, Finland's protected areas need to stretch out consciously into the rest of the land and water mosaic by developing more integrated landscape plans for conservation. Particularly in the south, where individual protected areas are not large enough to sustain whole ecosystem processes, long-term success will depend upon working with surrounding land owners, probably often in voluntary agreements and with a degree of compromise, to create effective buffer zones, transition zones, corridors and networks. Such approaches might best be addressed by a high-level policy paper to help to implement the **Natura 2000** network, which should address, as necessary, innovative partnerships with private landowners, tourist offices, local communities and other state land managers and proposals for capacity building to achieve the Natura 2000 vision.

Björköby, Kvarken Archipelago in Western Finland. The archipelago area is a mosaic of state and privately-owned lands and waters in which the NHS, the regional environment authorities and local communities are working closely together to find acceptable and sustainable ways to preserve both natural and cultural heritage of the whole area regardless of land use status. The Kvarken area has also recently been nominated for inclusion in the World Heritage List for its unique geological features, the DeGeer moraines, which can been seen as narrow land strips rising from the water. (Photo: Arto Hämäläinen)

System planning

Planning is expensive and time-consuming and we are reluctant to propose endless new plans. But our review has suggested that some key issues do now require coordinated national plans. Two key national strategies that we believe are now required would address **invasive species** and **climate change**, and in addition we suggest that the NHS should carry out a **gap analysis of threatened species** to see, if all *Red Data Book* species are being adequately addressed by current conservation actions. Metsähallitus Natural Heritage Services has a central role in this system planning as a partner with the Ministry of the Environment and other relevant organisations, such as the Finnish Environment Institute. The resources currently devoted to planning and management could be rendered more effective, if there was a stronger culture and commitment to adaptive management. A clearer cycle of planning, management action, monitoring and review leading to refinement of plans and management action will better acknowledge the dynamic nature of the systems being managed and entrench a responsive approach in park management operations. On a more minor note, we support the NHS plans for an internal strategy review of publishing.

Lesser White-fronted Goose *(Anser erythropus)*. Most threatened of the native birds in the Nordic counties, only 30–50 nesting pairs are left. (Photo: Markus Varesvuo)

Site planning

Management planning is currently falling behind schedule, perhaps particularly for large Natura 2000 sites and in private protected areas, and we therefore recommend some targets and milestones are set to finish and continually update this process. One important element should be **a risk assessment** so that planning focuses on protected areas with the greatest need rather than simply updating planning in a mechanical process. A stronger commitment to adaptive management, linked to a state of the parks reporting system would enhance site planning and management.

Conservation outcomes

Most rare or threatened species appear to be stable or increasing within protected areas, although there are exceptions, such as the Arctic Fox and Lesser White-fronted Goose, and populations of some key species continue to decline overall in the country as a whole. Some habitats are also declining including eskers and shore habitats, which have perhaps missed out because of the emphasis on mires and old-growth forests. In general we support the trade-offs that have been made between reindeer herding and hunting and protection although we suggest that in the longer term more efforts are needed to reduce the impacts of overgrazing in the far north. We recommend exploring the benefits of voluntary schemes linked to incentives such as **organic certification** for wild reindeer meat, which might increase market share and price. We suggest looking into options for introducing more strictly protected areas where **hunting and fishing** are prohibited, particularly in national parks and other protected areas with many visitors. We also recommend that the options of expanding the compensation scheme used for Golden Eagles be investigated for some other endangered species, such as bears, wolverines and seals. In the south, conservation is being boosted by many new reserves but these are mainly small and we strongly recommend that they need to be incorporated into adaptive management regimes and ecosystem approaches as outlined above.

Community outcomes

A growing number of communities appear to be working with and supporting protected areas through municipality partnerships and links with local entrepreneurs. We were particularly pleased to see the level of cooperation between Metsähallitus NHS and the Sámi people in the far north and stress the importance of continuing to involve the Sámi in the decision-making process. There is, however, still clearly a mismatch between the general enthusiasm for increasing tourism and continuing antipathy towards protected areas in some places and we recommend that specific efforts are made to build the arguments for protection with concerned rural local communities.

Visitor outcomes

In general visitors are supportive of Metsähallitus Natural Heritage Services. Our only real recommendation is that perhaps greater emphasis might be given to looking at ways of reducing visitor impacts through for instance firewood use, partly through explaining more clearly the costs of supplying firewood and perhaps by sourcing from beyond the park itself.

Finances

Generally the level of support provided by the Finnish government is good compared to other countries. However, we note that staffing levels are quite lean, giving rise to disquiet from many protected area staff members, particularly relating to the level of new land acquired and new responsibilities, including especially a new or expanded role in protection of cultural sites. There is also some imbalance between the staff number and resources between the southern and northern regions, which may have some impact in the future when the NHS takes responsibility for numerous new areas in the south. We recommend further exploration of options for private sponsorship, including voluntary agreements and the support of private protected areas as part of the wider ecosystem approach. We also suggest that in the annual audits currently carried out resources

Fire wood for visitors, Ruunaa Nature Reserve. Wood provision is a major undertaking for NHS field staff. Logistics are planned to minimize environmental effects, by transportation during winter time for example. (Photo: Auvo Sapattinen)

should be checked against delivery on objectives, including checking the proportion of the budget spent on specific conservation activities.

Global role

The international work of the Natural Heritage Services is of high quality although not fully comprehended by all staff and we therefore recommend some internal capacity building in terms not only of the role that international work plays but also of the global and regional significance of particular conservation actions within Finland. Better understanding of, for instance, the Convention on Biological Diversity targets and the objectives of Natura 2000, would make the day to day work of staff more meaningful.

Assessment

The level of ecological assessment is very good, cultural assessment still needs further development. We recommend some work to place the various assessment systems into a coherent framework, perhaps in the form of a suite of key indicators that together could sum up biodiversity and cultural outcomes in Finnish protected areas: much of these data are already collected and would simply need to be systematised and assessed.

State of the Parks

More generally, we propose that the excellent information currently available is rather scattered and not analysed as a whole to build up a picture of management effectiveness in Finland and support a culture of adaptive management, particularly as it relates to conservation outcomes. We therefore recommend the development of a *State of the Parks* report that would be published periodically (for example once every five years) to collect and analyse this information and report it in an accessible form. Some initial thoughts on this are presented in Section 4.

Ancient labyrinth formation, Eastern Gulf of Finland National Park. Prehistoric and historic archaeological remains or ancient relics as well as shipwrecks are part of the cultural heritage of Finland. Nearly 2000 sites are already registered in areas administered by Metsähallitus. (Photo: Hannu Ormio)

Section 3: Results of the Assessment

The following section summarises key results and recommendations, based around the questions that formed the core of the assessment. A summary of the recommendations is presented in Section 2, which also draws them together into a more coherent whole. The questions in this Section are laid out following the framework developed by the IUCN WCPA (see Fig. 1).

WCPA framework section 1: Context

Question 1.1: Is there a clearly articulated national vision for the on-going development and management of the Finnish protected area system?

Overview – Good to very good
There is a clearly articulated vision for the development and management of the Finnish protected areas system. However it is not necessarily shared by all stakeholders, either inside or (to a greater extent) outside Metsähallitus NHS, and this may be hampering the wider aspects of protected area management, including implementation of Natura 2000. The vision provides an adequate basis for work until 2007, when the current programme for implementation of PA programmes comes to an end; at this stage it will need to be revised.

Background and issues
The national vision for the Finnish protected areas system is a science-based approach drawing on: a National action plan for biodiversity (Kangas et al. 1998); international agreements including particularly the Convention on Biological Diversity; and EU objectives. It aims to conserve biodiversity by developing an ecological network, with a protected area network at its core. Within Metsähallitus NHS, over fifty people actively took part in developing the vision and another hundred were consulted. It is implemented through objective-based plans that run until 2007, after which there is no clear vision as to how the protected area network will be developed. The vision has also embraced several time-limited regional or biome-specific action plans including: the Biodiversity Assessment of the Protected Area System 1997–1999 (SAVA); the METSO Action Programme 2003–2007 to protect forest biodiversity in southern Finland (Anon. 2002b); the National VELMU Inventory of Underwater Coastal Habitats based on the Baltic Sea Protection Programme (Anon. 2002c); the VILMAT Action Plan to develop nature tourism and recreational use of natural areas (Anon. 2002d). For more details on these programmes, see pp. 30–31.

Whilst the national vision appears to have general support within the NHS and other parts of Metsähallitus, different opinions lead to some internal tension between the priorities of biodiversity conservation and sustainable development (although such tensions can also be a positive source of lateral thinking and innovation). Some staff members also appear to have limited understanding of the wider context of their work. More seriously, there also seem to be some differences in the vision followed by the NHS and the opinions of the two controlling institutions, the Ministry of the Environment and the Ministry of Agriculture and Forestry (and also possibly *between* these two ministries) and this may cause implementation problems. At a governmental level, we note that Natura 2000 is apparently not being developed as a truly integrated activity but tends to be seen as purely a matter for the Ministry of the Environment; indeed it may be resented by some government departments. This reinforces our impression that implementation of Natura 2000 is sometimes approached as a matter of fulfilling the *words* of the Directive rather than by embracing the underlying *philosophy*. We return to this below. The relatively short life of the current programme gives a chance to revisit the vision after 2007. We return later to the question of whether the current vision is the best for the NHS.

Conclusions
The national vision is clear and comprehensive and provides an impressive basis for the protected areas work of Metsähallitus NHS. There

National Programmes to Protect Biodiversity and Develop Nature Tourism

BIODIVERSITY PROGRAMME National Action Plan for Biological Diversity in Finland 1997–2005

In 1996 the Ministry of the Environment appointed a National Commission for Biological Diversity, comprising a wide body of representatives from all ministries, key sectors of trade and industry, as well as environmental organizations. The Commission drafted Finland's national action plan for biological diversity for the period 1997–2005. The action plan was formulated in line with the provisions of EU nature conservation directives and the obligations laid down in the Convention on Biological Diversity and other international agreements.

The biodiversity action plan set down objectives for

- required legislative reforms
- incorporation of biodiversity in the daily routine of administration, trade and industry
- economic instruments and other incentives
- maintenance and use of biodiversity at local and regional levels
- nature conservation
- regulation of foreign stocks and non-native species
- protecting the status of indigenous peoples
- education, public awareness, training and information
- research, monitoring and information systems
- domestic and international cooperation.

A key goal in the implementation of the programme has been to safeguard Finland's biological diversity by preventing the diminishment and genetic depletion of habitats and natural organisms. A further aim was to create jobs and promote business and industry. The assessment of habitats and species as well as evaluation of the effectiveness of the protected area network have a significant role in the Finnish biodiversity programme. The development of nature tourism is seen to have considerable potential in creating business and employment.

Follow-up reports on the progress of reaching goals of the biodiversity programme have been compiled in 1997–1999 and 2000–2001. A final report will be drawn up and a new programme for 2005–2010 will be drafted in 2005.

SAVA Biodiversity Assessment of the Finnish Protected Area System

Many biodiversity aspects of the protected area system were systematically assessed by the SAVA project in 1997–1999. Studies were carried out by the Finnish Environment Institute particularly with respect to forests and mires, forest-dwelling species and later also to inland waters. The SAVA project identified some critical habitats and structural elements which are important from the viewpoint of biodiversity, particularly in the forests of southern Finland. These have been taken into account in proposed actions of the METSO Programme.

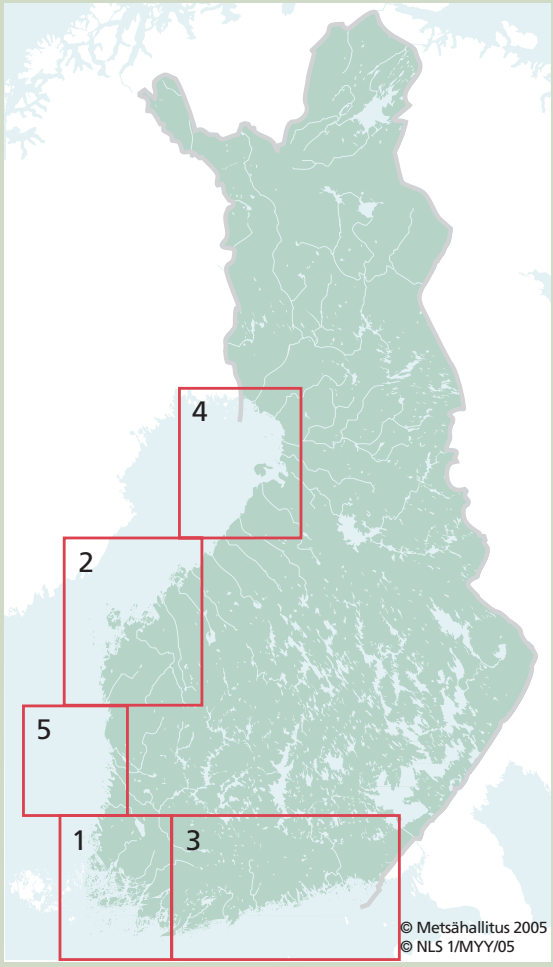
METSO Forest Biodiversity Programme for Southern Finland 2003–2007

The METSO is an action programme to improve protection of biodiversity in forests in southern Finland, where the proportion of protected forests is small compared to northern Finland. The programme was prepared in an open process including the entire forest sector, environment administration and wide range of NGOs. It is jointly coordinated by the Ministries of the Environment and of Agriculture and Forestry. METSO contains pilot programmes to test new voluntary means for land owners to protect forest biodiversity. The action programme also includes collection of basic habitat and species information on protected areas as well as extensive restoration and management of forested habitats. Metsähallitus has a central role in these activities, together with the regional forest and environment centres. METSO is largely funded by the government and is supported by an extensive research programme.

VELMU Finnish Inventory Programme for Underwater Marine Environment 2004–2010

The Finnish Government made a decision-in-principle on the Baltic Sea Protection Programme in 2002. It contains a major set of measures to improve the state of the Baltic Sea and protect marine life. To be able to evaluate progress it is essential to have data on the present state of the environment and status of biodiversity.

The VELMU inventory programme aims at collecting basic information on underwater habitats and species diversity on the Finnish coast. This data will be used for natural resource planning as well as nature conservation and management. Data is also essential to fulfil international reporting commitments. The program is a cooperation between six Finnish ministries. Metsähallitus is one of the key organisations involved and is following its own inventory programme MERLIN in state waters congruently with VELMU. Inventories were started in the southwestern Archipelago Sea and will progress gradually to other coastal regions in the Kvarken area, the Gulf of Finland, the Bothnian Bay and the Bothnian Sea during 2005–2010.



VELMU underwater habitats inventory programme 2004–2010. The programme extends progressively from one coastal area to the next. 1. Archipelago Sea, 2. Kvarken, 3. Gulf of Finland, 4. Bothnian Bay, 5. Bothnian Sea.

VILMAT Action Plan to Develop Nature Tourism and Recreational Use of Natural Areas 2003–2010

The VILMAT Action Plan aims at promoting development of nature tourism and outdoor recreation to double the number of jobs in the field by 2010. Metsähallitus has drawn up plans to develop the recreational and nature tourism services in the state-administered protected areas, public waters and recreation forests. The protected areas have been categorized and grouped regionally to form centres of national and local development. Principles for Sustainable Nature Tourism in Protected Areas have been formulated and are used as tool in partnerships with entrepreneurs. Criteria and indicators to measure sustainable use are being developed. Actions aim to increase visitor numbers without risking nature or culture values.

Sources

Kangas, P. et al. (eds.) 1998: National action plan for biodiversity in Finland 1997–2005. – Ministry of the Environment, Helsinki. 127 pp.

Anon 2000: Forest protection in Southern Finland and Ostrobothnia. Report of the Working group on the need for forest protection in southern Finland and Ostrobothnia. – The Finnish Environment 437. 284 pp.

Anon 2002a: Action plan for protection of biodiversity in forests of Southern Finland and Ostrobothnia (METSO). – The Finnish Environment 583. 56 pp.

Anon 2002b: Finland's programme for the protection of the Baltic Sea. The Finnish Government's decision-in-principle. – The Finnish Environment 569. 96 pp.

Anon 2002c: Programme for developing recreation in the wild and nature tourism. Working group report (VILMAT). – The Finnish Environment 535. 48 pp.

may need to be some capacity building to ensure that the wider aspects are understood throughout the NHS and some further work to integrate this into the wider programmes of both the Ministries of the Environment and of Agriculture and Forestry.

Recommendations

Continue with the current vision until 2007. Involve key stakeholders from the Ministries of the Environment, of Agriculture and Forestry and of Finance, in development of a post-2007 vision, which should include greater emphasis on an ecosystem approach, as promoted by the Convention on Biological Diversity. In this case the focus should be on how protected areas relate to the wider landscape, particularly when they adjoin other state forest land. Consideration should be given to monitoring staff attitudes towards and understanding of the vision every few years, perhaps in a sample of staff.

Question 1.2: Does the legislative and administrative framework adequately support the effective functioning of the protected area system?

Overview – Fair to good

The legislation for management within the statutory protected area network is quite strong, although some historical problems remain relating particularly to hunting and fishing, and enactment of legislation does not always keep pace with conservation action. Current legislation does not fully support the wider ecosystem approaches promoted by the NHS, for example, by providing a legal framework to complete the ecological network through sympathetic management in buffer zones and corridors. Some apparent inconsistencies, relating to hunting and mining, for example, may be having relatively little overall impact on biodiversity, but do have implications for other protected area values such as recreation.

Background and issues

Legislation exists to designate and manage protected areas in Finland. The statutes that concern protected area planning and management are well integrated and most national parks are also covered by regulations.

However, there are some shortfalls in legislation, partly due to historical anomalies and partly to enactment of existing legislation falling behind implementation of government conservation plans. There are significant differences between the Nature Conservation Acts and Decrees of 1923 and 1996, particularly concerning reindeer husbandry, hunting and mining, which means that Metsähallitus does not have legislative powers to control these activities in protected areas designated before 1996. There is also an ongoing debate about allowing hunting even in the national parks in the south. There is a backlog in finalising legal protection for some designated areas, particularly in the east of the country. Altogether 34 per cent of the land acquired for conservation by the state is still lacking legal status. This confusion is leading to degradation of some protected areas, particularly in Lapland, as a result of stocking reindeer above ecological carrying capacity and to a limited extent also through mining activity. Furthermore, areas outside statutory protected areas, such as conservation programme areas, hiking areas and state forests, are managed by the NHS according to the NHS *Principles of Protected Area Management* (Metsähallitus 2000 and 2004a), but without supporting legislation. Problems in designating water areas, mainly because of fishing rights, mean that most fresh and marine waters are excluded from protected areas causing some problems with respect to both access and management. A few state-owned protected areas continue to be managed by the Finnish Forest Research Institute: Koli National Park, Malla Strict Nature Reserve and Vesijako Strict Nature Reserve, as well as several small Nature Reserves. (Due to lack of time these protected areas were not thoroughly assessed during our work.) Private protected areas usually receive support for management costs from the Ministry of Environment, implemented by the Regional Environment Centres.

Ratification under Natura 2000 proposals, which would in theory provide some of that legislative backing, is too slow to keep pace with current conservation programmes. One result of

this is that the borders of Natura areas, which are generally larger than the existing protected area networks, are not systematically visible on public maps. In some cases key national park zonings are not marked, for instance on marine charts with respect to the Archipelago National Park, so that enforcement of exclusion zones is made more difficult. Successive designations have sometimes resulted in variable boundaries around protected areas, which can further hamper management.

The fact that the direction and financing of the NHS comes from two different ministries creates both problems and opportunities. It means that there is in theory an opportunity to mainstream conservation into other forms of land and water use, but in practice clearly causes some strategic and operational problems. In particular there is some overlap and confusion between the roles of Metsähallitus NHS and the Regional Environment Centres (RECs) in certain regions, particularly with respect to management of Natura 2000 sites. Currently for instance Natura 2000 inventory data is maintained by the environment administration – the Natura 2000 area authority – but needed by the NHS in its role as responsible manager. More generally, Natura 2000 provides an opportunity to widen the objectives of the protected area system into the wider landscape and seascape but at present some areas of government apparently resent this and regard the process as a threat rather than an opportunity. Other aspects of EU legislation that might directly affect protected areas, include those relating to old-growth forests, and the Water Framework Directive (2000/60/EC) that are currently not being addressed well enough.

Recommendations

Potential impacts of some of the apparent anomalies in management, particularly the inability of the NHS under current legislation to control effectively some of the key activities in protected areas (such as hunting or mining) need to be explicitly monitored and reported upon with a view to changing legislation if necessary. The Ministry of Environment might consider further clarification of roles regarding the implementation of Natura 2000.

Question 1.3: Is there a cohesive and nationally coordinated approach to protected area management?

Overview – Good to very good

Current protected area management follows a coherent national approach according to agreed principles. Current changes and new opportunities may mean that these approaches should be refined in the future. Further capacity building might be attempted with respect to understanding the role of Finland's protected areas within a broader ecoregional or global strategy.

Background and issues

Metsähallitus National Heritage Service administers statutory protected areas on state-owned land with the exception of those still managed by the Finnish Forest Research Institute. All protected areas are managed according to agreed *Principles of Protected Areas Management in Finland*, which is a publicly available document printed in Finnish and English (Metsähallitus 2004a and 2000). The country is divided into six regions for management of the NHS, with a seventh central office in Vantaa assuring continuity (see Fig. 4). There appears to be a high level of understanding about current practices and a similarly high level of commitment amongst staff.

Changing conditions, and in particular the development of a Natura 2000 network in Finland, mean that some of these principles need to be altered and broadened and we found variable understanding amongst staff about the implications of these changes. In addition, there was also some variation in understanding about how an individual protected area might fit into a national or an international conservation strategy. The excellent work on transboundary issues is mirrored by a clear understanding amongst some staff but in other cases there was little distinction, say, between nationally and internationally threatened species. Promotion of sustainable management will also be increasingly important: while this does not necessarily help the most threatened species (which still require protection) it can help prevent other species from declining to critical levels.

Recommendations

Further work will be needed to ensure that the sound strategy currently in place is widened with respect to Natura 2000 and perhaps the need for capacity building of staff with respect to the role of Finland's protected area network in an international as well as a national setting.

Question 1.4: Is transboundary and regional cooperation established and maintained in a manner which supports effective management of Finnish protected areas?

Overview – Good to very good

The Natural Heritage Services is running an active and impressive international programme including regional capacity building and policy initiatives; development of transboundary protected areas; and wider international cooperation. Lessons learned within Metsähallitus Natural Heritage Services are being transferred across the world.

Background and issues

Metsähallitus NHS has an international programme with three main objectives:

- Protection and management of boreal habitats and biodiversity throughout the Fennoscandian region
- Improvement of international protected area policy
- Promotion of conservation values more generally with partner countries around the world

There is an active programme of transboundary cooperation, which involves all neighbouring countries but places a particular emphasis on cooperation with Russia along the so-called Fennoscandian Green Belt, which involves development of several transboundary protected areas, which aim to harmonise management and monitoring, exchange staff and experience and in some cases Finland also provides financial and other forms of resources to Russian partners. There are already four transboundary initiatives along the Finnish-Russian border including twinned Man and the Biosphere reserves and this cooperation has already helped to establish two new protected areas on the Russian side. (See Fig. 10.)

There has also been cooperation with neighbours in Norway and Sweden and long-term cooperation with Estonia particularly in relation to the management of the Baltic Sea and to cooperation on protected area management including hosting joint meetings and seminars. Cooperation with Sweden has received relatively little attention compared with other neighbouring countries although

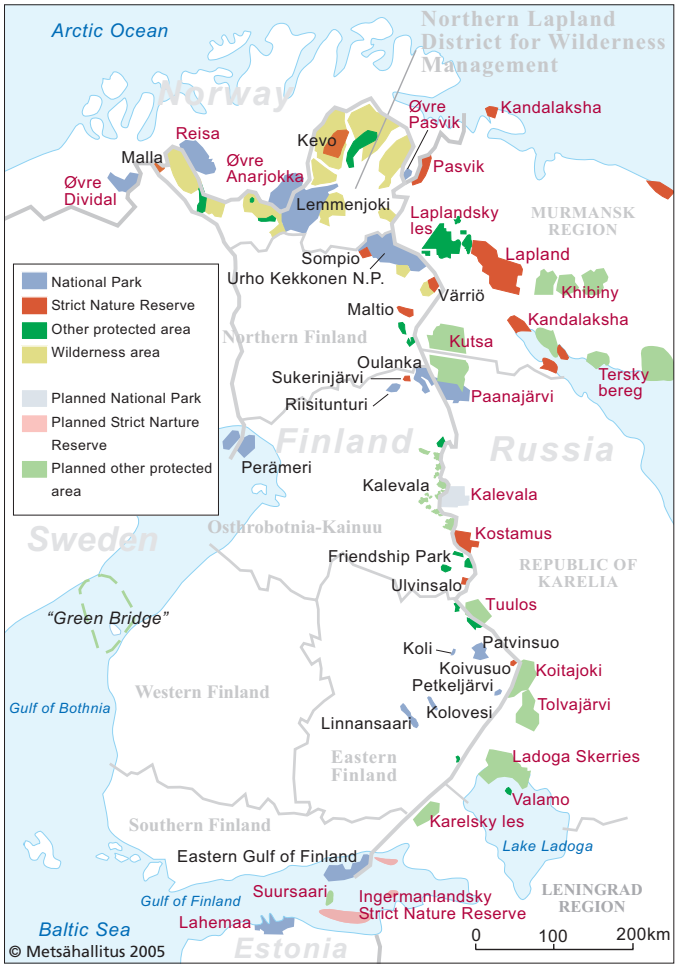


Figure 10. Transboundary cooperation with neighbouring countries. A string of transboundary parks form the backbone in the protection of Fennoscandian boreal nature. In the south-eastern archipelago and on the eastern border Finland has cooperation with Russia, in the north Barents cooperation also with Norway, and in the western archipelago Green Bridge cooperation with Sweden. Cooperation with Estonia in the south is also active.

plans for a transboundary natural World Heritage site are being developed in the Kvarken area in western Finland (see photo on page 25).

Finland recently initiated a Nordic-Baltic Section of EUROPARC (see Fig. 11), which it sees as the main tool for further cooperation in the region, but works with many other European and global organisations including particularly the EU and the IUCN World Commission on Protected Areas. EU funding (through Life Nature, ERDF, Tacis and Interreg) has boosted both regional and transboundary cooperation and facilitated new kinds of partnerships. There are also commitments to guarantee the coherence of the Natura 2000 network, which implies work across national borders particularly with other EU member states that share the same bio-geographic regions. Finland hosts two such regions, the Boreal region and the Alpine region.

Metsähallitus NHS plays an active role in planning and capacity building in protected area management in other countries, usually as a result of specific requests, and has long term involvement in Hunan, China (Högmander & Gui 2000), Namibia and starting in South Korea. NHS staff members are encouraged to take secondments to other countries for periods ranging from a few weeks to 1–2 years. Many take the option of spending a few weeks out of the country but it remains difficult to encourage people to apply for longer term postings.

Recommendations

This aspect of NHS work is clearly effective. In line with the aim of promoting protected areas within a global context, it might be worthwhile for key staff to particularly engage with the World Commission on Protected Areas' task force on transboundary protected areas.

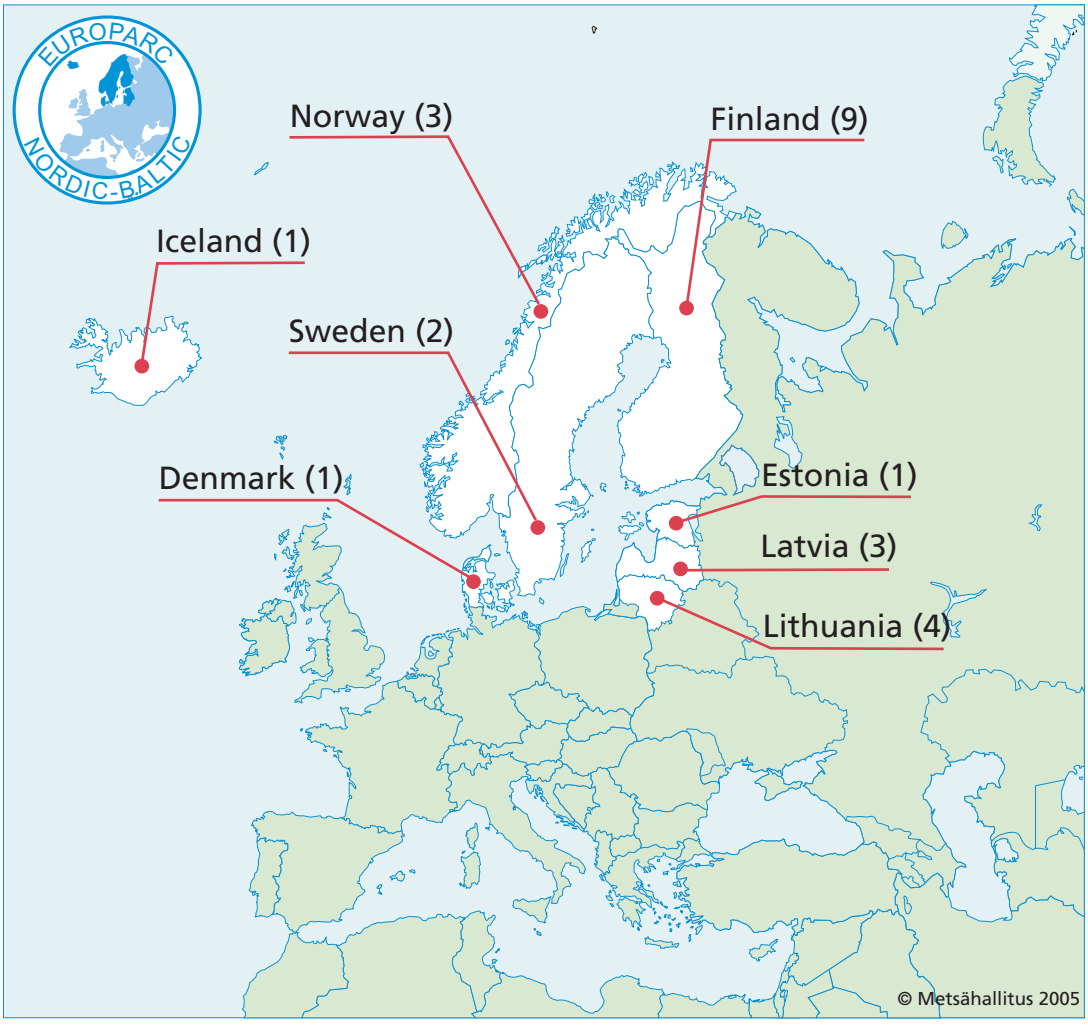


Figure 11. EUROPARC cooperation in the Nordic-Baltic Section. The section was established in 2003 and is presently coordinated by Metsähallitus Natural Heritage Services. At the moment the cooperation involves 24 members from Finland, Sweden, Norway, Denmark, Iceland, Estonia, Latvia, and Lithuania. The numbers after state names refer to members in each country.

Question 1.5: Are the values of the protected area system well documented, assessed and monitored?

Overview – Good to very good
Understanding of biodiversity values is generally high although further work is needed to assess cultural values; habitat surveys also need to be completed. Monitoring is currently good although we suggest some strategic thinking about the most cost effective indicators might be needed.

Background and issues
Metsähallitus NHS spends considerable time and resources on monitoring key elements of biodiversity. "Research" within the NHS itself consists mainly of monitoring and primary data collection. We strongly support the agency's policy of not carrying out all research itself but rather in coordinating this between multiple partners. The commitment to monitoring is also noted including starting monitoring *before* interventions such as restoration.

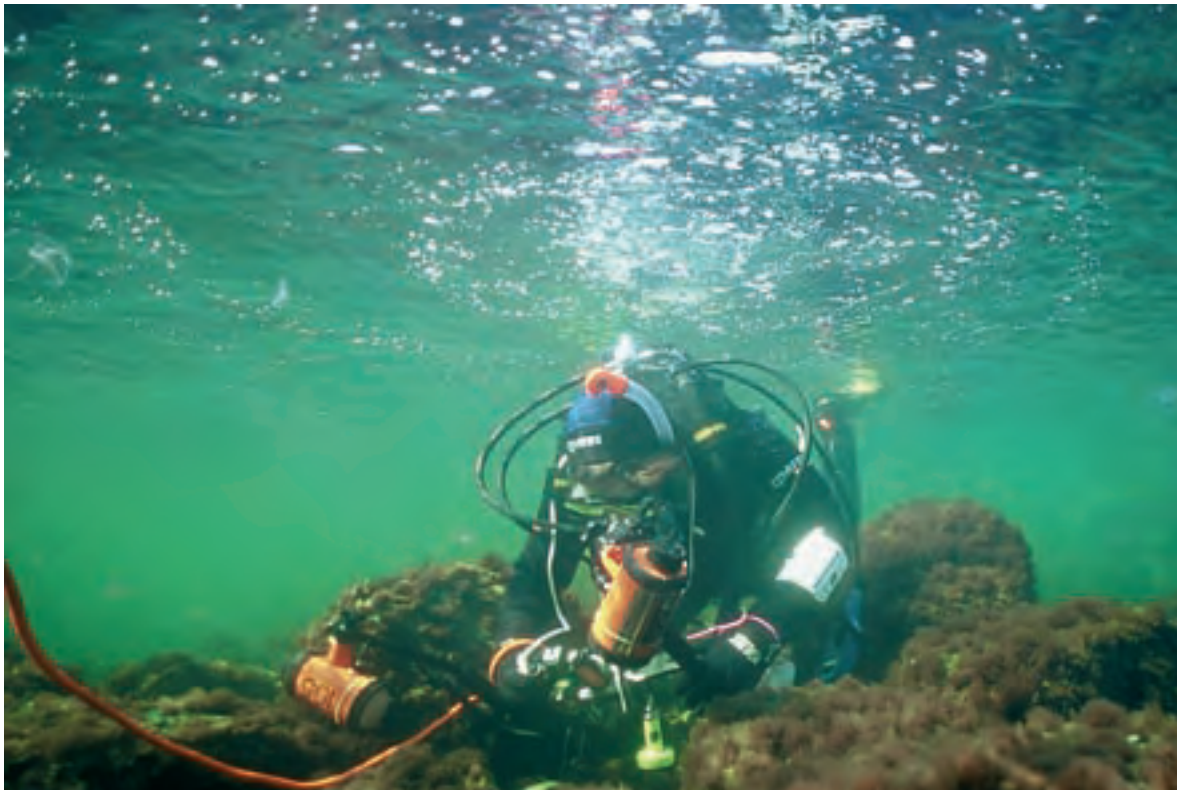
A special Scientific Advisory Board helps to guide prioritisation of research needs within the NHS and to find partners to carry this research out in practice: this group includes wide representation although there is no international representation and some experts to reflect broader regional research priorities (and to avoid duplication) might be useful.

Some flagship and key species are monitored on an annual basis, for instance the Saimaa Ringed Seal subspecies (*Phoca hispida saimensis*), the Golden Eagle (*Aquila chrysaetos*) and the White-backed Woodpecker (*Dendrocopos leucotos*). In some protected areas, for instance Oulanka National Park, plant species listed on the EU Habitat Directive are monitored annually, in some cases with monitoring of individual specimens and in the case of more numerous species by sample quadrats. Understanding of the status of biological diversity is comparatively high throughout Finland and there are standardised monitoring systems in place in 40 protected areas.

We recognise, however, that although habitat surveys have progressed rapidly since 2001, half the protected areas have still not had inventories carried out and this work needs to continue. We note that it is hoped to have virtually all the METSO area covered by the end of 2006.

Cultural studies are still lagging behind inventories of biotopes and species and only made up 6 per cent of the studies undertaken in 2003. In the past, inventories have been carried out of nationally valuable landscape areas, nationally valuable cultural historical environments and nationally significant prehistoric protection sites and a significant proportion of these sites and other historically important buildings and artefacts fall within Metsähallitus managed state-owned land. This responsibility is currently increasing, both because more sites are coming with the new protected areas and due to extra responsibility for archaeological sites being transferred to Metsähallitus NHS. A strategy for assessment and management of cultural heritage is therefore required,

Saimaa Ringed Seal (*Phoca hispida saimensis*), Linnansaari National Park. This endemic subspecies is extremely endangered with less than 300 individuals remaining in the eastern lake area. Metsähallitus is responsible for coordinating efforts to save the population both inside and outside of protected areas. (Photo: Jouni Koskela)



Underwater inventory, Archipelago National Park. National marine inventory programme VELMU started out on the southwestern coast and will progress to the western and southern coasts and continue until 2010. Metsähallitus is one of the many counterparts participating in the programme. (Photo: Jan Ekebom)

including an updated and comprehensive inventory of sites identifying necessary repair and renovation and their potential role in tourism. Resources are currently needed and new partnerships are being developed, for instance, through the use of day release prisoners for maintenance of cultural sites.

There is some doubt amongst stakeholders about whether inventory information is always complete enough to make decisions about land acquisition for protection purposes. These issues have been the cause of a great number of disputes with private land owners in the Natura 2000 process. Time is gradually reducing this resistance and access to better information is helping to clarify past disputes.

Whilst the monitoring effort is impressive, we are a little concerned the financing of monitoring may be subjected to budget constraint in the future (a common occurrence throughout the world) and there is a need to prioritise indicators to target potentially reduced resources. There may be an argument for development of an agency-wide review of and strategy for monitoring which identifies priorities for monitoring programmes so that core monitoring responsibilities are identified and safeguarded over the longer term (including international commitments, most significant species, initial baseline monitoring etc). Such a strategy also needs to link monitoring directly to conservation or cultural aims, so that more of the monitoring data than at present is used directly to set strategies, work plans and activities within the NHS (thus also increasing the incentive for good monitoring).

Recommendations

Assessments of nature conservation values should be completed, and the databases for nature types and threatened species be up-dated with other relevant organisations. Both selected habitat types and species should be monitored at regular intervals, and a process be established for the selection of these (see also Question 6.2). The planned work on monitoring and documenting of cultural values is also highly important. Results of these activities should be reported in the *State of the Parks* report.

Question 1.6: Are the threats to protected area system values well documented and assessed?

Overview – Fair to good
Overall threat analysis of the protected area system has not been carried out in the past although individual threats seem to be well understood and threat analysis included in wilderness area plans. This situation is apparently changing and there are plans to address threat analysis more comprehensively: we support this development. Some actual and potential threats have been assessed in the development of this report and are summarised below.

Background and issues
Individual threats to protected areas have not in the past been systematically assessed throughout the country and the RAPPAM assessment carried out for the current assessment is therefore the first, very superficial nation-wide survey (see summary for details, Annex 2). However, the new *Guidelines For Land Use And Management Planning* (Metsähallitus 2004b) include threats analyses and these will therefore now be carried out for all protected areas. Threat analysis has also been included in wilderness area plans (where particular issues relate to reindeer herding, hunting by local people and snowmobile use).

Potential threats are dealt with by legislation, regulations, land use planning, and principles of management, land use agreements and permits (hunting, fishing, sample gathering, traffic and tourism) along with guidance of the public. These are covered in the *Principles of Protected Area Management*. The newest tools in addressing potential threats (from visitation) are the *Principles of Sustainable Tourism* published by the Natural Heritage Services (Metsahallitus 2004c) and indicators of sustainable recreation use.

The most serious threats to biodiversity in protected areas are often external (i.e. on surrounding land or water but impacting through edge effects, pollution etc.) and for those protected areas within the Natura 2000 network (the majority) legislation now requires an obligatory environmental impact assessment for all major projects and action plans in the vicinity of the protected area, including for relevant NHS plans.

Hunting is controversial, because it would normally be banned in protected areas in most countries and several of the hunted species have low populations. However, most uses fall within the broad category of indigenous or local use (which is a recognised exception in protected areas) and are monitored. Populations of most large mammals are currently expanding although continued pressure from humans may be limiting the range of some species. Wolverine numbers, although stable overall and expanding in some regions, are almost certainly being suppressed in others as a result of illegal hunting. According to the Finnish Game and Fisheries Research Institute (Kojola & Määttä 2004), the minimum population size of the brown bear was estimated to be 800, of the wolf 150, of the lynx 920 and of the wolverine 125 individuals at the end of 2003.

There is currently no national strategy on invasive species and this may be adversely affecting the NHS' role in addressing problem species, because interventions will often only be successful, if it is coordinated across the whole landscape and seascape. There are about 600 introduced

American Mink (*Mustela vison*). The mink has escaped from fur breeders and has invaded much of the southern and western coast. It causes great harm to bird communities and is now being trapped and exterminated in protected areas jointly with local hunters. (Photo: Jouko Högmander)

or invasive species in Finland (Weidema 2000). Invasive species such as the American mink and Canadian beaver are currently altering the ecology of protected areas and in some cases reducing their values. Increased oil transportation in the Gulf of Finland is also increasing risks of invasive marine species. Control measures can reduce the problem. For example the success in building bird numbers through mink eradication in areas of the Archipelago National Park and Kvarken shows that coordinated action can make a real difference to fragile biodiversity. The problem of invasive plant species, or in some cases dominant sub-species, may require further attention. In the short term an analysis and classification of endangered species is needed to help draw together a clear strategy for control including a systematic approach to the preparation of control programmes based on the level of threat to biodiversity values posed by particular species and in particular locations. The transboundary and future threats of invasive species should be included in such an analysis. Coordination of this work may lie outside the NHS but the agency should play a key role in development and implementation of the strategy, in cooperation with the Ministry of the Environment (see Nummi 2000). A Planta Europea Strategy for conservation of Finnish flora is currently being drawn up by the NHS and the Finnish Environment Institute.

Climate change is having measurable impacts on protected areas in many parts of the world and some boreal and marine habitats in Finland may be particularly under threat. We note that there is no comprehensive strategy addressing this and recommend that one be developed.

Plans for tourism could have a significant impact on protected area values, particularly in the far north, and we suggest that some further analysis of these impacts, and of ways in which they might be mitigated, is carried out. The current objective of doubling tourism within protected areas is noted and is probably achievable without undue environmental impact. However, this will only be possible in the context of better assessment of likely impacts and the objective therefore needs to be accompanied by a strategy that matches planned increases to the carrying capacity of the site and acknowledges both the advantages and stresses that such a change would entail.

The largest threat to protected areas in the long term, particularly in the south of the country, may well be isolation, and the intensive land-uses in on surrounding lands (e.g. Kallio 2001). Although management guidelines and regulations of commercial forest management have improved considerably over the past decade, management in most forests remains intense and close to 90 per cent of the annual increment continues to be cut. This reinforces our previous point that protected areas need to be assessed within the wider context of the Finnish landscape and perhaps also the broader Fennoscandian ecoregion and one important threat assessment that is currently missing relates to fragmentation and connectiv-

Visible trail erosion, Pieni Karhunkierros Trail, Oulanka National Park. Monitoring of visitor impacts, especially in popular parts of protected areas, is becoming increasingly important. Metsähallitus is working to incorporate relevant indicators into the management planning process. (Photo: Nigel Dudley)

ity of the reserves network. It also suggests that in some cases a measure of ecological restoration will be needed to buffer and to protect some small reserves.

The biggest threats to cultural values are limited appreciation of the importance of particular sites and artefacts and in some cases lack of maintenance. We have already outlined the need for a complete inventory of cultural values, as planned by the NHS, and this will help address the first problem; better maintenance requires sufficient resources in terms of personnel and management funds. Nonetheless, the current level of stress to these areas is not acute.

Recommendations

We recommend greater attention to threats analysis, regular auditing of the activities of Metsähallitus NHS, and development of two specific national strategies (both of which would need input from the NHS and other government agencies and non-governmental partners):

- A national strategy for **invasive species**, in terrestrial, freshwater and marine systems, including a risk assessment and prioritisation for action; and
- A national strategy addressing threats to protected areas from **climate change** including mitigation strategies where possible.

Question 1.7: Do Finnish protected area management objectives harmonise with Natura 2000 objectives?

Overview – Fair

Finland is taking a slightly unusual approach to Natura 2000 by focusing on purchase of sites rather than working with existing landowners. We suggest the development of Natura 2000 Master Plans to ensure that the objectives of the European Union are met and also mesh with wider national and regional conservation strategies.

Background and issues

The Finnish protected area network is focused on the main habitat types and species in Finland. Most Finnish protected areas are scheduled to have their own management plan in the next few years. However, due to community concerns about adopting the Natura 2000 lists, not all the objectives of the European Union's Habitats and Birds Directives have been fully incorporated into protected area management objectives, with respect to conservation, restoration, monitoring etc.

There are currently two philosophical frameworks regarding the implementation of Natura 2000. One model, followed by the majority of European countries, believes that the approach should be a broad planning framework that embraces both privately-owned land and public protected areas and other lands. The other model, followed by some of the Scandinavian countries, is based around protected areas on state-owned land.

Although most of the Natura 2000 sites have also been designated as protected areas there are some that are still not under Metsähallitus NHS statutory responsibility. Natura 2000 has a clear network approach at European and at national level. At the regional level, Natura 2000 master plans provide an opportunity to progress integrated landscape management focused on conservation outcomes rather than land tenure.

Other aspects that need further attention are the coherence of the Finnish Natura 2000 network with wider European experience and the establishment of strict protection regimes for species included in Annex IV of the Habitats Directive.

Recommendations

Natura 2000 requires an integrated approach to biodiversity conservation based around the principles of the ecosystem approach. Natura 2000 Master Plans, coordinated by the Ministry of Environment, should be prepared. As part of its contribution to the wider planning of Natura 2000, Metsähallitus NHS should ensure that the specific role of protected areas in achieving EU 2010 objectives related to biodiversity is clearly identified and documented.

Question 1.8: Do Finnish protected area management objectives harmonise with wider cultural objectives including those relating to the Sámi?

Overview – Good to very good

Management objectives are generally supported by the Sámi and in other areas considerable efforts have been made to integrate cultural developments with biodiversity and the former have sometimes provided an entry point for local stakeholders. However currently hunting and overgrazing are causing some tensions with NGOs and other stakeholders and we suggest some steps that might be taken to better integrate conservation and traditional lifestyles including options for adding value to reindeer herding.

Background and issues

The wider cultural objectives are well understood by the NHS management and include statutory obligations. All stakeholders, including the Sámi Parliament, are requested to comment officially on natural resource management plans and land use and management plans. Officials from the Sámi Parliament and the Association for Reindeer Herders in Finland gave strong support for the general level of cooperation and direction of policy that Metsähallitus NHS has taken.

There are serious attempts to address issues of cultural heritage in Lapland with respect to the Sámi people with a special website and nature trail and information material in the Sámi language. Siida – the Northern Lapland Nature Centre was planned and is maintained jointly with the Sámi Museum and has placed enormous emphasis on the interplay of natural and cultural values in the far north. Some historical cultural sites are also managed by Metsähallitus NHS in cooperation with the Sámi Museum and the Sámi Parliament and the agency will also take part in a project led by the Lapland Regional Environment Centre to draw up a Cultural Heritage Programme of the Sámi.

However there are still certainly disagreements with the Sámi about aspects of protected area management, many of which are rooted in long-standing debates about the state's right to control land, which is not accepted by the Sámi. Reindeer herding plays a critical role in Sámi culture and there is a statutory right to continue this, with the Ministry of Agriculture and Forestry being responsible for defining sustainable herd sizes (see Fig. 12 for reindeer husbandry and Sámi homeland areas). There has been some disagreement about exceeding the limits and there is certainly over-grazing in some national parks, although to a lesser extent than in some previous periods. Metsähallitus NHS, the Sámi and NGOs all agree that in the absence of wild populations some reindeer herding is essential in the protected areas and disputes are more about the level of herding and its potential long-term impacts on ground vegetation. There are also sometimes conflicts over illegal hunting, particularly of the wolverine. All conflicts in the Northern Lapland District for Wilderness Management are dealt with in regular meetings between Metsähallitus NHS and stakeholders. To avoid unnecessary confrontation, the District was transferred from the Forestry unit to the overall control of the NHS in 2001, although business sections are still governed by their own departments.

Siida – Northern Lapland Nature Centre, Inari. The centre is run jointly by Metsähallitus and the Sámi Museum and exhibits the centuries long interplay between man and nature in northern Lapland. (Photo: Matti Silvennoinen)

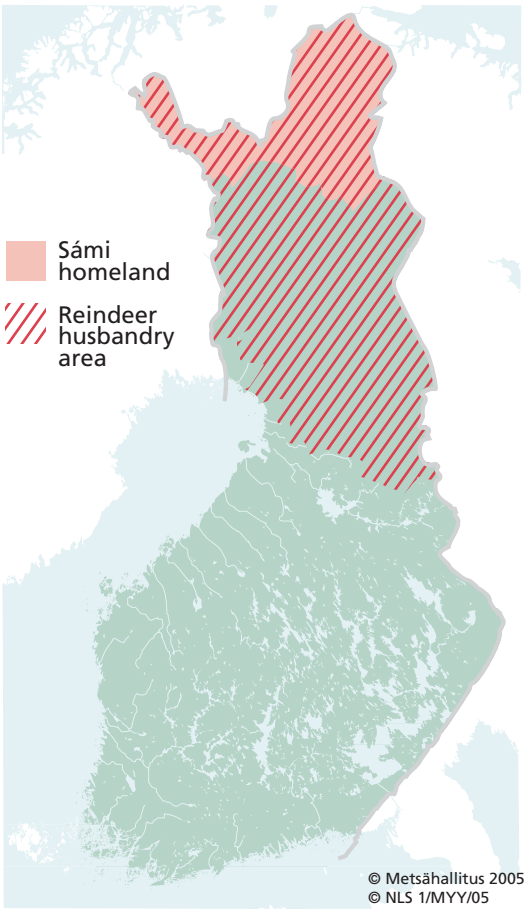


Figure 12. Reindeer husbandry and Sámi homeland areas in northern Finland. Of the ca. 7,000 Finnish Sámi some 4,000 live in the 35,000 km² homeland area, the rest have moved outside. The reindeer husbandry area covers 123,000 km², 36 % of the country. The whole Sámi land and reindeer husbandry area extend over all of northern Sweden and Norway as well as the Kola Peninsula in Russia.

Elsewhere, Metsähallitus NHS has made active efforts to integrate cultural and biological protection and this has sometimes acted as a bridgehead to local communities. For example, the Häme Visitor Centre, between Torronsuo and Liesjärvi National Parks, is managed jointly with the local municipalities and has been successful in drawing local people into more active engagement with protected areas.

The Habitats Directive is one of the tools designed by the EU to reach sustainable development. The main objective of the Natura 2000 network is to promote the maintenance of the EU biodiversity and the conservation measures prevail over other measures. However, the measures to be taken to implement the Habitats Directive shall take account of economic, social and cultural requirements and regional and local characteristics.

Recommendations

Many potential cultural conflicts have been avoided, particularly in the far north, but this may be at the expense of some damage to the protected area system and reindeer herding at the levels practised has clearly had a cost to nature values. We wonder if there would be options for looking at more innovative responses to this issue. Currently reindeer meat is valued relatively low and in addition northern reindeer herders have comparatively little access to the more lucrative markets in the south of the country. Options for some kind of green label for reindeer meat, perhaps through an organic standard or a standard under a forest management certification system such as the Forest Stewardship Council, could be linked to voluntary agreements on slightly reduced stocking levels but would compensate for this by opening up the region to the growing market for certified organic or free-range meat. Such an approach might have interest to any reindeer herders. Standards for wild meat already exist and have been successful in places.

Reindeer roundup site, Pallas-Ounastunturi National Park. Roundups for slaughter are part of traditional reindeer husbandry. Today they are often also a bloodless tourist attraction. (Photo: Lentokuva Vallas)

WCPA framework section 2: Planning

Question 2.1: Are protected areas identified and categorised in an organised system?

Overview – Good
Protected areas are categorised into a national system. For a highly developed protected area system Finland has only a fairly small proportion of its protected areas categorised into the international IUCN classification system (IUCN 1994), although this may be a conscious decision by Metsähallitus NHS. Some of the English translations of Finnish names may be misleading.

Background and issues
Finnish protected areas have all been categorized into a national system, which is defined in the Nature Conservation Act (1096/1996). The nature conservation programmes have been developed and have been carried through in a systematic way (see information on pages 16–17). Each programme is based on proposals made by a working group, which has considered the values of inventoried areas as well as land tenure and land use situations. The programmes have been ratified by a Council of State decision. Land acquisition is continuing for nature conservation by land purchase and exchange. The present programmes are to be completed by 2007. Establishment of statutory protected areas is likely to continue long after that.

Protected areas can be established outside of the agreed national conservation programmes. This does not often happen on state land, because the pressures for other kinds of land use especially in southern Finland are considerable. However, there are already a considerable number of private protected areas and once declared they have many of the same restrictions on land use and long-term security as protected areas on state land.

In Finland national hiking areas and wilderness areas are not considered to be fully protected areas, though their use is restricted and some play an important role in biodiversity conservation; it may be that under Natura 2000 this role will be more clearly defined. These areas are already an important part of the protected area system, especially the wilderness areas, as shown by the

Teijo Hiking Area. National hiking areas have been established primarily for recreation, but belong to the Natura 2000 network. (Photo: Tage Lampén)

RAPPAM analysis (Annex 2). While there is every indication that National Hiking Areas and other state-owned lands will ultimately be incorporated into the formal reserve system with more direct management by the Natural Heritage Service it would be useful if there was a formal process for routine review of the status and management regime for such areas every 5–10 years.

The Finnish PA categories do not entirely correspond with the IUCN categories. The categories are described in the publication *Principles of Protected Area Management in Finland* (Metsähallitus 2000 and 2004a), which sets out a systematic approach to guide day to day management operations. Given Finland's prominent role in IUCN and the World Commission on Protected Areas this mismatch is slightly surprising.

More significantly, some of the terms used for protected areas in Finland do not match well with international expectations: for example the term "strict nature reserve" used in areas where grazing is allowed is likely to be of concern to people used to a concept of strict nature reserves where such uses would be inimical. (In 1995, hunting was banned in all strict nature reserves with the exception of traditional Willow Grouse (*Lagopus lagopus lagopus*) trapping in Kevo Strict Nature Reserve, which is limited to a few Sámi people).

Recommendations

Consideration should be given to reviewing the terms used to describe protected areas in Finland and to seeing if more of these can be revised to match existing IUCN categories. In addition, and in light of current changes in the Finnish protected area network, it would be worth considering a formal review of the status and management regime for areas with high conservation values not currently managed as formal protected areas, every 5–10 years, to judge, if they should be incorporated within the protected area network or their official status otherwise modified.

Question 2.2: Are individual protected areas designed and established through a systematic and scientifically based criteria and process with a clearly articulated vision?

Overview – Good to very good

There is clearly a systematic process for selecting protected areas, which has developed over a number of years and is generally scientifically based.

Background and issues

The oldest national parks and other protected areas might have been established as much for their aesthetic values as biodiversity richness, but by virtue of protection have conserved much of their respective regional biodiversity. More recent protected areas have been selected on scientifically based criteria related to biodiversity and to the protection of particular habitats and species. Not all areas known to have biodiversity and/or culture values can be included within the protected area network because of land tenure conflicts. Some privately-owned areas have also lost many of their conservation values before protective management could be applied.

Natura 2000 designations for the Finnish network proposal were based on previous inventories backed up where necessary by new field inventories. The approach and criteria of "directive" inventories differed from the earlier ones. Because the total area that needed to be assessed was huge, the level of the data for all areas is not comparable throughout. More detailed habitat and species inventories are often still needed to identify ranges of target species and to verify earlier information. Selection of sites under legislation protecting old-growth forests has been systematic and subject to careful and critical scrutiny from NGOs.

The SAVA Project, the Working Group on the need for forest protection in southern Finland and Ostrobothnia (Anon. 2000), and the METSO Action Programme (to protect biodiversity in forests in southern Finland, the western parts of the Province of Oulu and the south-western region of the Province of Lapland, Anon. 2002b) identified some critical habitats and structural elements which are important from the viewpoint of biodiversity (especially in terms of threatened species), and which are underrepresented in the PA system in Southern Finland:

Habitats

– Natural forests and old-growth forests rich in decaying wood

– Spruce mires and birch-spruce mires, particularly herb-rich types
– Alluvial forests and wooded alder (*Alnus glutinosa*) swamps
– Herb-rich forests
– Exposed (SE, SW, S expositions) slopes of glacifluvial eskers and end moraines
– Wooded pastures and other wooded traditional rural biotopes

Structural elements
– Decaying wood
– Tall, old aspens
– Stands of southern broad-leaved deciduous trees (oak, ash, elm, lime, maple, hazel)
– Burnt tree stands

Furthermore, the on-going assessment on the state of the biological diversity in Finland and on the efficiency of the Finnish National Biodiversity Action Plan (1997–2005) will identify ecosystems and habitats in need of conservation and management measures on the basis of recent threat trends in the Finnish biota. The results of the assessment are not yet available, but a tentative analysis listed some important habitats:

– Baltic sandy shores and natural shore meadows
– Dry meadows (mostly dependent on traditional grazing and mowing)
– Herb-rich forests, particularly old stands
– Forests on exposed slopes of glacifluvial formations
– Wooded pastures and wooded meadows
– Calcareous rocks
– Meso-eutrophic fens and bogs, both open and wooded
– Small water bodies (springs, brooks, small wetlands)

In addition, there is a recognised need for protection of some high seas habitats.

Recommendations
The under-represented elements and shortcomings identified in the SAVA project, METSO Action Programme and the assessment of the efficiency of the National Biodiversity Action Plan (1997–2005) should be carefully considered in the framing of the post 2007 acquisitions strategy (for instance METSO acquisitions are expected to continue at least from 2005–2014).

Coastal meadow, Kvarken. Baltic shore meadows are one of the natural habitat types that are protected under Finland's Nature Conservation Act. These habitats are scarce, and often small-scale, but nevertheless valuable in terms of their biodiversity or their landscape value. (Photo: Jari Kostet)

Question 2.3: Are established reserves covered by comprehensive management plans?

Overview – Fair
Protected areas are in theory covered by comprehensive management plans although so far only about half the intended plans have been completed and some of these need updating. There is a need for some meaningful targets and milestones if current intentions are to be achieved.

Background and issues
Management plans are currently not available for all protected areas although steps are underway to address this. To date 49 per cent of statutory land use and management plans have been drawn up, with an average age of 9.71 years (i.e. some are considerably older than this). The current goal is to have them all complete and up to date by 2010, by which time approximately 270 areas will need land use and management plans, creating the need for development of 45 such plans per year over the next six years.

Plans in progress during 2004 include (at the time of writing): 45 land use and management plans, of which 32 are still to be completed; 90 operational action plans (mainly for forest restoration); 4 natural resource plans; 13 Natura 2000 regional master plans; at least 5 provincial plans; and development of plans for two candidate natural World Heritage sites.

Because no significant upgrading in human resources is likely in the immediate future, there are several national strategies to cover as much as possible of the protected area system remaining without a land use and management plan by other means of planning. A new round of natural resource planning has been started by Metsähallitus with updated methodology and guidelines (Asunta et al. 2004). The Kainuu area in central eastern Finland has a completed plan, and plans for those in western Finland and Lapland are being drawn up. Likewise a whole round of regional Master Plans at provincial level is being drawn up for Natura 2000 areas. (For details on the Metsähallitus planning methods see information on pages 48–49.)

The commitment to and implementation of management planning is welcomed. We note that this also creates a challenge because of the rate at which new protected areas are being created is noted and, where feasible, the option of "clumping" protected areas so that several nearby protected areas can be covered by one plan is supported. The need to embrace the whole of Natura 2000 site is essential and we note with agreement that current plans cover the whole area.

The many, generally very small, conservation areas recently or currently being established play a key role here but there has apparently been confusion about the role of Metsähallitus NHS, in these sites with particular respect to determining sensible visitor numbers and management strategies. The current 500 or so sites are likely to increase to over 2000 and further work is needed here in terms of planning. The role of the regional Natura 2000 Master Plans in this regard needs to be clarified. Because many of these protected areas are too small to conserve a full range of biodiversity within their own borders, landscape based plans are particularly important and will need integrating with neighbouring land use plans in many cases.

Recommendations
A comprehensive strategy, with associated milestones, is needed for catching up with planning if current targets for management plans are to be met. Particular attention is needed to planning for small reserves, within the context of Natura 2000 and in line with our earlier recommendations for a landscape mosaic approach to planning wherever possible.

Question 2.4: Are management plans routinely and systematically updated?

Overview – Fair to good
It is intended that management plans are updated every five-ten years although these targets seem ambitious and we suggest some prioritisation so that new land use and management plans are drawn up for the most needy sites first.

Background and issues
According to new guidelines, management plans are assessed at least every five years and updated every ten years. Some of the oldest plans for national parks clearly need up-dating as the average age of existing plans is almost at the ten year period for renewal. It may be that with some stable protected areas such regular rewriting of plans is less critical but in other cases it will be important and a clear prioritisation process would be useful. Areas with particular pressures or threats (such as increases in tourism, emerging problems with invasive species, illegal use, or potential problems from climate change) are given first priority for updating. We note that there is a public exhibition process for these plans to provide an opportunity for public participation within planning.

Updating is clearly important but we suggest that some method of prioritisation is introduced, so efforts at updating focus on those protected areas facing rapid change, failing targets, increased threats or other factors which necessitate looking again at planning.

Recommendations
We propose the development of a risk assessment process (perhaps associated with plans for threat assessment referred to above) to guide prioritisation and ensure that those protected areas at highest risk have plans updated every five years.

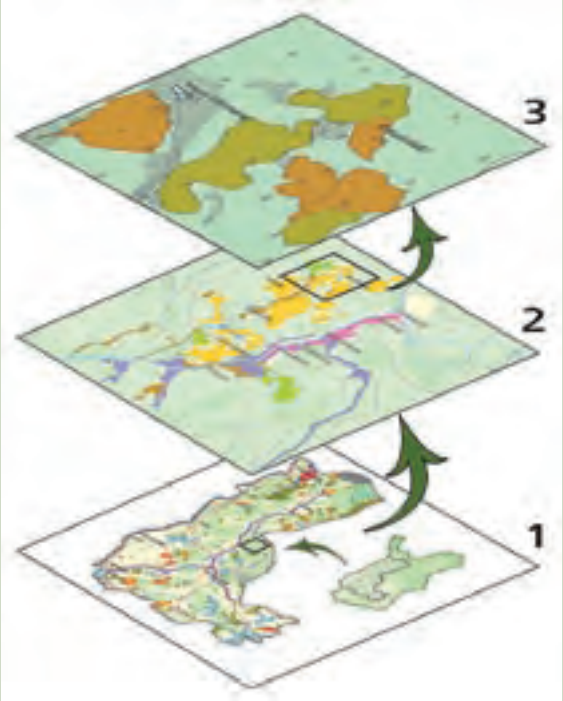
Autumn in Saariselkä, Urho Kekkonen National Park. This park is one of the few protected areas in Lapland that has a recent management plan. Many plans of the vast wilderness reserves have long been "in process", but dialogue with stakeholders is continuous and constructive. (Photo: Jouni Klinga)

Metsähallitus Uses Multi-stage Planning Methods

Careful planning of land use is important in reconciling various requirements regarding state lands and waters. According to its principles, Metsähallitus interacts closely with regional and local stakeholders in issues relating to the planning of forestry, nature conservation and other land use. This ensures that different views are brought forward and is a way of acquiring information on the operating environment of Metsähallitus. In this way, potential conflicts can also be prevented.

Metsähallitus uses a multi-stage planning system covering regional decisions on land use as well as detailed local plans for a particular operation. An example from western Lapland is presented in the graph.

Advanced information systems are an essential part of planning, as they ensure that detailed and up-to-date information is always accessible when making decisions.



Multistage planning process of Metsähallitus. An example from Western Lapland. 1. Natural resource plan, 2. Land use and management plan, 3. Operational plan.

Natural Resource Planning

In natural resource planning, use of the land and water areas that are under Metsähallitus' administration is planned with multiple goals. This means that the use and management of natural resources is broadly reviewed from the perspective of their different forms of use. The goal is to reconcile the possibilities offered by natural resources with the needs of different parties to form an effective whole. Different forms of use of state lands are nature conservation, forestry, recreation, eco-tourism, real estate development and the sale of soil resources.

In the natural resource planning process, the characteristics of an area are assessed in terms of **economic sustainability**, **ecological** and **social sustainability**. The main goal of ecological planning is to ensure the preservation and spread of the local flora and fauna. In social planning, area use is evaluated from the perspective of, among others, the requirements of recreational use and/or nature-based economies. Various alternative calculations are made to facilitate the assessment, making it possible to illustrate any correlation between the different operating practices, as well as advantages and drawbacks.

Seven natural resource plans cover the whole country and they are valid for a decade. They are the basis for more specific management plans.

Land-use and Management Planning

Land-use and management plans are devised for the protected, wilderness and hiking areas that are under Metsähallitus' administration. With the help of these plans, the goals of nature conservation, recreational and other uses for areas are reconciled.

On the basis of basic information on geology, ecology, land use and cultural history, the following issues are analysed in the plans:

- current state of the area
- most important nature and culture values
- future development and threats
- goals of management and use
- environmental impacts

Operational Planning

The decisions made in natural resource and land use and management planning are implemented at stand and site level by means of detailed operational planning. Operational planning in Forestry includes silviculture and felling plans, while in protected areas, planning mostly includes habitat management, forest and mire restoration and route plans.

Participation

Metsähallitus strives for open and interactive operations in the planning of all natural resource use. In regional planning projects, for example, representatives of stakeholder groups interested in utilising state-owned lands are invited to form a co-operation in which local experts negotiate on the use of the area and related factors.

Metsähallitus also organises various public meetings where projects are presented to the general public and where private citizens can also express their opinions about operations and plans. Through participatory planning Metsähallitus acquires important information about the special features of local areas and any goals that stakeholder groups and the local people may have. By careful planning, the opportunities and needs related to the use of natural resources can be reconciled.

Metsähallitus Information Systems

The proper management of natural resource use requires elaborate information systems. Metsähallitus uses the most advanced technology to gather and manage as well as publish information. Up-to-date information is always used in both Metsähallitus offices and on its terrain.

Metsähallitus uses modern geographical information systems, which are used to maintain up-to-date information on the following:

- natural resources
- real estate property
- routes, structures and buildings
- operational planning that has been carried out
- measures that have been implemented.

Data on different areas is collected from field surveys and from various external information sources such as aerial photos, data from the National Land Survey of Finland, the Finnish Environment Institute, the Finnish Forest Research Institute and the Geological Survey of Finland. Information is updated and adjusted continuously.

The geographical information system is an essential tool in natural resource planning as well as in operational planning in forestry and nature conservation. The system is also a key tool for many employees of Metsähallitus: approximately 500 people use it every day.

Current information needed in planning about the requirements of the surrounding community and customers is obtained from/by:

- visitor surveys and counts
- feedback systems
- discussions with customers
- participatory planning
- specific surveys.

This information is also analysed and taken into consideration in the planning process.

Data collection in the field. (Photo: Mia Vuomajoki)

Question 2.5: Are protected areas located in the places with the highest or most diverse biodiversity values?

Overview – Fair
On a national scale, the northern ecosystems are very well represented in protected areas whereas those in the south are not, particularly with respect to large forest and mire areas. There is also general under-representation of marine and freshwater systems in part because land tenure issues mean that these habitats are often omitted from the protected area even where they fall within its boundaries. Traditional rural biotopes are also somewhat under-represented in new additions to protected areas.

Background and issues
According to the Nature Conservation Act biodiversity value is not the only reason for establishment of a protected area (and many were established before the term "biodiversity" even existed and aimed at different priorities). Today, threats to biodiversity in Finland are reasonably well known, especially with respect to species. The 2000 *Red Data List of Finnish Species* (Rassi et al. 2001) identified the declining biotopes with the most vulnerable species, including certain forest habitats, traditional agricultural habitats, waterfront and underwater habitats (see additional information on p. 79). The biodiversity hot spots in Finland are also well known. Many aspects of the biodiversity of the PA system were systematically assessed by the SAVA project in 1997–1999 (Aapala 2001, Below 2000, Heikkinen et al. 2000, Kallio 2001, Toivonen et al. 2004, Virkkala et al. 2000).

The existing protected area system covers much but not all of the country's threatened biodiversity. It is very representative concerning northern species and ecosystems, but there is quite a lot still to be developed with respect to southern ecosystems and species assemblages. This is due to a quantitative and very significant imbalance between the area of northern and southern protected areas. In particular, large forest and mire areas in southern Finland are generally poorly represented in the protected area system, which may cause problems in maintaining biodiversity of these ecosystems in the longer term. This is partly compensated by numerous small protected areas, which often represent rare habitats; however these areas suffer from a number of limitations including isolation, limited size, small populations of the target species and often poorly defined ecological boundaries. In the south forest habitats are often under pressure from commercial forestry interests and managed forests lack many characteristics of natural forests.

The METSO is an action programme to protect biodiversity in forests in southern Finland. METSO contains pilot programmes to test new voluntary means for land owners to protect forest biodiversity (e.g. voluntary conservation through natural values trading or competitive tendering, founding nature management areas or cooperation networks for forest biodiversity).

***Phaeolus schweinitzii* in an old-growth forest.** This polypore, which has no common name in English, is one of the good indicator species of old growth forests. Decaying wood is needed also by many other declining forest species. (Photo: Timo Nieminen)

METSO also includes restoration and management of habitats in protected areas and collection of basic information on protected areas. Biological criteria have been agreed to the measures included in the programme. The Action Programme also recognises the option for a new conservation programme for protected forest areas in southern Finland, which will be examined before 2007, after the efficiency of voluntary measures have been evaluated.

Different aquatic ecosystems and shore types will be well represented in the Finnish protected areas system once the Finnish Natura 2000 network proposal is completed. However, natural ecosystems in inland waters within protected areas face problems from lack of hydrological integrity and frequently also because protected area boundaries do not include critical catchment areas and shoreline buffer zones that are so important for sustainable management of fresh-water ecosystems. A great deal of the fresh-water and shore areas will be protected by the Water Act and land-use planning. However, there is still only limited experience in the effectiveness of these measures for conserving water and shore ecosystems. Conservation values and conservation status of some marine (e.g. offshore reefs and sandbanks) and fresh-water ecosystems and nature types are still insufficiently known, although there are efforts to address this through additional survey work (the VELMU programme). In particular, small water bodies, running waters and underwater marine habitats are still poorly surveyed and understood.

Traditional rural biotopes are very important for many threatened species and nature types, but they are not well represented in recent additions to the protected area system. Maintenance of these biotopes also requires various specific management practices, which are difficult to support or arrange within the protected area network.

Recommendations

Better integration is needed of private and public protected areas and of protected areas with surrounding land and water. A process should be established for the boundaries of existing protected areas, particularly in southern Finland, to be reviewed when land use and management planning processes highlight the need. Inventory activities for biodiversity values in freshwater and marine habitats should be enhanced. There is still clearly a need for a strengthening of the protected areas network in the south of the country.

Habitat management, Archipelago National Park. Grazing maintains traditional rural biotopes that are essential to some declined and threatened species. Metsähallitus NHS makes pasture agreements with local cattle owners. A total area of about 1,200 hectares of traditional rural landscape was managed in 2003. (Photo: Tapio Heikkilä)

Question 2.6: Are stakeholders given an opportunity to participate in planning?

Overview – Good to very good
There are clear provisions for stakeholder participation in planning and many examples of good practice especially in the north. The level and nature of participation varies considerably between protected areas and regions. There is scope for greater use of advisory committees to enhance and streamline planning for priority reserves.

Background and issues
Participation in planning is in principle the same between regions although in practice the particular conditions in the far north result in some different approaches and in addition participation changes with the size of the protected area and the degree of management involved. For smaller areas participation may be limited to a few public meetings and the opportunity to feed back for instance through the internet. For large areas, such as wilderness areas, many stakeholders become involved in a major participation exercise.

Wilderness area plans include some of the most detailed participatory efforts. Unfortunately most plans are stalled, particularly in the far north, because of differences between the Sámi and the Finnish government with respect to land tenure issues. However, even in an unfinished form they are providing guidance to protected area managers (and have benefited from multiple inputs from stakeholder groups). Key issues such as reindeer herding and hunting are clearly debated at length.

The participatory process and methods to organise participation have been developed over a number of years specifically for the Forestry Unit of Metsähallitus and adopted by the NHS; these draw on experience from the US and Canada, adapted to Finnish conditions. A guide (*Participatory Approach to Natural Resource Management*) was first published in 1999 and is also available in English (Loikkanen et al. 1999); this is used by all the business units of Metsähallitus. The ideas have also been incorporated into the other planning guidelines (e.g. Natural Resource Planning, Asunta et al. 2004 and Land Use and Management Planning, Metsähallitus NHS 2004b). All major plans are published in paper form when ratified and most draft plans are available for commentary in the internet, including operational logging and restoration plans.

Recommendations
Consideration should be given to expanding the number and role of advisory committees to expedite and enhance planning in priority reserves in greatest need of management planning.

Public participation on site, Lake Inari area in northern Lapland. A new hiking area is soon to be established, existing infrastructure and new plans are demonstrated and discussed. (Photo: Metsähallitus)

Question 2.7: Are restoration and reintroduction programmes systematically planned and monitored?

Overview – Good
Restoration is being systematically planned for dead wood, mires and prescribed burning in the south although we are unclear about whether or not this is at a sufficiently large scale. Similar restoration activities might be considered for the far north as well, where the principle restoration need is related to overgrazing.

Background and issues
Restoration is a clear target area for Metsähallitus NHS including the restoration of dead wood components, reintroduction of prescribed burning and the restoration of mires and peatlands. For example the METSO programme (forest biodiversity programme for southern Finland) goals include restoration of 33,000 hectares, with prescribed burning intended for 960 hectares, an increase in dead and decaying trees in 10,500 hectares, creating small gaps in stands over 5,200 hectares and peatland restoration on 16,000 hectares. So far (at the time of writing), 56 operational restoration plans have been prepared and while some of these have already been implemented, the majority of the restoration programme is still to come. (For additional information on habitat restoration of protected areas, see pp. 54–55.)

Less clear at present are the options for restoring habitats in the far north, where grazing pressure is changing ground vegetation (for example, by reducing cover by lichens such as *Cladonia rangifera* and *C. alpestre*). Longer term voluntary actions to reduce grazing pressure have been touched on above. In the short term, agreement on fencing even very small areas in parts of the protected area network would be a useful way of determining the vegetation mosaic in the absence of grazing and likely recovery times.

Specific restoration activities are also being carried out to protect key species, such as the pearl mussel and through the removal of invasive species.

Recommendations
That current restoration effort in the south is continued and if necessary extended. In addition it would be worth investigating options for at least some small experimental restoration activities in the far north.

Burning of a forest stand, Isojärvi National Park, Western Finland. Prescribed burning is one of the many methods of forest habitat restoration used by Metsähallitus. (Photo: Jari Kostet)

Habitat Restoration of Peatlands and Forests in Protected Areas of Finland

Habitat restoration is a form of nature conservation that involves various measures designed to help ecosystems return to their natural state. Restoration work usually involves a single measure which either triggers a process of naturalisation within an area of habitat, or speeds up a slow process of recovery towards a natural state.

Restoration work has been carried out in protected areas in Finland for about a decade. At first this work largely focused on pine mires, but in recent years spruce mires and forests on mineral soils have also increasingly been restored.

Metsähallitus has developed suitable measures for the restoration of peatland and forest habitats in nature reserves in cooperation with the Finnish Environment Institute.

Peatlands

Finland is rich in mire habitats. As much as one third of the country earlier consisted of mires of various kinds, but half of these original mires have been artificially drained. Many have been turned into farmland or undergone peat extraction, but still more have been drained to increase timber production. Nowadays new peatland drainage schemes are very rare, but old ditches are still cleared out periodically.

About a quarter of all Finland's native plant species are associated with peatland habitats, while 80 of the country's approximately 235 breeding bird species are dependent on the continued existence of peatlands during at least some stage of their life cycle. About two-thirds of the peatland species under threat are characteristic of nutrient-rich fens and spruce mires, habitats which have declined most markedly.

The goal of peatland habitat restoration is to return drained peatlands to their natural state by restoring the natural hydrological regime of a mire. The work can take decades. There is a particularly urgent need for restoration work in southern Finland, where three-quarters of all peatlands have been drained.

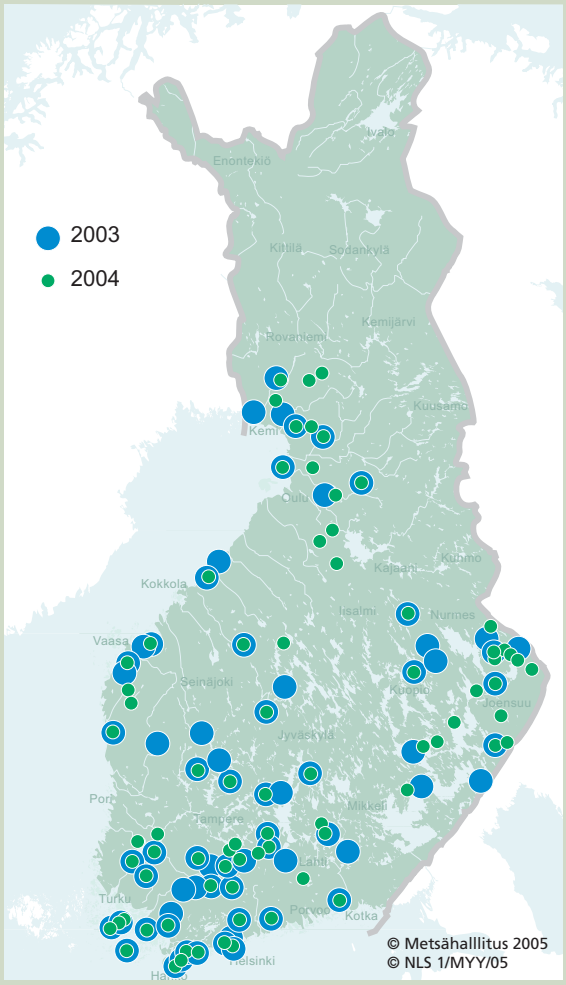
A total area of about 8,850 hectares of drained peatland had been restored by the end of 2003. Restoration sites have been scattered around the country from the south of Finland up to southern Lapland, but the largest total areas were in western Finland. In 2003 Metsähallitus restored some 1,200 hectares of peatland habitat.

Torronsuo National Park. The largest raised bog area in southern Finland remaining almost untouched by ditching and peat extraction that have been the fate of many other mires. (Photo: Esa Pienmunne)

Forests

Around two thirds of Finland's land area is covered by forest. For hundreds of years, slash-and-burn agriculture and tar burning have influenced the structure of forests. Also, the intensive forestry practiced after World War II has caused significant changes is forest habitats. As a result of effective fire prevention, extensive forest fires hardly ever occur in Finland. Few natural forests with natural decaying and regeneration processes remain, and they are located mainly in protected areas.

Intensive forestry has caused the forests to become fractioned and monotone. Due to this development, many Finnish forest species have become threatened. Forests are the primary habitat for 37 per cent of the threatened species in Finland. One third of the species that have become extinct in Finland were forest species. Particularly invertebrates, especially beetles, as well as fungi have become extinct from forests.



Habitat restoration and management sites in the METSO programme 2003–2004.

The endangerment of species has been the most rapid in the forests of southern Finland.

The objective of forest restoration is to speed up the recovery of a former commercial forest to a natural state. Restoration creates characteristics of a natural forest that are lacking or absent, such as dead and decaying wood, charred wood, deciduous trees and variation in the structure of the forest. The goal is to initiate natural sequences of events, like the formation of decaying wood and the diversification of the age and species distribution of the trees. Ecological restoration also improves the living conditions of rare and threatened species.

Forest habitat restoration work has mainly been carried out in protected areas in southern and central Finland. More than 2,650 hectares of forest habitat had been restored by the end of 2003. In 2003 about 1,200 hectares of forest was restored by Metsähallitus.

EU subsidies

Finland has a special responsibility for protecting mires, since no other European country except Russia has such a great variety of peatland ecosystems. Raised bogs have completely disappeared from many parts of central Europe. Aapa mires do not form in more southerly climes, and the aapa mires of Sweden and Russia are not as diverse as those in Finland. The European Union's Habitats Directive aims to preserve biodiversity throughout the EU, and describes both raised bogs and aapa mires as extremely valuable habitat types. Finland has received financial support through the EU's Life Nature Fund for several mire protection projects, in which the restoration of drained peatlands is a major goal.

Boreal natural forests are one of Finland's seven forest habitat types, and they have been classified in the EU directive as particularly important habitats. Several projects have received EU Life Nature funding for the ecological restoration of forests. The most extensive of the projects currently under way is the "Restoration of Boreal Forest and Forest-Covered Mires", in which 5,000 hectares of former commercial forests belonging to Natura 2000 areas are being restored. The project is part of the Forest Biodiversity Programme for Southern Finland (METSO) and will continue until the end of 2007.

Question 2.8: Are protected areas integrated into a wider ecological network following the principles of the ecosystem approach?

Overview – Fair
The excellent planning of the protected area system needs to be complemented by some wider landscape-scale approaches, embracing both protected areas and other land, particularly in the south.

Background and issues

In general the assessment team was impressed by the efforts to use the best available science to select, plan and manage protected areas, and if properly implemented this is probably sufficient to secure biodiversity in the north of the country (with the stipulation that climate change may introduce unexpected pressures in the future).

However, in the southern part of the country, the situation is less clear despite the impressive increase in the number of reserves. Old-growth forest in productive forest areas is in short supply and surviving areas are fragmentary and generally very small: Pyhä-Häkki National Park, including the largest continuous old-growth forest in the south, is only 1,278 hectares in area and most other areas are smaller. In this area effective conservation needs to include buffer zones, corridors and other sympathetic management regimes.

In recent years the NHS has demonstrated the potential of wider planning areas; this could perhaps be better represented by integration of managed and protected forests within state ownership and also, although we recognise that this is more difficult, better integration with private forests, including closer cooperation with the Regional Forest Centres. The new Metsähallitus environmental guidelines (Heinonen et al. 2004) for state commercial forests includes the development of buffer zones on state own lands around small protected areas in southern Finland.

The existing education system for private forestry owners could be expanded to look specifically at the issue of forest management near protected areas. In general perhaps the opportunity for working with sympathetic land owners, for instance by encouraging conservation actions around summer houses or in other land not primarily dedicated to timber production, could be more fully explored. Regional and provincial plans also need to take account of the relationship with other land uses (including critical decisions about how much land is needed within protected areas).

Old-growth forest, Helvetinjärvi National Park. In southern Finland protected forests need support of landscape ecological elements in surrounding commercial forests to maintain their biodiversity. (Photo: Timo Nieminen)

Recommendations

That Metsähallitus NHS investigate options for widening the effectiveness of the protected areas network in the south by innovative schemes to work with private forest owners and companies on a voluntary basis, perhaps drawing on experience in other parts of the world.

WCPA framework section 3: Resources

Question 3.1: Are personnel and resources well organised and managed with access to adequate resources?

Overview – Good
The NHS organisational structure appears to be quite strong and the workforce well trained and highly motivated. On any international comparison, the NHS is well funded although we note that quite a lot of this money is tied to infrastructure developments and similar fixed costs.

Background and issues

The Natural Heritage Service functions as a network organization, divided into six Regional Units and a strategic Central Unit. The business unit and each regional unit are directed by an executive team. Each unit also has process teams which are in turn steered by national teams. The NHS is led by objectives and the management process is strategically focused. We were generally impressed by the level of management and by the quality and commitment of the staff members that we met and talked with. We note that all permanent staff have received training to help build knowledge and capacity and we strongly support this, and would recommend that these opportunities are extended to at least some regular seasonal staff if this is practical. The issue of capacity building is returned to below.

We recognise that active management of all sites is not feasible in the present circumstances so that resources are focused on the most important areas and the most effective management duties. If current plans for increasing visitor numbers are successful, this will have financial implications in terms of the infrastructure needed to channel visitors and we note that currently some tasks, such as path maintenance, are reliant on temporary funds as in the case of Oulanka National Park.

The total budget in 2003 was about 32 million euros, coming from various sources (ministries, EU, MH income and others, see Fig. 13) and was allocated to the NHS Central and Regional Units, each of which in turn is responsible for allocating resources for protected area management in the manner it considers best: long-term and annual planning help to direct the resources for achievement of prioritized objectives.

There is no formula systematically applied to resource allocation in the NHS. Resources are allocated by "tradition", by core process and by long-term and annual strategic and operational planning. The division by Regional Unit is shown in budget tables and by process indirectly in work time monitoring tables. On an international comparison, this level of funding is quite high and investment in infrastructure, including particularly visitor centres and displays, has been considerable. However we also note that staffing levels are quite low compared with many other European countries and the increased responsibilities mean that many staff will be feeling under pressure. There are deficiencies in some areas, for example relatively few staff with expertise in marine issues. We also note that funding for management of private protected areas (controlled by the Regional Environment Centres) seems to be inadequate and we are concerned that management may be suffering in consequence.

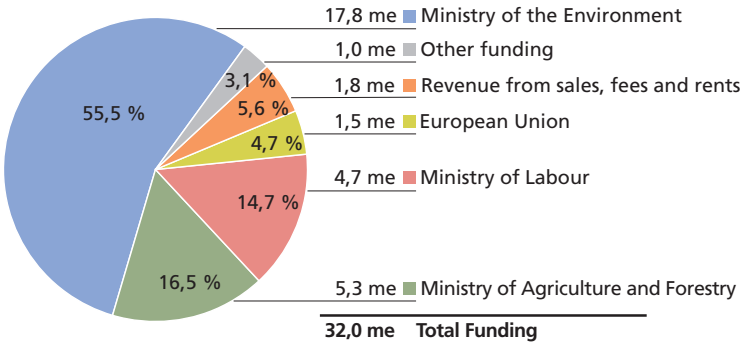


Figure 13. Financing of the Natural Heritage Services in 2003 in millions of euros.

Recommendations

Consideration should be given to development of a systematic funding formula which, with refinement over time, could be linked to state of the parks reporting and directly support a culture of adaptive management.

Question 3.2: How have levels of resources varied with increase in protected areas over the last few years?

Overview – Good
Although funds have increased significantly, they may not have kept pace with new expectations and new protected areas. However, general levels of support remain good. We suggest slightly more emphasis on exploring options for contributions, probably voluntary, from visitors.

Background and issues
Total resources have increased steeply in the last few years although this is mainly due to increased commitments and expectations from Metsähallitus: mainly the creation of the Natural Heritage Services in 1992, the gaining of responsibility for recreational and customer services in 1998–1999 and for state protected areas from the Finnish Forest Research Institute in 2002, coupled with an increase in protected areas that are being established on the basis of national conservation programmes (see Fig. 14). Despite a generally healthy budget, we recognise that although funding has increased it has probably not kept pace with the increase in responsibility and in particular with the growth in the number and size of protected areas under the management of Metsähallitus NHS. We also note that some of the new money is designated for capital works under special programmes (infrastructure, maintenance of cultural values etc.) posing a potential challenge to maintain ongoing operations and recurrent funding, and care needs to be taken that these new expectations and duties do not detract from long term conservation work. We note that users of protected areas are expected to contribute less to their upkeep than is the case in many other countries; there is no entrance fee and a great deal of "free" goods and services including firewood, accommodation, cooking gas, waste removal etc. Whilst we recognise that the high tax levels in the country make people reluctant to contribute further to state-funded enterprises, we wonder if more emphasis could be put on voluntary contributions to maintaining protected area infrastructure and services.

Recommendations
Opportunities for private sponsorship and volunteer contributions to ongoing operations should be explored more thoroughly.

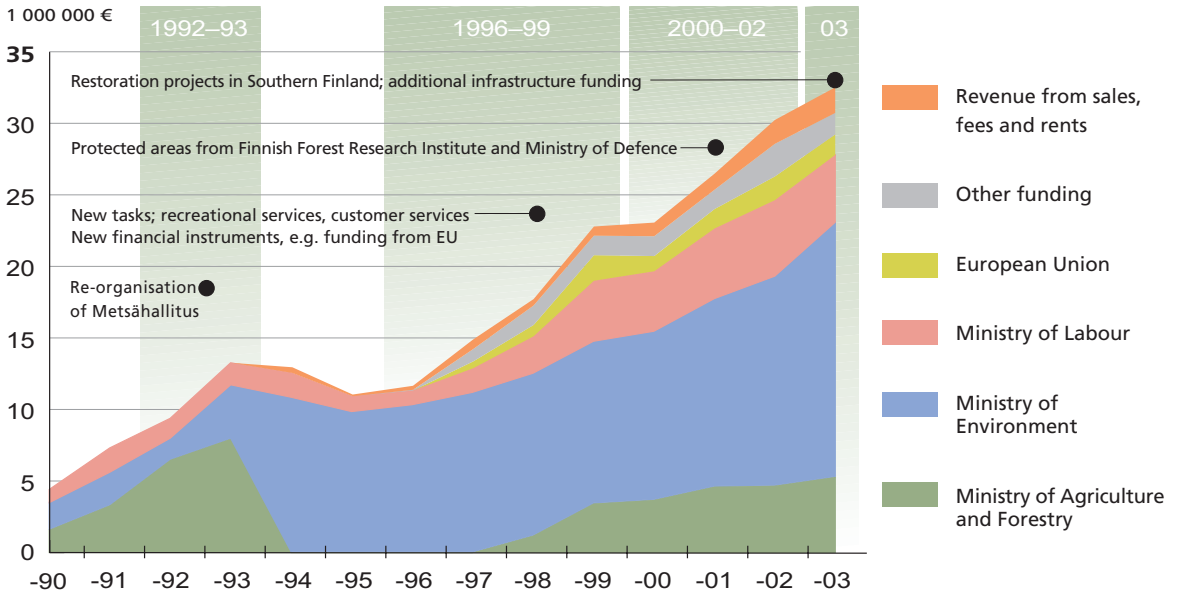


Figure 14. Financing of the Natural Heritage Services in 1990–2003. Growth points coincide with establishment of regional units in 1992, gaining responsibility for recreational and customer services in 1998–1999, transfer of protected areas from other organisations in 2002 and METSO funding from 2003.

Overview – Fair to good
Those resources linked to biodiversity conservation are aimed at the most threatened species using a staged assessment based around the national Red List, EU Habitats directive, globally rare species not under threat in Finland and umbrella species. Questions remain about whether the proportion of the budget devoted to biodiversity conservation is significant enough when compared with other costs.

Background and issues
At a regional level, resources are linked to priority actions as identified in management plans and regional plans. In the southern regions, the large number of protected areas means that prioritisation is important. In the north, fewer, larger protected areas make allocation of funds slightly easier. To some extent funding also drives action so for instance surveys and planning can be undertaken earlier in places where EU funding is available and the restoration programme under METSO is only possible because of earmarked funding.

Priorities for biodiversity conservation at a species level are determined by reference to four different criteria (in descending order of importance):

- The national Red List (Rassi et al. 2001),
- Directive species of the European Commission (which are all also on the Red List but have important reporting implications);
- So-called responsibility species, which are not threatened in Finland but are rare elsewhere.
- Umbrella species which represent whole habitats, such as the White-backed Woodpecker (*Dendrocopos leucotos*) representing old-growth birch forest in the south.

The Saimaa Ringed Seal is the species requiring the largest funding, due to its unique nature and detailed needs for monitoring and protection. The Golden Eagle is the next most expensive species due to the funding required for compensation to reindeer herders and the associated survey work which despite the role of volunteers takes about two person years of time. Next comes the White-backed Woodpecker, which has a full time staff member assigned to its conservation, centred mainly on conservation of old-growth birch forest. The woodpecker is both an umbrella species for old-growth birch and a threatened species in its own right. There is comparatively little funding devoted to marine issues when compared with other biodiversity. However, overall quite a large proportion of funding is dedicated to visitor facilities rather than biodiversity conservation and the level of funding aimed at services such as firewood provision seems pro-

The Golden Eagle (*Aquila chrysaetos*) is a valuable species. Reindeer herders are compensated for losses caused by eagles. The associated extensive survey work also requires substantial resources. (Photo: Tapio Kostet)

portionately large. For example, Urho Kekkonen National Park currently invests 78,000 euros per year in providing firewood (and a further 30,000 euros would be needed, if all the firewood were brought from off site; some is currently logged within the protected area).

Recommendations
Stronger linkages need to be established between the allocation of resources and the achievement of conservation outcomes. A state of the parks reporting system could be an important mechanism to achieve this. The full cost of providing services for visitors should be clearly communicated so that visitors are aware of management challenges in balancing visitor enjoyment and conservation programmes. We would also recommend a shift towards spending an increased proportion of the budget on active biodiversity conservation.

Question 3.4: What level of resources is provided by partners and / or volunteers?

Overview – Fair
There are a range of EU projects and also voluntary activities although the latter could be extended, perhaps to include some private land-owners around or within protected areas, and some capacity building with other potential partners such as tourist information offices.

Background and issues
The large majority of funding for the protected area network comes from the state, through three different Ministries. In addition, the NHS has created partnerships that contribute financially to management, mainly through EU funded projects and amounting to about 5 per cent of total funding (for details on EU projects see additional information on pp. 62–63). There are also a number of indirect contributions to protected area management through cooperation in, for example, building and maintenance of recreational infrastructure, working with the Regional Environment Centres and sometimes also with sympathetic municipalities. In the latter case the political gains from cooperation may sometimes be worth more than the financial contributions.

Cooperation and partnerships are also being developed with tourist entrepreneurs. The NHS is providing opportunities for marketing within protected areas and the entrepreneurs are already providing many services to the visitors; within visitor centres, by organising ecotourism in some of the larger national parks and through other franchises including lodges on the borders of or sometimes also within protected areas. Collaboration with other authorities (police, coast and frontier guards, maritime administration) and volunteers is also very important in surveillance and law enforcement, especially in the large northern protected areas and scattered archipelago areas. For instance the coast guards help to police illegal use in the Archipel-

Clouded Apollo (*Parnassius mnemosyne*). Metsähallitus was partner to WWF in an EU funded project in 2001–2004 to rehabilitate and maintain traditional rural meadows in Finland, Sweden and Estonia. Special attention was given to inventory and monitoring of threatened butterflies. (Photo: Seppo Keränen)

ago National Park. The evaluation team met with both entrepreneurs and municipal representatives who clearly understood the benefits of protected areas and were acting with local Metsähallitus NHS offices.

Volunteers help in the monitoring of threatened species contributing at least 50–100 work-months a year. Voluntary work camps are organized by Metsähallitus NHS, WWF Finland and others to help in management of heritage biotopes, for example through hay cutting and other traditional activities: some of these camps have now been happening for many years. The habitat restoration work is carried out by the forestry unit of Metsähallitus, working to plans developed by the NHS. There may be options for greater voluntary work in the marine field, for example, the use of sport divers in survey work. The Natural Heritage Services recognises that there is scope for considerably greater contribution from volunteers, which would have economic benefits and would also help to draw more people into active support for protected areas.

We would identify two possible additions to the partnerships from our own reading and observations. First, greater cooperation with private landowners around or sometimes within protected areas, particularly in those cases where land is owned mainly for recreational purposes, such as the many small islands with summer cottages within the Archipelago National Park. Given that these people are choosing the site for its natural beauty, they may well be prepared to collaborate on issues such as control of invasive species and some aspects of land management. Secondly, some of the staff in tourist information centres, whilst helpful, clearly knew little about the protected areas nearby and efforts to train them through site visits and perhaps seminars might be a worthwhile investment for regional NHS offices.

Recommendations

The Natural Heritage Services should develop a more comprehensive strategy to maximise partner/volunteer contributions to protected area management and the achievement of conservation objectives.

Voluntary habitat management work, Archipelago National Park. Annual work camps for volunteers are organised jointly by the NHS and WWF. (Photo: Seppo Keränen)

Project Funding for Metsähallitus from the European Union

Life Nature Projects

Nature conservation actions financed under this instrument contribute to the implementation of the Habitats Directive and the Birds Directive. In particular, the actions aim to maintain and restore the habitats and species listed in both Directives to a favourable conservation status. As the creation of NATURA 2000 as a coherent ecological network of protected areas in the EU is central to both Directives, Life Nature is focused on them. The overall objective of Life financing is to promote the implementation of Community policy and legislation in the field of the environment.

Present Life projects in which Metsähallitus participates

2004–2008 Natural Forests and mires in the "Green Belt" of Koillismaa and Kainuu
2004–2008 Restoration and maintenance of valuable aquatic bird habitats of Pirkanmaa
2003–2008 Saving the endangered Fennoscandian *Alopex lagopus* (SEFALO+)
2003–2007 Management of wetlands along the Gulf of Finland migratory flyway
2002–2007 Karelian mires and virgin forests – pearls in the chain of geohistory
2002–2007 Restoration of boreal forests and forest-covered mires
2002–2006 Restoration of mire and bog ecosystems in North-Savo with reference to environmental education
2002–2005 Evo Forest – Awareness-raising and protection of Southern Finland forest biotopes
2002–2005 Protection of Aapa Mire Wilderness in Ostrobothnia and Kainuu
2001–2006 Protection of valuable bird-rich wetlands in Central Finland
2001–2005 Herb-rich forests, forests of *Dendrocopos leucotos* and Western Taigas in North Karelia
2000–2005 Conservation of *Cypripedium calceolus* and *Saxifraga hirculus* in Northern Finland
2000–2005 Protection and usage of aapamires with a rich avifauna in Central Lapland

Past Life projects in which Metsähallitus has participated

2001–2004 Rehabilitation and maintenance of meadows in Finland, Sweden and Estonia
2001–2004 Protection and management of the valuable wetland Siikalahti
1999–2004 Management of the most valuable wetlands in SW Finland
1999–2003 Conservation and management of boreal groves
1999–2003 Deciduous Western Taigas and Herb-rich Forests in Pohjois-Savo
1999–2003 Conservation of Ylläs-Aakenus Taiga Forest Area in Lapland
1999–2003 Combining protection with other forms of land use in the natural boreal forests of Syöte
1999–2002 Protection of Taiga and Freshwater Ecosystems in Central Finland
1998–2002 Conservation of the Arctic Fox (*Alopex lagopus*) in Finland and Sweden
1997–2002 Kvarken Archipelago
1997–2002 Protection of Aapamires in Southwestern Lapland and Northern Ostrobothnia
1997–2002 Rahja Archipelago
1998–2001 Ensuring purity of the breed of the Wild Forest Reindeer (*Rangifer tarandus fennicus*)
1997–2000 Conservation of the Lesser White-fronted Goose (*Anser erythropus*) in Finland
1997–1999 Restoration of grasslands and pastures in the Southwestern Archipelago National Park and Biosphere Reserve
1996–1999 Restoration of active raised bogs, aapamires and bog woodlands in Natura 2000 sites
1995–1998 Protection of bilberry and fern western taiga habitats and their associated species (White-backed Woodpecker)

Structural Funds Projects

The aim of the European Union's regional and structural policy is to reduce the regional differences within the European Union by giving support to the least developed areas. The resources of the structural funds will be focused on the realisation of the target programme of the member states. This financing can be used to carry out various kinds of environmental projects.

Apart from the target programmes, the structural funds render financing to so-called community initiatives which aim at resolving problems on the European scale. It is a transboundary cooperation programme whose aim it is to speed up the European integration by cutting down obstacles that national frontiers present for the cooperation.

The maximum financing from the structural funds can be 50 per cent of the project costs. The remainder is national financing.

Present projects in which Metsähallitus participates

2003–2006 Historical Background to Nature Tourism on River Lieksanjoki (Interreg III A Karelia)
2003–2005 Kalevala Parks (Interreg III A Karelia)
2003–2005 Launch of the Finnish Large Carnivore Information Center (Interreg III A Karelia)
2003–2005 The existence and state of the populations of the fresh water pearl mussel in the NE parts of the North Calotte

Past projects in which Metsähallitus has participated

2002–2004 Development of Sustainable Nature Tourism in the Unesco Biosphere Areas of the Archipelago and in the Western Regions of Estonia (Interreg IIIA)
2002–2004 Return to the Sources – Environmental Education Cherishing the Traditions
2002–2004 Promotion of nature tourism in the Finnish Oulanka and Russian Paanajärvi National Parks (Interreg IIIA)
2001–2003 Service constructions for the lower part of River Tiukanjoki (Objective 2)
2001–2003 Kvarken Environment (Interreg III A)
2001–2003 Nature trails and recreational facilities
2001–2002 Launch of the activities of Syöte Visitor Centre
2000–2002 Construction of the Visitor Centre for the Syöte National Park
2000–2002 Service Structures in the Linnansaari National Park
2000–2001 Structures of the Arctic Circle Hiking Area
2000–2001 Summer Trail for the Ylläs Area
2000–2001 Boat landing sites for Lake Pihlajavesi
2000–2001 Boat landing sites along the Seal Trail
1999–2000 Service Structures in the Seitseminen National Park
1998–2000 Sea Birds and the Mink (Interreg)
1997–2000 Isojoki–Lauhanvuori – Nature Tourism
1998–2000 From Elimyssalo to Vienansalo – Nature Tourism and Conservation (Interreg II A)
1997–2000 Construction of the Häme Visitor Centre
1997–1998 Oulanka-Paanajärvi – National Parks in Collaboration beyond borders (Interreg II A)

Funds from the European Union have been available to Finland through competitive application after becoming a member state in 1995.

Overview – Fair
Responses to the RAPPAM questionnaire show that there are concerns from managers about levels of resources, particularly in light of new responsibilities for cultural resources and for Natura 2000.

Background and issues

The analysis of responses to the RAPPAM questionnaire show that most protected area managers remain unsatisfied with resources, particularly in terms of staff numbers (see Figures 15 and 16). Particularly gaps are noted in the ability to carry out necessary planning, surveillance and monitoring. Managers also see that new requirements to increase the emphasis on the protection and maintenance of cultural heritage are not being matched by a parallel increase in available resources, especially in the case of maintenance of buildings and structures, and management of heritage biotopes. There are concerns about the implications of increased tourism, new responsibilities under Natura 2000 and the need to increased representation of marine and freshwater habitats.

These responses were so widespread that we must note them here, although also note that on an international scale the protected areas remain comparatively well funded.

Recommendations

Wherever possible links between budget resource allocations and management outcomes should be strengthened and made transparent so that expectations of managers are realistic and focused on adaptive management within available resources.

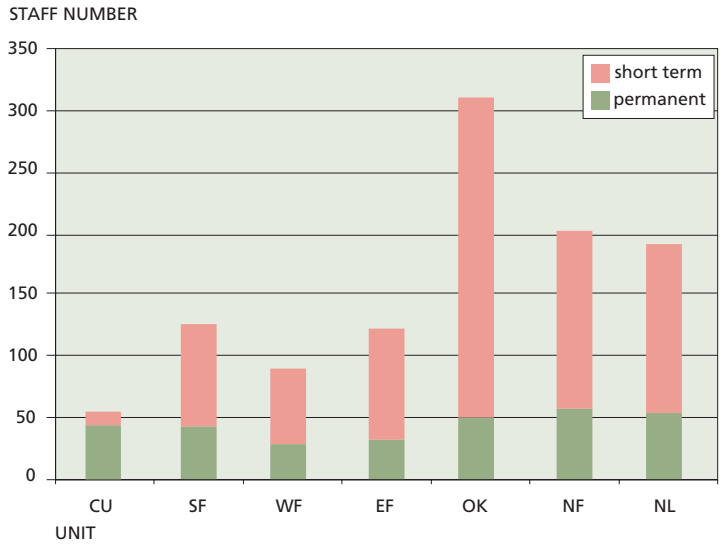


Figure 15. Natural Heritage Services staff by region in 2003. Total staff number was nearly 1100, of which permanent was about 300. Short term staff is regularly needed particularly in the northern regions of Finland. CU=Central Unit, SF=Southern Finland, WF=Western Finland, EF=Eastern Finland, OK=Ostrobothnia-Kainuu, NF=Northern Finland, NL=Northern Lapland

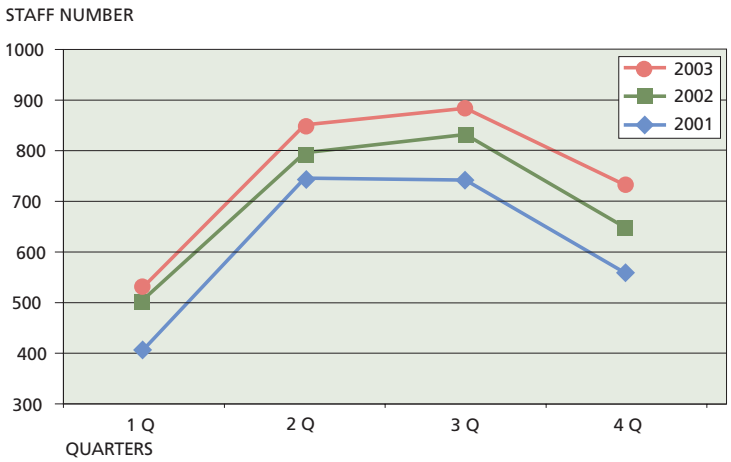


Figure 16. Natural Heritage Services staff 2001–2003. Total staff number varies considerably during the year. Seasonal help is needed for customer services and assessment work in the field.

WCPA framework section 4: Process

Question 4.1: Is management performance routinely assessed and professionally audited against relevant planning objectives and management standards?

Overview – Fair to good
The NHS is audited regularly by an internal process and also according to ISO 14001 and in some individual protected areas through other assessment systems. We suggest that greater emphasis be given to conservation targets in the audit process and look at options for a more regular *State of the Parks* report.

Background and issues
Natural Heritage Services performance is fundamentally driven by the annually reviewed agreement with the Ministry of the Environment.

Monitoring is part of the management process and internal auditing of the environment management system of Metsähallitus NHS. The annual work plan and objectives of the Natural Heritage Services are reviewed and the results are available to the public on request; the *Objectives Achieved 2003* report for instance gives an overview of performance. The Internal Audit Function is organised as an independent unit under the CEO of Metsähallitus and is also carried out by each business unit, including the NHS, as part of the organisation's overall environment management system. Audit processes are standardised, findings are documented and it is expected that recommendations are followed up. The Internal Audit Function reports to the Board of Metsähallitus rather than the director of the NHS, although the latter gets a copy of the report. During 2000–2001 there was intensive work in auditing of the Natural Heritage Services throughout the country, and a number of recommendations were made at that time. Generally results were rated as good to very good with just some minor refinements needed; and therefore there has been less effort put into detailed auditing of the NHS in subsequent years. The audit will continue on an annual basis but will not be intensified again unless there is clear evidence of heightened risk.

The organisation's environmental management system (EMS) is also audited under the ISO 14001 series although staff members believe that this process may no longer be rigorous enough on its own to fulfil their objectives and next year there is likely to be some refinement of the current system. Companies tendering for work with Metsähallitus also need to have the relevant certification.

The NHS central unit checks annually with the regions that broader objectives are being met, for instance with respect to meeting targets for species' recovery. As discussed in the introduction, some individual protected areas also go through more rigorous assessment processes, such as Pan Parks certification as undertaken by Oulanka National Park and possibly in the future by the Archipelago National Park. In addition, Syöte National Park has been credited under the Charter for Sustainable Tourism by the EUROPARC Federation.

Specific areas that should be targeted to achieve continuous improvement are the specifications of performance measures and indicators, giving particular attention to conservation outcomes in terms of the condition of protected area values rather than simply outputs of plans and documents. Currently there is no single public document that looks at all aspects of performance within the protected areas system and we suggest that serious consideration be given to developing a periodic *State of the Parks* report for Finland. We return to this issue below.

Recommendations
The regular audit could include a check of whether the resources of the protected area are focused on the management objectives of the individual park and the wider vision of the NHS. Auditing should not focus just on internal management issues, but delivery of strategic objectives. The NHS and the Ministry of the Environment should give particular attention to conservation outcomes in the formulation and annual review of their funding agreement.

Question 4.2: Is NHS staff performance management linked to achievement of management objectives?

Overview – Good
There are already systems in place for linking individual staff performance to agreed management objectives, although we suggest that this process could be strengthened if performance agreements were periodically audited as part of the internal audit programme and, in time, linked to state of the parks reporting.

Background and issues
An objective-based management approach is used in Metsähallitus NHS which includes every permanently employed staff member. Person to person consultation is carried out in a standardized manner using TUKE, an electronic documentation system. People work in teams and objectives are often set and reviewed by these teams. Detailed annual plans are linked to protected area management objectives at regional unit level and achievements assessed by the executive teams of the NHS. The staff performance management system provides a good basis for linking the performance of individual staff to the achievement of management objectives. However we suggest that to assure quality and continuous improvement, performance agreements should be subject to periodic audit as part of the internal compliance and audit programme. It was evident in our travels and discussions with staff that otherwise very confident and committed staff members are relatively narrowly focused to the management of their park and less aware of the wider implications of their work – e.g. in the distinction between nationally and internationally threatened species. We note that the NHS has an explicit programme to broaden their perspective, which we applaud. The situation nonetheless tempers our interpretation of some responses for example of the RAPPAM threats analysis. There may be additional work needed in developing an international perspective.

Recommendations
NHS staff performance audits should be covered by periodic audits as part of the internal compliance and audit programme.

Question 4.3: Is there external and independent involvement in internal audit?

Overview – Fair
External involvement is limited. We suggest some changes in terms of bringing some outsiders onto the controlling Audit Committee and external review of any *State of the Parks* report.

Background and issues
The Environment and Quality Control System (or environment management system) of Metsähallitus is certified by det Norske Veritas, an external and independent assessment organisation. The book-keeping of Metsähallitus is also externally audited by PricewaterhouseCoopers. Overall, however, non government involvement in audit is limited. The main internal audit programme is formulated by the internal audit function of Metsähallitus, which is essentially independent of the Natural Heritage Service but there is no involvement of people external to government. We therefore suggest that process credibility might be enhanced by inclusion of at least one member of the Audit Committee representing a conservation NGO perspective. In the event of a more formal *State of the Parks* report being instituted, some aspects of the management, particularly related to outcomes, might also benefit from external review.

Recommendations
Consideration should be given to appointment of more external, independent representatives with experience and expertise in conservation management to Board and audit roles within the NHS, including those with experience in conservation management and non-governmental organisations. In addition, key aspects of any future State of the Parks review should include external review.

Question 4.4: Is there effective public participation in the protected area management process in Finland?

Overview – Fair to Good

The Natural Heritage Services currently relies on statutory options for participation and on management boards and advisory committees in some areas. It is still unclear quite how well this is working, with some continuing disquiet about protected areas in rural districts and perhaps a failure to recognise their role in encouraging tourism (which has general support). Some further research and explanation of these links might be useful.

Background and issues

Four protected areas have management boards involving local representatives (Urho Kekkonen, Archipelago, Ekenäs Archipelago and Repovesi National Parks) and these enjoy quite a high level of participation. In general, the NHS is trying to move away from these formal systems, which are expensive and time consuming to run, and rely more on the statutory participation systems that exist for commenting on protected area plans.

In the far north, there has been greater emphasis on participation, particularly by the Sámi, and this appears to be working quite well, with continuing conflict being with the state in general rather than with Metsähallitus NHS. There has also been wide participation in the development of plans for wilderness areas, which has had many benefits although wider political disagreements mean that many of these have yet to be approved. We note that considerable efforts have been made to provide materials in the Sámi language including leaflets, a dedicated website, information boards and posting and nature trails.

Whilst in theory this appears to work quite well, some communication problems apparently remain. For example the European Commission receives a fair number of complaints from Finland about level of participation (although it is not clear whether this relates to a genuine cross section of the population or is the results of complaints campaigns organised by small pressure groups).

More generally, support for protected areas is more firmly rooted amongst the urban populations that use them for recreation than the rural populations who live nearby and still rely on traditional livelihoods such as forestry, where protection is sometimes seen as a threat. Research by Oulanka Research Station found that while there was a high degree of willingness to increase tourism (for instance less than 5 per cent of people interviewed in Kuusamo and Pudasjärvi wanted to see less tourism), from 40–60 per cent of the same people felt there were already too many protected areas. This concern about the total amount of protected areas was mirrored in discussions with some local stakeholders during our field visits. The change of staff towards people coming from the area has helped in terms of building local confidence in the system.

It appears that the link between protected areas and tourism needs to be explained more strongly in these areas and perhaps more generally in Finland. Support may only increase as generations change and it is possible that some antipathy has been caused by the fact that protected areas have grown so fast and have included more restrictions than people were first led to expect.

Recommendations

The participatory process has been carefully developed but perhaps needs to be periodically reviewed for its effectiveness. More studies like the one carried out at Oulanka would be useful to gauge feelings towards protection within different regions of Finland. More systematic efforts to quantify and publicise the links between protected areas and sustainable development may be required.

Question 4.5: Is there a responsive system for handling complaints and comments about protected area management?

Overview – Good
Comments from visitors are generally positive and complaints are tackled on a case by case basis. It is harder to gauge whether overall opinions are fed back to Metsähallitus NHS.

Background and issues
There are relatively few negative comments amongst those recorded at visitor centres and in the log books of wilderness huts and most of these refer to signs, toilets and pathways; all are said to be noted and acted upon.

Visitor centres and customer service points provide face to face channels for commenting on recreational services. In addition, each of the fifteen visitor centres carry out customer surveys at five year intervals and customer services collect continuous written feedback on a one-page form. There is currently no central database on visitor comments.

Generally there seem to be ample opportunities for visitors to feed back comments and examination of log books and visitor books shows that the response is overwhelmingly positive.

It is more difficult to gauge how local communities or indeed urban populations in Finland feel about protected area management, and further examination of these opinions might be justified, as discussed previously.

Recommendations
Any state of the parks system should include monitoring of visitor satisfaction and public opinion of management so that adaptive management approaches can be employed to address issues of concern. There is an argument for carrying out occasional opinion polls amongst both rural and urban populations to gauge attitudes towards the protected area system and its management.

Oskari Visitor Centre, Linnansaari National Park. Face to face contact, customer surveys and visitors counts are part of the Metsähallitus customer service. (Photo: Jari Kostet)

WCPA framework section 5: Outputs

Question 5.1: Is adequate information about protected area management publicly available?

Overview – Good to Very good
Publications are of a high standard, including web pages. We suggest a more comprehensive strategy regarding distribution of the more expensive items and perhaps a general strategy about information services as options change with greater web access.

Background and issues
Metsähallitus Natural Heritage Services produces a great deal of material, ranging from very attractive books to a comprehensive web system and including in particular a series of brochures on all the national parks, in a variety of languages, lists of birds, maps and more than 1,500 web pages in Finnish (www.luontoon.fi), Swedish (www.utinaturen.fi) and at the end of the year also in English (www.outdoors.fi) and the Sámi language (www.lundui.fi). There is a general aim to put more resources into the web and perhaps less into paper publications in the future.

Much of this information is aimed at tourists and casual visitors and more detailed information on management is currently being updated and should be ready in more comprehensive form on the web by the end of 2004 (www.metsa.fi). Threatened species work is already well covered (e.g. the Saimaa Ringed Seal) as well as restoration work and projects funded by the EU.

A great deal of information is also available in paper form. General management information is contained in published annual reports. The NHS also has a quarterly journal for personnel (which is widely read in other business units and outside Metsähallitus) and two semi-scientific serial publications, in which survey reports, plans and guidelines are published. Selected editions are in English as well as Finnish and most have an Eng-

Luontoon.fi web service for park visitors. A new web service in Finnish and Swedish opened in early 2004 and later also in Sámi and English. It presents information on all protected area sites that offer public services in a unified format.

Exhibition on wetland birds in the Siikalahti Nature Information Hut. Most customer service points have a permanent exhibition that thematically points out what is most interesting in the local nature and culture and how the heritage can be maintained. Visitor centres also have facilities for changing exhibitions. (Photo: Mikko Pöllänen)

lish summary. Operational plans for management are public, and thus available when requested. Only land use and management plans are made available actively on the internet.

Information is also available in the visitor centres and we were uniformly impressed by the quality of presentation and information in these places and in the Siida – Northern Lapland Nature Centre and Sámi Museum run jointly with the Sámi Parliament. Information is also available throughout the more public areas of national parks and hiking areas: however these services require constant maintenance and we note that internal research suggested that 40 per cent of information boards required renewal or some updating in 2003.

NHS staff members asked if publishing is useful, in particular with regards to the money invested in large colourful books about specific protected areas. Our feeling was generally positive: the books help "place" the protected areas and give them added credibility; however it would be interesting to see how many are placed in public libraries and other places where their usefulness can be maximised (for example in local hotels or in tourist offices). It would also be worth talking with commercial publishers about producing some editions to offset costs and to increase distribution. Whilst applauding the use of the web, the leaflets are also extremely useful for those tourists without access to the internet. (It might also be worth exploring the comparative costs of having web facilities available in some visitor centres and printing on demand.)

Recommendations

As we believe is already intended within the NHS, a general strategy is needed for the future management of information including analysis of costs of different publishing options.

Question 5.2: Are visitor services suitable for the relevant type of protected area?

Overview – Good
Visitor services are generally of high quality and in fact we question whether in some cases visitor needs are being elevated above those of biodiversity, for instance in the provision of firewood. We suggest gradually phasing out the collection of firewood within protected areas and also phasing in more individual responsibility with respect to waste management by requesting visitors carry this out with them.

Background and issues
Visitor services are outlined in the statutes and principles concerning protected areas (for example in the *Principles of Protected Area Management in Finland*). Services in national parks are focused on zones where recreational activities cause least harm to protected area values and visitors are encouraged to go there, although they are free to travel on foot or skis throughout the park. Marked trails allow day visitors to experience the environment of the protected area and in the case of larger areas unmarked trails stretch over the whole area, with passage limited only by weather conditions and the ability to cross rivers and streams. Wilderness huts are generally of high quality and comfortable and are heavily used during the main tourist seasons. There are controls on where camping can take place and fires can be lit in the core areas of the reserve, although it is unclear how tightly these are applied in practice. From observation, most people congregate around the designated campsites and most people follow defined trails even when these are not signposted. Certain protected areas have restrictions relevant to the values protected (e.g. boating in seal protection areas and in the core zones of marine protected areas). In wilderness areas there are restrictions, but also special rights for local communities. National hiking areas are freely available for recreational purposes.

Wilderness hut, Terbmisjärvi, Käsivarsi Wilderness Reserve. In remote parts of wilderness reserves and large national parks Metsähallitus maintains over 300 huts which can be used by visitors all year around. (Photo: Markus Sirkka)

There are 15 visitor centres, most of which have been created in the last fifteen years, along with four other customer service points (Fig. 17). A great deal of effort has been put into visitor centres and explanatory and educational material and we were impressed by these efforts. The visitor centers received around 690,000 visits during 2003. (See also page 73 for information on counting visitor numbers.)

Those of us who were outsiders to Finnish culture were sometimes rather surprised by the amount of facilities available to visitors even deep within protected areas and particularly the provision of firewood. Firewood provision is clearly a major part of the Metsähallitus NHS services with 1982 sites being regularly serviced in national parks, hiking areas and wilderness areas.

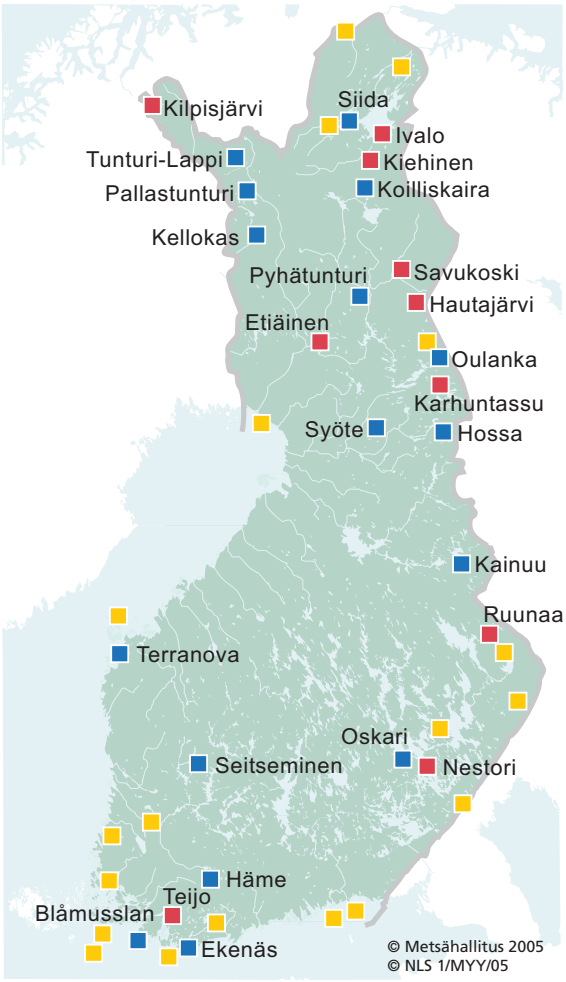


Figure 17. Customer service points of Metsähallitus in 2004. Metsähallitus has a comprehensive customer service network throughout the country. Colours refer to classification of the services. Blue = Visitor Centres, red = Customer Centres, yellow = Nature Information Huts.

In Urho Kekkonen National Park, for example, 100 hectares has been felled to supply firewood for campfires and saunas in the heart of the park, something that would not be allowed in many other countries[4]. We recognise the strong role that campfires and saunas play in the expectations of visitors but suggest that this needs some new approaches, for instance by explaining clearly to visitors about the environmental costs of firewood and perhaps by looking at alternative ways of supplying this from outside the park boundaries.

Waste collection is a major undertaking with 643 sites being serviced, although some protected areas are now asking visitors to carry waste out and this appears to be working well; a further reduction in serviced waste collection may be possible in the future. It was suggested however that there are currently too few places for boating people to leave their waste waters.

Recommendations

A review of firewood provision might be included as a routine part of the audit procedures and collection within protected areas gradually phased out over the next few years. Similarly, recent experiments with requesting visitors to carry waste out could, if they continue to be successful, be more widely applied to protected areas both to save money and also to help build up a culture of caring for protected areas and minimising environmental impacts.

Recycling point, Hossa Hiking Area. Visitors in Metsähallitus areas have been encouraged to carry their own litter from the terrain and sort it out at recycling points provided. Waste is still collected from over 600 points. (Photo: Tage Lampén)

[4] It should be noted that the area felled has a previous history of management and was not one of the most valuable habitats in the protected area.

Standardised Visitor Surveys and Counts

Standardised visitor surveys have been conducted in Finnish protected areas since 2000 and visitor counts with standardised counting equipment since 1998. Standardisation makes it possible to collect comparable information from different kinds of areas and information can be combined on a national level. Uniform measurements also assure long-term monitoring of changes in each studied area.

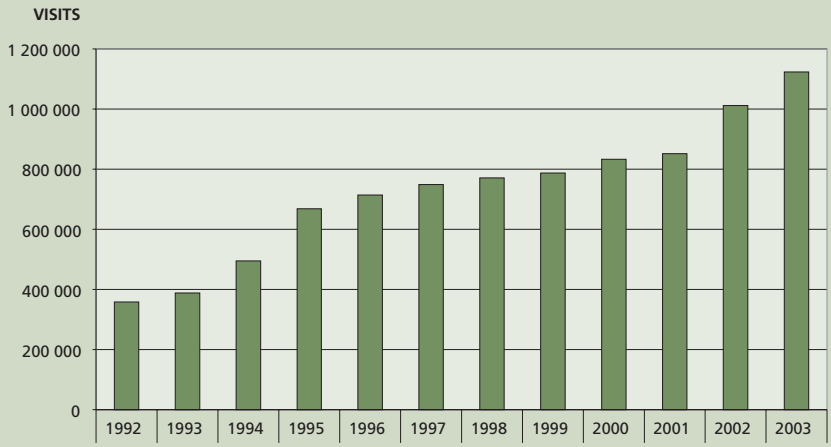
Visitor survey methods have been developed in cooperation with the Finnish Forest Research Institute. Procedures are described in a survey manual and analysis of data is supported by a MS Excel application. Data is collected by a guided self-conducted questionnaire which includes questions on visitor profile, activities, distribution of use by area and by time, duration of visit, expenditure of visitors and questions on visitor satisfaction and motivation. Normally 300–500 questionnaires per area are filled during the survey season (summer/winter) and surveys will be repeated at 5 year interval. Presently 5–10 surveys are planned annually and to date altogether more than 40 surveys have been conducted by uniform methodology.

Visitor surveys are complemented by visitor counts. Counting methods are under continuous development to reach standard and reliable results. Visitor counting in national parks has become more systematic with new electronic trail and traffic counters that have been added to older methods of estimation by guest books and manual counters.

Information on visitor numbers and flows is essential for planning and sustainable management of protected areas. Impacts of nature tourism are calculated by indicator figures in proportion to number of visits. Indicators are related to amounts of waste, consumption of fire wood, wear of terrain, various costs, impacts of nature tourism and nature conservation on local or regional economies. Collected information is used to adapt management and meet visitor expectations. Metsähallitus is developing visitor information methods and practises further in a project in 2005–2006.

National Park	No. of visits	National Park	No. of visits
Oulanka	165 000	Eastern Gulf of Finland	15 000
Urho Kekkonen National Park	160 000	Liesjärvi	15 000
Pallas-Ounastunturi	125 000	Patvinsuo	15 000
Nuuksio	100 000	Puurijärvi-Isosuo	15 000
Archipelago	80 000	Pyhä-Häkki	11 000
Repovesi	65 000	Lemmenjoki	10 000
Seitseminen	40 000	Isojärvi	8 000
Helvetinjärvi	32 000	Päijänne	8 000
Linnansaari	28 000	Hiidenportti	7 500
Lauhanvuori	25 000	Perämeri	7 200
Pyhätunturi	25 000	Salamajärvi	7 000
Rokua	24 000	Riisitunturi	7 000
Syöte	24 000	Kolovesi	6 000
Kurjenrahka	20 000	Tiilikkajärvi	6 000
Ekenäs Archipelago	20 000	Kauhaneva–Pohjankangas	6 000
Torronsuo	20 000	Valkmusa	5 000
Petkeljärvi	17 000	Leivonmäki	4 500

Visits to National Parks 2003.



Visits to National Parks 1992–2003. The total number of visits has nearly tripled in the past decade.

Question 5.3: Are management related trends systematically evaluated and routinely reported?

Overview – Fair to good
A great deal of very useful information is collected. However there is currently no single place where such data can be analysed and presented to the public and we therefore propose that key information, particularly on management effectiveness and the outcomes of NHS' work, should be reported periodically in a *State of the Parks* report.

Background and issues
Metsähallitus NHS routinely collects information on number of protected areas, expenditure, visitor numbers, major new protected areas, projects, key species, restoration efforts etc. and key results are reported in the yearly *Metsähallitus Natural Heritage Services Annual Report*. Trends are also to be added to internet services under construction this year (for instance total area, details of all statutory protected areas, resources, personnel, etc.) Status of biodiversity is also monitored in detail and is discussed in Question 6.2 below. Three volumes of the Red Data Book (Rassi & Väisänen 1986, Committee for the Monitoring of Threatened Animals and Plants 1992, Rassi et al. 2001) provide a key source for developing targets. Twenty species of plants living mainly on Metsähallitus NHS administered lands are surveyed by the organisation.

There are also many other detailed surveys, related to both status and changes including restoration, with surveys being undertaken before, during and after restoration activities. For instance impacts of mire ditch removal at Liesjärvi National Park have been surveyed four times using 19 sample plots, with for instance changes in *Sphagnum* cover, changes to health and alterations in beetle populations all being monitored. It is notable that changes were faster than expected.

The level of detail is sometimes impressive. However, we note that the current system and proposed measures do not necessarily contain a vehicle to show trends in management *effectiveness* to the public or other stakeholders including the scientific community (or to Metsähallitus staff members). The internal audit in Metsähallitus NHS does not directly assess effectiveness; rather it concentrates on keeping to guidelines (which in a way does tell whether things are done efficiently) and on environmental impacts. Are the threatened species populations rising or falling? Are public perceptions towards protected areas growing more positive or more negative? Are restoration activities leading to long-term improvements in habitat? As mentioned earlier, we wonder whether Finland would wish to consider developing a *State of the Parks* report to report these and other new data on a periodic basis. Lack of such reports has already been identified as an issue by the European Commission.

Recommendations
The excellent information currently available is rather scattered and not analysed as a whole to build up a picture of management effectiveness in Finland, particularly as it relates to conservation outcomes. Most of this information is already available. We therefore recommend serious consideration be given to the development of a *State of the Parks* report that would be published periodically (for example once every five years) to collect and analyse this information and report it in an accessible form.

Question 5.4: Is there a systematic maintenance schedule in place for built infrastructure and other assets?

Overview – Fair to Good
A detailed, GIS-based database of infrastructure is currently being completed and will give a clear picture of status, needs and repairs. We also support the development and application of a risk-based analysis so that repair and maintenance can be targeted at the places in greatest need of attention.

Background and issues
Metsähallitus NHS is legally responsible for the safety and maintenance of all built infrastructure (bridges, buildings, boardwalks, towers etc.) in state-owned protected areas under its management. Wooden structures need periodic replacement and preservative chemicals are not used in protected areas to avoid contamination, necessarily shortening the life of some products. A boardwalk would, for example, normally need to be replaced after around ten years.

A thorough assessment of built infrastructure is currently underway; the preliminary safety assessment has been completed and issues requiring further attention have been identified. New data collected will for the first time be entered into a GIS application and centralised database, facilitating regular checking and updating on a national level; repair work will also be recorded. Such reporting is generally carried out by Metsähallitus NHS staff during the quieter winter months using the GPS. In the past inventory and maintenance has been less systematic, partly because data were in many places.

Recommendations
We underline the importance of having a functioning inventory system. Given the costs involved we would also support the development and application of a risk-based analysis so that repair and maintenance can be targeted at the places in greatest need of attention.

Suspension bridge, Oulanka National Park. All built constructions in Metsähallitus protected areas are being assessed. Repair and maintenance procedures are scheduled to ensure safety. There are thousands of constructions like signposts, information boards, fences, bridges and towers, as well as hundreds of kilometres of boardwalks and marked trails. (Photo: Markus Sirkka)

Question 5.5: Does Finland fulfil its monitoring and reporting obligations under European Directives and international conventions?

Overview – Fair to good
Membership of the European Union has brought new obligations, particularly in this case with respect to monitoring the 2010 target to halve biodiversity loss. Existing monitoring programmes may need some modification to meet these new needs and this could be addressed within a Natura 2000 Master Plan for monitoring in Finland.

Background and issues
The Ministries of the Environment and of Agriculture and Forestry have carried out several inventories and monitoring activities according to their own strategies; this work continues.

Since the last external evaluation of Finnish protected areas in 1994 a new scenario has emerged, due to commitments under the European Union. One of the major EU objectives for 2010 is to halve the current loss of biodiversity. To achieve this goal the EU is relying mainly on the Birds and Habitats Directives as the main instruments for biodiversity conservation. Other European-wide legislation, including the Water Framework Directive and the Forest Focus Regulation (Regulation concerning monitoring of forests and environmental interactions in the Community 2003/2152/EC) will also have some influence on biodiversity conservation in the European Union member states.

Given these changes, some adaptations of the old monitoring system will be needed to assess, whether Finland is achieving the EU 2010 objective of halving biodiversity loss. Finnish protected areas and Natura 2000 sites are called to play a key role in the new monitoring and reporting process. Given the high costs and time needed to carry out monitoring, well designed programmes need to take into account existing research programmes in order to avoid duplication. Special attention needs to be given to Natura 2000 sites and to other international designations, such as Ramsar wetlands. A strong degree of coordination is therefore needed between the different organisations responsible for Natura 2000 sites.

Ramsar site Siikalahti. Siikalahti is one of the 49 important wetland areas designated as Ramsar sites in Finland. It is a haven for both birds and bird watchers. (Photo: Markus Sirkka)

Recommendations
A monitoring and reporting programme is needed within a Natura 2000 Master Plan for Finland, building on existing systems but also taking account of new monitoring needs under European Union and other international obligations.

WCPA framework section 6: Outcomes

Question 6.1: Are populations of threatened species declining, stable or increasing?

Overview – Good
Surveys show that populations of many threatened species on land administered by the NHS are either stable or increasing, however there are exceptions such as the populations of the Baltic Ringed Seal and the Arctic Fox.

Background and issues

Threatened species populations have been assessed on a national scale in the 2000 *Red Data List*. The NHS is monitoring certain species (agreed on with the Ministry of the Environment and the Finnish Environment Institute). The status of these is reported annually. Trends in biodiversity are shown in general through comparison of status in the three *Red Data Books* for Finland (Rassi and Väisänen 1986, Committee for the Monitoring of threatened animals and plants 1992 and Rassi et al. 2001). Each volume reviews changes although simultaneous changes in the IUCN red data categories and better knowledge of species together make comparisons difficult because each volume has more data and also slightly different ways of categorising this information. Data are also available in more detail for certain species, such as Saimaa Ringed Seal (*Phoca hispida saimensis*), Wolverine (*Gulo gulo*), Brown Bear (*Ursus arctos*), Wolf (*Canis lupus*), Lynx (*Felis lynx*), key game species and raptors like the Golden Eagle (*Aquila chrysaetos*), White-tailed Eagle (*Haliaeetus albicilla*) and Peregrine Falcon (*Falco peregrinus*). There is also detailed distribution data for plants going back a century, and for other key groups such as butterflies and dragonflies. (For further information on the 2000 assessment of threatened species in Finland see page 79.)

Surveys make use of visual observation of the species themselves and other information as appropriate. Surveys of Arctic Foxes (*Alopex lagopus*), for instance, covered known nest holes, monitored nests, tracks of both Artic Foxes and Red Foxes (an invasive competitor) and visual observation to build up as good a picture as possible of population levels.

In some coastal protected areas certain alien species (e.g. the American Mink) are effecting populations of native species, but none are in threat of disappearing. The accidental establishment of mink in the Archipelago National Park is attributed with causing a 51 per cent decline in Razorbill (*Alca torda*) and a 70 per cent decline in Guillemot (*Uria aalge*) although mink control programmes have partially reversed these trends.

The native species which are in danger have mainly been given a red list status.

Some threatened species populations are increasing, others are stable, a few are still declining. The protected area network includes a considerable proportion of the country's threatened species, and the NHS inventory and management activities have markedly contributed to their protection. Their conservation status has by and large remained stable in the protected area system or is currently improving. The Baltic Ringed Seal (*Phoca hispida botnica*) populations are still suffering badly from sterility and the southern sub-populations are very small and seem to be threatened.

Threatened Lady's Slipper (*Cypripedium calceolus*), Oulanka National Park. This species is Finland's largest orchid. Its numbers have declined steeply throughout Europe owing to clearance or drainage of nutrient-rich fens for farming or forestry. (Photo: Ari Rajasärkkä)

The conservation of the Arctic Fox and the Lesser White-fronted Goose has also been less successful. The reasons for these failures are still uncertain. It is likely that the decline of the goose may be due to other threats in its migration path. The Arctic Fox may have declined due to legal and illegal hunting and is also likely to be suffering competition from the Red Fox which is expanding due to climate change.

At a habitat level, the emphasis given to old-growth forests, whilst laudable, has taken attention away from other habitats that are also at risk at a national level. For instance whilst most water habitats appear to be stable, in general shore communities are declining as are plant and insect communities on sunny exposed hill and esker slopes.

The NHS is working together with the Metsähallitus Forestry Business Unit to maintain populations of threatened species on all state land, also outside of protected areas. Natural resource plans, habitat restoration plans and site-specific operational plans can usefully highlight and address the habitat needs of populations of some threatened species.

A great many of the country's threatened species currently occur in small conservation areas and in sites belonging to national conservation programmes. Many of these have been identified and agreed in principle but not yet established, and their management planning and implementation of management measures, including restoration, will be a major task for the NHS in the future. Protected areas owned by private landowners are also a common option in implementing conservation in these small sites. In future one new or increasingly important management option might be the wider use of NHS expertise in the management of these private sites.

We note with some concern the current debate about opening up even the national parks in southern Finland to hunting. Given the very small area involved and the threats that such a move would pose to ecological integrity and to visitor satisfaction, we strongly recommend that this should not occur.

Recommendations

Recent conservation values in small conservation areas and sites of national conservation programmes should be surveyed on both state and private land in terms of rare habitats and threatened species. The possibilities of using NHS expertise in the management (including restoration) in protected areas on private land should be explored. These sites should also be included the monitoring programmes of selected species.

Arctic Fox (*Alopex lagopus*). The Fennoscandian population of this polar fox has decreased to 140 breeding adults, with only a dozen remaining in Finland. SEFALO+ is a joint 5-year conservation programme for the Arctic Fox in Sweden, Norway and Finland in 2003–2008. It is partly funded by the EU. (Photo taken in Greenland: Antti Below)

Threatened Species and Habitats in Finland

In 2000 the Ministry of the Environment and the Finnish Environment Institute carried out the third evaluation of threatened species in Finland. Previous assessment were published in 1986 and 1990. According to the newest report, 1,505 species of animals and plants are classified as threatened in Finland – about one in ten of the 15,000 species that could be evaluated. There are thought to be a total of around 43,000 species in Finland, but there was only enough information for about a third of all these species to be assessed. This latest evaluation has been based on the new categories and criteria developed and approved by the World Conservation Union (IUCN) in 1994.

The threatened species include

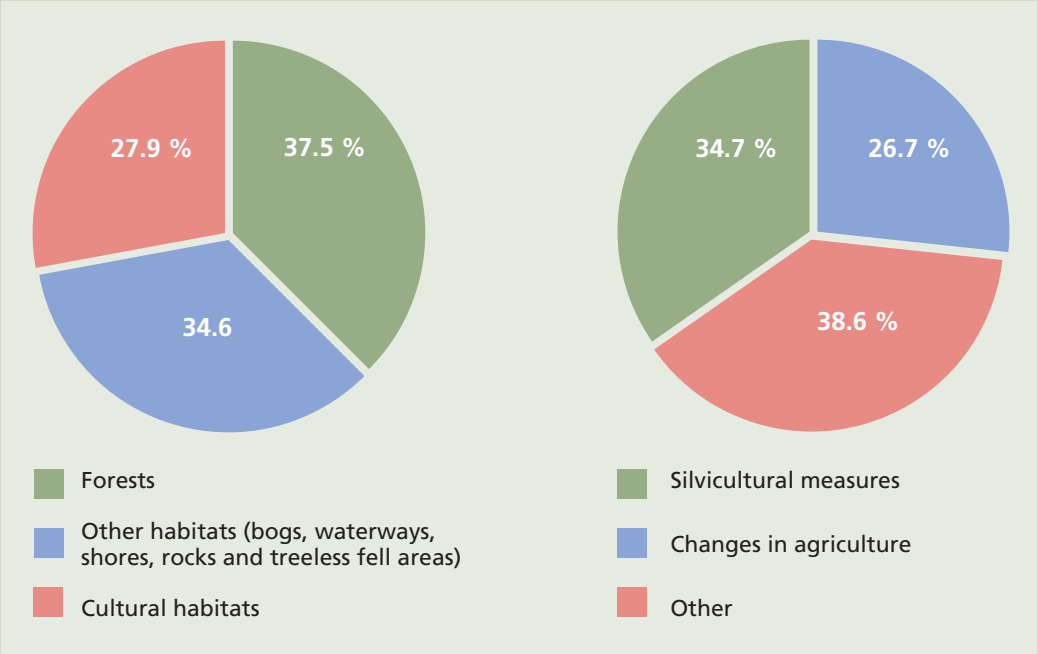
- 50 vertebrates
- 759 invertebrates
- 180 vascular plants
- 142 cryptogams
- 374 fungi or lichens.

Some 37 % of the threatened species are primarily associated with forest habitats, particularly herb-rich woodland and old growth heathland forest habitats. About 28 % of the species typically live in traditional farmland habitats, and this proportion has risen considerably since the previous evaluation in 1990.The main factors that threaten species or have led to extinctions include the overgrowing of open habitats no longer used for traditional forms of agriculture, and changes in forests induced by modern forestry methods.

The Finnish Environment Institute has started a new project in 2004 aiming to evaluate the status of habitats that may be threatened in Finland. Suitable methods and criteria must first be defined. The evaluation criteria will include factors such as reductions in the area of a habitat, and declining habitat quality.

Source

Rassi, P., Alanen, A., Kanerva, T. & Mannerkoski, I. (eds.) 2001: The Red List of Finnish Species. – Ministry of the Environment & Finnish Environment Institute, Helsinki. 432 p.



Habitats of threatened species and reasons for threatened status in Finland. (Source: Rassi et al. 2001)

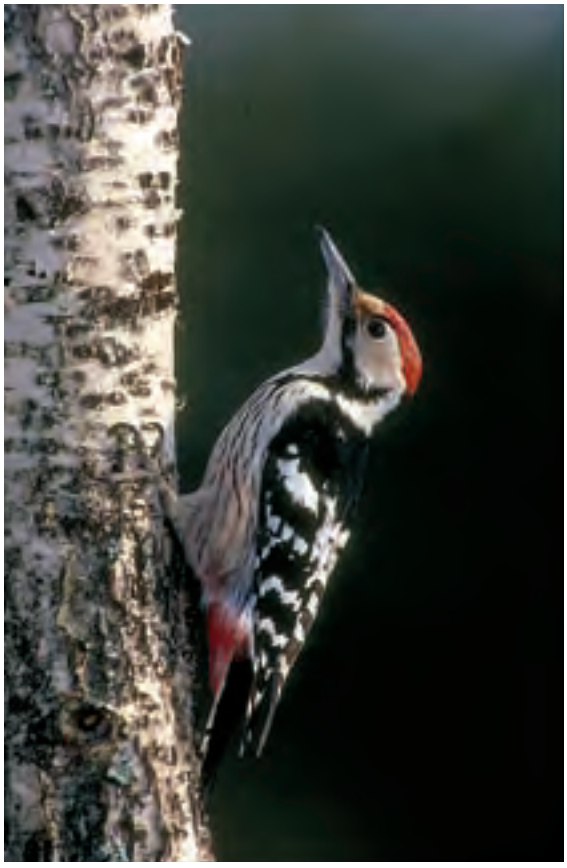
Overview – Fair to good
Specific use of indicator species is not widespread in Finland although some of the species currently monitored fulfil this function. We suggest a possible expansion in the use of indicator species in the future.

Background and issues
Use of indicator species is generally not very widespread although "target species" – i.e. species selected for special conservation action – fulfil some of the same functions. The White-backed Woodpecker (*Dendrocopos leucotos*) is an umbrella species which indicates the potential presence of many other threatened species and functions as an indicator species particularly in the south. The population is currently stable. Game species, which are monitored in cooperation with the Finnish Game and Fisheries Research Institute, are also a kind of indicator species, which are also important outside the protected areas.

In order to see general trends in the Finnish biota and to monitor and assess the role of the protected area system in their maintenance, a suite of indicator species is needed. These species should represent various habitats and elements of ecosystem functioning and should be monitored at intervals of 3–5 years. The suite of indicators should also represent different aspects of biodiversity and of likely changes in biodiversity. A preliminary list of indicators might include those representing: **scale, ecosystem functioning, renewal, uniqueness, diversity, resilience** and a related indicator on **agents of change.**

Examples of possible indicators might be, for instance: top predators such as the Wolverine and Golden Eagle as indicators of **scale**; umbrella species such as the White-backed Woodpecker and in marine ecosystems occurrence of Bladder Wrack (*Fucus vesiculosus*) and *Zostera* meadow as examples of **ecosystem functioning**; key old-growth forest species including dead wood components in forests as indicators of renewal; nationally or internationally rare species such as the Flying Squirrel, Saimaa Ringed Seal, selected butterfly species and species on the edge of their range as indicators of **uniqueness**; some of the less common habitat types and species such as the Hazel and other southern deciduous broad-leaved trees as indicators of **diversity**; species likely to be affected by climate change as examples of **resilience** and invasive species such as the American Mink and the relative abundance of the European and Canadian Beaver as **agents of change**. Many of these data are already collected in Finland but would need to be analysed and presented in a different way.

Recommendations
That a strategy be developed to use current monitoring data more systematically to develop a suite of indicators representing different aspects of biodiversity for reporting within a *State of the Parks* report.



White-backed Woodpecker (*Dendrocopos leucotos*). Living in old birch woods this species is an important indicator for many other threatened species. Efforts to save remaining habitats have thus far been able to keep the native population alive. (Photo: Markus Varesvuo)

Question 6.3: Are biological communities at a mix of ages and locations that will support native biodiversity and functioning in a healthy and sustainable manner?

Overview – Fair to good

Biological communities probably exist at a viable scale in northern protected areas but probably not in the case of many protected areas in the south. Here major restoration efforts are needed coupled with landscape approaches to increase transition zones and to address size problems. In addition actions outside and bordering smaller protected areas may be undermining their effectiveness in some cases, particularly with respect to drainage of mires.

Background and issues

In larger protected areas biological communities continue to exist in relatively natural patterns and age ranges. In smaller protected areas in the southern part of the country this is probably not always the case. Reasonably good data exist throughout the country relating to the age and composition of forest stands and vegetation in general, which if analysed can give a good indication of the ability of the environment to support native biodiversity.

Generally in the north, where protected areas are big, ecological processes are functioning. Although much of the area is classified as wilderness this is challenged by the Sámi, who regard it as a cultural landscape. This viewpoint has some validity in that the major herbivore, which plays a key role in the ecology of the area, is now domesticated in the region. Although in theory reindeer could be left free to find their natural population level, in practice reindeer herding is now an integral part of ecosystem functioning. This is generally successful although changing socio-economic conditions create some stresses and for instance grazing is impacting negatively on the environment in some regions.

In the south, where areas are small and scattered, the situation may vary and most protected areas are not large enough or currently well enough connected to guarantee ecosystem functioning or maintenance of all resident species in perpetuity. Furthermore, lack of special habitats and structural features of forest ecosystems indicated earlier (see Question 2.2) may suggest that resulting processes do not function properly. Lack of natural forest fires may also cause difficulties in maintaining native biodiversity and natural successions in the longer term.

The SAVA studies, the Working Group for protection of forests in southern Finland and the METSO Action Programme have together identified those structural features insufficiently represented in the protected area system. Transitional zones between various ecosystems, such as forest-mire ecotones or terrestrial-aquatic interfaces are not always in a natural state, and their restoration and maintenance should have a priority in restoration efforts within the protected area network. The lack of transition zones is due to the small size of protected areas and problems with respect to their design and boundaries, which in many cases exacerbates the poor integration of protected areas into the wider landscape and seascape. This is in turn exacerbated by the fact that buffer zones and ecological (including hydrological) connections between protected areas, which are essential to the conservation of biological diversity at a landscape level, are satisfactory for only part of the protected area system. These problems are most acute for small protected areas developed in national conservation programmes, and it should be noted that many good examples of protected areas were also found, where biodiversity was managed at the landscape level and integrated with surrounding areas.

Several NGOs expressed disquiet about the impacts of management actions, particularly drainage activities including impacts of earlier drainage, and recently ”renewal drainage”, which means re-ditching of old ditches and some complementary drainage on land bordering small protected areas; new drainage of intact mire areas is forbidden. They felt that in these cases values were almost bound to be lost whatever the protected status.

In traditional human-influenced environments, such as in areas under traditional agricultural practices, disturbance regimes have also changed, which has led to change in many habitats. More importance should also be given to the ecological and hydrological integrity of the aquatic ecosystems in the protected areas. These

problems are in some cases strengthened by the small size and unnatural boundaries of protected areas, which makes the integration with the management of surrounding areas a particularly important priority for development in the future.

In the more immediate term, the NHS is trying to improve ecological processes in the south by restoration methods such as burning and addition of decaying wood.

Recommendations

Management plans for small protected areas need to look beyond the border of the protected area at likely impacts of surrounding management; particularly in the case of protected areas surrounded by state-owned land under different management regimes. Restoration efforts need to be continued and perhaps expanded.

Question 6.4: Are the expectations of visitors generally met or exceeded?

Overview – Good to very good

Most visitors seem satisfied and indeed enthusiastic about the protected areas system.

Background and issues

It appears that most visitors support the protected areas and most reports are positive. We have discussed above (Question 4.5) the way in which such information is collected and made some suggestions as to minor improvements. But our overwhelming feeling is that most visitors enjoy the national parks and other protected areas. However we note that despite Finland's reputation as being a country dedicated to outdoor pursuits, a relatively small proportion of the population visit state protected areas each year: taking into account repeat visitors and foreign visitors something around 10 per cent of the population.

Recommendations

Visitor satisfaction should be monitored and reported as part of a state of the parks system.

Winter visitor, Iso-Syöte Hiking Area. In northern Finland the skiing season is most important for local tourism. (Photo: Tage Lampén)

Question 6.5: Are neighbours and adjacent communities supportive of protected areas and their management?

Overview – Good
There do not seem to be major clashes between local people and protected areas although there is still resistance and some resentment in some communities; this may be gradually changing over time and as the tourism and other economic benefits are recognised.

Background and issues
The RAPPAM assessment suggests that most communities seem to be supporting protected area management, although it should be stressed that the RAPPAM shows managers opinions' rather than directly reporting stakeholders' opinions. The meetings that we had with local stakeholders appeared to support this opinion, including discussions we had with members of the Sámi community, which is one of the groups that have had long disputes with the government. In this case the conflicts centre more on land tenure than on protected area management. However, we must stress that we did not have time to carry out detailed meetings with other stakeholders groups that might have conflicts with particular protected areas. Research at Oulanka Research Station reported above (see Question 4.4) found that 40–60 per cent of local residents felt there were already too many protected areas; although this is not necessarily a comment on management it is indicative that support is not universal. It is also generally believed by NHS staff, and seems to be supported by the meetings we had, that there has been a clear shift in attitudes of stakeholders to a more positive attitude towards protected areas over the last 10–15 years.

It should also be noted that there are reverse tensions from wider society about some local uses of protected areas. Everyman's right is strong in Finland, allowing right of access and camping but also fishing with rod and line. This latter ruling and the strong hunting tradition means that in the north, in virtually all large protected areas including national parks, hunting by local people is allowed to continue and for instance local hunters can apply to hunt moose, bears and even wolverine. This seems at first sight against the spirit of protected areas although the IUCN *Guidelines for Protected Area Management Categories* (Anon. 1994) are precise in stating that in most categories prevention needs to focus on "exploitation or occupation inimical to the purposes of designation" and many examples exist of protected areas where hunting by indigenous and local people is permitted. We are satisfied that to the best of current knowledge the level of hunting allowed is not endangering the long-term stability of these species and that a ban would probably have negative impacts in terms of reactions from local communities. However, we note that a number of NGOs remain unhappy about the extent of hunting and fishing within for instance some of the strictly protected areas and would like to see an increase in the no-hunting zone agreed for the core area of Oulanka National Park. We also note that protected area managers only have limited capacity to monitor hunting in these areas. Purely from a scientific point of view it would be very beneficial to see the impacts of removing hunting and fishing pressure from some more parts of the protected area network.

We note with some concern the continuing illegal hunting particularly of the Wolverine (*Gulo gulo*). Whilst the strong cultural reasons for this are acknowledged, this is a serious problem given the precarious status of this mammal in Finland and we urge Metsähallitus NHS to work with local communities, and particularly the Sámi, to reduce the threats to this species.

Recommendations
Consideration is given to a periodic survey of local attitudes ideally linked to Advisory Committees where these exist, and to surveys of urban attitudes to protected areas. Efforts at building links with local communities and raising awareness of protected area values, as demonstrated by some of the visitor centres with links to municipalities, should be extended.

Overview – Good
There is clearly increasing effort being put into conservation of cultural values and some impressive interpretation work. There is also some concern amongst NHS staff that they have insufficient resources to undertake these new responsibilities. As a first step, a systematic survey of cultural heritage within the protected area network needs to be completed.

Background and issues
Natural Heritage Services has been required to put increasing emphasis on preservation of cultural heritage particularly as it relates to natural heritage (such as traditional forestry and farming, slash and burn agriculture, reindeer herding and traditional buildings). In some protected areas cultural heritage has already been heavily emphasised, such as in Syöte National Park which has the majority of its exhibition space devoted to description of the region's important cultural heritage, incorporating films, interactive virtual displays, 3-D models and old maps. In other protected areas, particularly those established further in the past, there is far less emphasis on historical values.

Rock paintings, Hossa Hiking Area. These paintings date back some 4,000 years. The names of the area tell of a past with Lapp inhabitation. (Photo: Tage Lampén)

An official cooperation with the National Board of Antiquities has been agreed based around a framework agreement that leads in theory to the negotiated development of joint annual work programmes, although currently this does not always happen. (Similar agreements exist with the Geological Survey of Finland, the Finnish Forest Research Institute, the Finnish Game and Fisheries Research Institute, the Finnish Frontier Guard and the Finnish Coast Guard.)

There is a need for a systematic inventory of cultural heritage within the protected area network before any comprehensive assessment can be made of the resources needed for management. Buildings in protected areas are in state ownership, so they are not immediately threatened. In the longer term there could be problems of lack of maintenance unless further resources are made available. An internal SWOT analysis identified a number of weaknesses in management of cultural heritage, including lack of both dedicated funding and specific expertise. Several Natural Heritage Service staff commented that they have acquired many new responsibilities without a proportionate budget and that this was causing problems.

Given changing conditions and a range of new duties with respect to cultural heritage, we felt that it may be worth developing a strategy within the NHS specifically aimed at the maintenance of cultural heritage.

Recommendations
A systematic inventory of cultural heritage within the Finnish protected area system should be completed as soon as possible. The condition of cultural heritage assets should be monitored and reported as part of a state of the parks system.

Section 4: Thoughts for the Future

A possible structure for State of the Parks

Justification

We have suggested that one long-term outcome of the current assessment would be development of a regular "State of the Parks" report for Finland. Along with reporting within and outside Finland, a key function of a *State of the Parks* report would be to increase the assessment within "monitoring and assessment", so that the implications of the data collected are understood and can be translated directly into adaptive management, setting of priorities and targets and, where necessary, appropriate policy responses.

Such an undertaking would require time and resources and therefore needs careful consideration, but we believe that such a development is justifiable for a number of reasons connected with building and maintaining the system within Finland and also as a part of the country's contribution to the wider conservation policy debate.

Adaptive management
A periodic *State of the Parks* report would draw heavily on assessments of threats to protected areas and also management effectiveness, which would need to be integrated into regular site and regional reporting requirements. Such data would provide a rich source of information on strengths and weaknesses of management and on current and future pressures and the *State of the Parks* report would therefore help provide a forum to facilitate adaptive management.

Understanding within the NHS
The report would also be valuable in promoting a wider understanding of protected area values and opportunities within Metsähallitus NHS staff members, including in particular a better understanding of how an individual protected area might fit into a wider national and international conservation strategy. Launch of the report should be accompanied by meetings for permanent and key temporary staff in regional offices to explain and discuss the contents.

Understanding outside the NHS
By pulling together information on parks in a centralised assessment, the report would also help managers to promote the wider benefits of protected areas to users and other members of the public. Individual reports might also feature special focus items on issues of concern at the time (for instance the role of protected areas in promoting tourism).

Cost effective reporting against international commitments
Careful choice of indicators and reporting mechanisms should result in a system which largely meets the requirements of external bodies such as the EU and Ramsar Bureau, as well as internal adaptive management needs.

Finland's international role
The report will, if carried out successfully, also provide a model to the international community. Regular assessments of management effectiveness are now within the *Programme of Work* of the Convention on Biological Diversity and could therefore provide a model that would be of enormous value to other countries.

A number of models already exist, such as those in Australia (Victoria and New South Wales), Brazil, Canada, Nepal and global overviews carried out by WWF, the World Bank and Conservation International. However, there is no "off the shelf" methodology available that would wholly meet the requirements here and Metsähallitus NHS will therefore need to develop a customised approach to achieve maximum benefits from such an approach.

General principles

On the request of the Metsähallitus Natural Heritage Services, the evaluation team has drawn together some general principles that might help provide a framework for assessment in Finland. These are outlined below.

Regular cycle of formal reporting
For any *State of the Parks* report to provide a long term contribution to adaptive management and the improvement of the protected area system it must be systematic and credible. However, reporting is expensive and time consuming and we therefore suggest a regular but occasional report perhaps at five-year intervals.

A standardised template
To ensure continuity the report should follow a standardised framework or template to facilitate analysis and allow comparison over time. This does not mean that every report should be identical and for instance it might be valuable for individual reports to include a special focus on an issue of topical importance.

Collection of information over time
Although reports are probably only justifiable every few years, collection of information should proceed on an annual or perhaps even more regular basis. For example, relevant elements should be incorporated into agency annual reporting and negotiation of the agreement with the Ministry of the Environment and some elements should be the subject of regular updates to the NHS executive. There are a variety of options for reporting including systems that look at the whole protected area system at one time (such as RAPPAM and a model developed by WWF Brazil) and those that report progress at individual sites (such as the management effectiveness tracking tool developed by the World Bank and WWF).

Verification
We suggest that at the time of the *State of the Parks* report efforts are made to check the information by some external team, including people from inside and outside the country. This could either be done independently or in the future as part of a more general approach to verification or certification of protected areas.

Korteniemi Farm, Liesjärvi National Park. A forest ranger's home from 1878, when the State acquired the surrounding land, this farm has been restored for visitors as a living museum. In the summer you can go back to the early 1900s. (Photo: Titta Jylhänkangas)

Transparency
Reports should be publicly available.

Data type
Given the very wide range of different issues that protected areas have to address both qualitative and quantitative information will need to be included within the assessment.

Focused reporting
The assessment should include a threats assessment as is already planned. One result of this could be that the most detailed reporting within *State of the Parks* would be about those protected areas that are at highest risk of degradation and loss of values.

Participation
While the *State of the Parks* report will be driven by Natural Heritage Services staff, compilation of material should involve a wide range of stakeholders and key stakeholder groups should be able to comment on the draft.

Dissemination
We suggest that the report be published in English and Finnish, in both paper form and electronically.

Key performance measures for a State of the Parks report

We propose that the format and contents of the report is based around the framework for management effectiveness developed by the IUCN World Commission on Protected Areas, which suggests gathering information into six main fields:

- Context
- Inputs
- Planning
- Process
- Outputs
- Outcomes.

The report will therefore start by considering the overall status, look in some detail at the process of management and finish by considering the overall effects of protected areas in terms of biodiversity health, ecological integrity, cultural heritage and the wellbeing and opinions of local communities.

Performance measures

Some possible performance measures to be included in *State of the Parks* are outlined below.

Context
- Total number, area and categories of protected areas including maps and if possible illustrative materials (the report will have value outside Finland where readers may be unfamiliar with the Finnish environment)
- Habitats managed in protected areas
- Connectivity of ecosystems within protected areas
- Threats to protected areas based on a regular threat analysis

Inputs
- Trends in annual budget, staff members and other key indicators (equipment, international projects)
- Total value of resources allocated for protected area management

Planning
- Status of plans
  - Use and management plans
  - Nature 2000 Master Plan
  - Wilderness plan
  - Cultural heritage inventories and plans
- Developments in protected area network since the last *State of the Parks* and future proposals

Process
- Number of audits completed
- Number of audit recommendations for corrective action (or recommendations applied)
- Number of successful partnerships and/or volunteer programmes
- Percentage of performance agreements in place or secondments

Outputs
- Reporting on performance against identified targets within national and regional work programmes
- Trends in number of visitors / tourism income

Outcomes

- Trends in populations of agreed target and indicator species (based on biodiversity survey results and monitoring of threatened Red Listed species)
- Trends in population and status of selected invasive species
- Trends in habitat condition
- Number of restoration programmes successfully completed or on schedule
- Outcomes of participatory rural appraisals with selected communities (including those in some protected areas where there have been disputes)
- Trends in public/visitor complaints
- Trends in visitor impacts

Indicators

The performance measures as listed are preliminary suggestions that will need refinement. Once a set of performance measures is agreed upon, a precise indicator will need to be developed for each of these. In terms of effectiveness it is desirable to limit indicators – ideally to a maximum of 20 overall and no more than five per heading.

Temporal and physical scale

The State of the Parks reporting system should provide an opportunity to report meaningfully at various scales and levels of details. Park managers may report on a park level; regional directors will have to amalgamate these for a regional-wide assessment and in turn regional assessments need to be amalgamated into a single national figure.

A comment on the structure of the assessment

The current research represents one of the largest protected area assessments undertaken to date within the context of the IUCN WCPA assessment framework (Fig. 1) and the first such national-level assessment initiated by a protected area agency in a developed country. Given the current promotion of assessments within the Convention on Biological Diversity's *Programme of Work on Protected Areas*, it is likely to be looked at carefully by other countries interested in developing similar assessments of their own. This final brief section looks at some lessons that might be drawn from the assessment.

The WCPA framework provided a useful context

The six main fields of the framework provided the necessary context, ensuring that the team considered all relevant aspects of management including the most difficult but most important area of outcomes. The specific questions were a useful way of focusing attention and drawing out information although it should be noted that we revised, added to and subtracted from these as we went through the process of evaluation.

The RAPPAM and background research to provide data were both essential

In the relatively short timescale available, having a lot of information already available for assimilation before and during the field visit made it possible to complete the project. The RAPPAM methodology was useful in getting perspectives from protected area managers and NHS staff also point out that it was useful in the unforeseen way of introducing managers and other staff members to the WCPA framework and the issues involved.

Field visits played a key role in gaining understanding

Although the field trip was punishing in its intensity, it was critical in building up a picture of the state of the parks that could not be built up from written comments or conversations remote from the site and we would strongly advise against assessments that do not involve a substantial elements of **ground-truthing**. The fact that two of the team had already visited several protected areas in the past helped the process. Meetings with stakeholders were also very important in developing a thorough picture of the state of the protected area network.

A wide expertise within the team was useful
The team members all came from very different backgrounds. Having someone with experience in managing a similar protected area network was extremely useful and perspectives from inter-governmental and NGO were also necessary in building a complete picture. A local but independent expert is indispensable in understanding local issues and checking the accuracy of statements.

What would we have done differently?

More meaningful responses may have been provided to the specific questions posed if the set of questions could have been provided to the NHS a full six months before the field evaluation (now they were provided two months in advance). Stakeholder involvement in the evaluation might have been enhanced if both the questions and the NHS draft response could have been made available to stakeholders, say, three months before the field evaluation. Armed with both the agency responses and review comments by stakeholders, the work of the Evaluation Team could have been more precisely targeted. Such an approach would necessarily extend the lead time in the overall evaluation process but might also speed up the report finalization phase.

The precise format used is probably less important than assembling a good team and spending time to read, listen to people and ask probing questions.

Our overall advice would not be too doctrinaire in approaching the issue. We should probably have given ourselves more time in the country, both to meet with some stakeholders informally without NHS staff and perhaps to see a wider range of protected areas. It might also have been worth meeting more with some of the groups most affected by protected areas, such as small forest owners, state forest enterprises and hunting groups to find out their perspectives.

"Ground-truthing" at Kiilopää, Urho Kekkonen National Park. Evaluation Team leader Brian Gilligan at work. (Photo: Nigel Dudley)

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Many people gave up valuable time to talk with us, travel with us and make sure we could gain a good picture of Finland's protected areas and we are more than grateful to all the people listed in Appendix 4. We were, as ever, very warmly welcomed and well looked after in Finland. We are particularly grateful to the NHS Director, Dr. Rauno Väisänen for arranging the whole exercise and taking time out of his very busy schedule to travel with us and to Ms. Mervi Heinonen for collecting the information and answering our questions and demands with such good grace.

We were also impressed that Ms. Päivi Valkama, Senior Budget Secretary from the Ministry of Finance responsible for protected areas, took time to travel with us for several days to get an outsiders view of the protected area system, and we enjoyed her company. We are grateful to the Steering Group and its Chair, Mr. Timo Tanninen, for guiding the whole process. Despite excellent help, any remaining errors are entirely our own responsibility.

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Terms of Reference

The following contains extracts from the complete terms of reference of the project.

The Natural Heritage Services of Metsähallitus (NHS) will organise a comprehensive, science-based, international management effectiveness evaluation (MEE) of the Finnish protected area system. The MEE will be organised in close cooperation with the Ministry of the Environment (MoE), WWF and other stakeholders, utilising the WCPA/IUCN MEE framework.

The MEE will cover all aspects of the WCPA framework. Especially, it shall focus on the management of the whole national system of protected areas (PAs) at the agency (NHS) level. The national system includes all the areas managed by the NHS, including protected areas, wilderness areas, national hiking areas and public waters. The MEE shall also include other state-owned and private PAs. In addition, the integration of PA management with other land use practices should be assessed.

Timing for the MEE of the Finnish PA system is very adequate. The previous and only international evaluation of the PAs in Finland was carried out by Harold K. Eidsvik (Canada) and Hans B. Bibelriether (Germany) in 1994. Since then, a major consolidation process of the PA administration has taken place in Finland, together with a fast increase in the number and total area of PAs and in the resources for PA management.

Objective

The basic aim of the MEE is to assess how well the Finnish PA system is meeting:
- its conservation objectives and protecting its biological and cultural values, and
- its social objectives by providing recreational services and infrastructure for regional sustainable development.

The concrete, general objective of the MEE is to enable the NHS and the MoE to evaluate whether the chosen approaches in PA management are sound and sustainable and whether the resources made available are being used in an appropriate and efficient way.

Another target of the MEE of Finnish PA system is to provide a platform of testing and developing a comprehensive and outcome-focused model on the basis of the WCPA/IUCN framework that can be used to evaluate the MEE at agency level instead of park level, and to harmonise the data gathering, concepts and criteria and indicators of good protected area management. The MEE shall also develop cooperation and partnerships with NGOs and other stakeholders, and contribute to WWF's international targets of both the Forest and Marine programmes.

Expected results

The expected results of the MEE are:
- concise conclusions on strengths and weaknesses of the PA management in Finland;
- recommendations for further improvements in future PA management policy, objectives, practices and resource allocation, documented in a practically oriented report.

The MEE results will be used in policy and strategic level decision-making. More specifically, they will be used to:
- promote better PA management at system, process and park level;
- guide planning, resource allocation and priority setting;
- provide accountability and transparency;
- increase public awareness, involvement and support, and
- promote the routine use of MEE tools and techniques in improving PA management.

The scope of the MEE

The MEE shall assess the general relevance, effectiveness, efficiency and impact of the PA management. The main focus of the MEE should be on (1) the adequacy and appropriateness of management, but also (2) the delivery of the PA objectives should be covered to the extent possible. (3) The design of PA system or individual PAs should also be covered as a component of management effectiveness.

First, as regards to the appropriateness of management systems and processes, the MEE should assess how adequate the available resources (staff, funds, equipment and facilities) are in relation to the management needs. Have the human, material and financial resources made available been appropriate in terms of quantity and quality? Have resources been allocated in a planned, balanced and justified manner?

Second, the assessment of the delivery of protected area objectives shall cover both outputs and outcomes. The MEE shall evaluate what has been done by the management, and to what extent have targets, work programmes or plans have been implemented and what progress is being made in implementing long-term plans. Approaches to outcome evaluation involve long-term monitoring of the condition of biological and cultural resources of the PA system, socio-economic aspects of use, and the impacts of management on local communities. Outcome evaluation should also consider whether the values of PA system have been maintained and whether threats to these values are being effectively addressed.

Third, a starting point for the MEE shall be an assessment of the current status of PA system to help placing the management decision in context. The MEE should also examine how adequate is (and which major constrains for proper management are there in) the PA legislation and policy, administrative structures and procedures, PA design, and especially PA management planning, in relation to the intended outcomes for the PA system.

The MEE of Finnish PA system will be carried out partly simultaneously with an outcome-orientated evaluation of the National Biodiversity Action Plan 1997–2005, which will be organised by the MoE in 2003–2005. The results of the MEE of PA system should be available to the Evaluation team of the Action Plan.

More specifically, the MEE should address (but not necessarily be limited to) the following issues:

- challenges of MEE techniques: Process-wise approach at agency level compared to park-wise approach;
- management by vision compared to management by rules and instructions;
- clarity of organisational roles: regional responsibilities, thematic guidance and development;
- adaptive management and learning organisation;
- the role of environmental management system;
- science-based management: quality of baseline information, appropriateness of technology, cooperation with research organisations
- site management and restoration policy;
- "Reloading the matrix": integration of PAs in the land use of surrounding areas;
- interpretation and customer services;
- the current and potential role of the NHS in maintaining cultural values;
- management planning and participatory approach, and
- partnerships, cooperation with relevant agencies/stakeholders.

Methodology

The MEE shall include a comprehensive, nationwide, agency-level MEE of the whole PA system, possibly a more detailed evaluation of heavily used parks and examples of different protected area categories. The MEE shall cover all aspects affecting management effectiveness using the WCPA framework (Hockings et al. 2000, Hockings et al. 2003, Leverington & Hockings 2003). The MEE shall be carried out in 2003 (planning phase) and 2004 (implementation phase). The implementation phase will include a field evaluation of 12 days in Finland, including visits to both terrestrial and marine protected areas. The concrete work plan for the MEE will be compiled by the invited Evaluation Team (ET) and the details of the evaluation process will be described there. The methodology should be simple, repeatable and transparent. Accepted tools like RAPPAM (Ervin 2003) can be utilised when appropriate.

The NHS fully supports the MEE and is prepared to make all necessary documents available to the MEE, and provide translation of any non-English documents when needed. In general, the MEE shall by participatory and based on a combination of external professional review and self-review of the PA management by NHS

staff. The Evaluation Team will be responsible for determining the number, type and quality of interviews, stakeholder meetings and/or workshops, once they have familiarised themselves with the task. As an aid to this, it is suggested that at least the following meetings will be organised, in addition to meetings with the staff members of the NHS:

- the Scientific Advisory Board of the NHS and relevant other scientific organisations;
- staff members of the Ministry of the Environment;
- staff members of Ministry of the Agriculture and Forestry;
- representatives of environmental NGOs;
- representatives of local and regional authorities, environment centres, municipalities, etc.;
- representatives of forest sector;
- representatives of tourism industry and businesses, and
- representatives of local and indigenous (Sámi) people.

The Evaluation Team will be responsible for summarising and compiling the MEE. A high level of professionalism is needed to maintain correct balance and harmonious integration of views.

The reporting language is English. The final draft report of the MEE is to be submitted by ET to the Steering Group (SG) by the end of October 2004. The final report should be accepted after the possible amendments on the basis of the comments from SG before the end of year 2004. The report will be published in English in the NHS Nature Protection Publications ("Metsähallituksen Luonnonsuojelujulkaisuja") series and in pfd form at NHS website.

The report should include all the relevant evaluation issues but elaborate on the most important ones in more detail. Clear and concrete recommendations on how to improve the performance need to be the essence of the report. One central aspect of technical excellence of an MEE report is the way the analyses are carried out. Consequently, it is important that the evaluation report uses a clear chain of analysis, which can be summarised as: data – analysis – conclusions – recommendations. The analysis must form a logical chain and be systematic in its application and presentation. A failure to do so would reduce the utility and hence the quality of the valuation of the evaluation report. The report shall be submitted in electronic form to the NHS. It is preferable that the report be delivered as one single data file. In all cases the number of data files should not exceed three.

The recommendations and conclusions of the MEE shall be presented to the MoE, the NHS and other stakeholders in January 2005 with the ET and SG members invited to attend. At the same occasion, the NHS and WWF will organise a press conference with ET and SG members present. The results of the MEE are made open to the public at large, available to all interested parties, and they will be used to actively promote debate of the management effectiveness of PAs. The results can be used to show trends and identify gaps and constraints of PA management. The NHS is in charge of the internal communications of the results of the MEE within the NHS.

Mandate

The Steering Group (SG) will discuss and approve these terms of reference. Although the ET is entitled to discuss any matters pertinent to its assignment with authorities and relevant bodies concerned, it is not authorised to make any commitments on behalf of the NHS or any other body. The SG has right and responsibility to advise and comment the work of ET. The final draft evaluation report prepared by the ET shall be subject to the approval of the SG.

Management Effectiveness Evaluation (MEE) – Finland

The following appendix contains the assessment criteria used in drawing up the one word assessments given at the start of the overview in Section 3 after each question in the main part of the report.

1 Agency approach and context

1.1 Is there a clearly articulated vision for the on-going development and management of the Finnish protected area (PA) system?

Assessment criteria

Poor	No articulated vision. Identification of values is incomplete and general; hence of little value for reserve design and management.
Fair	Limited vision articulated. Identification of values complete but there is insufficient detail for reserve design and management.
Good	Clear national vision articulated. Identification of values is complete and there is sufficient detail on most values to guide reserve design and day to day management.
Very good	National vision articulated with strong linkage to European context and international commitments. Identification of values is complete and there is sufficient detail on all values to guide reserve design, strategic and day-to-day management.

1.2 Does the legislative and administrative framework adequately support the effective functioning of the PA system?

Assessment criteria

Poor	Legislative and administrative framework is an impediment to effective functioning of the PA system.
Fair	Legislative and administrative framework permits functioning of PA system albeit with frequent and widespread problems.
Good	Legislative and administrative system provides for effective functioning of the PA system within constraints.
Very good	Legislative and administrative framework supports and encourages effective functioning of the PA system.

1.3 Is there a cohesive and nationally co-ordinated approach to PA management?

Assessment criteria

Poor	Lack of cohesion and co-ordination obstruct effective management.
Fair	Limited cohesion and co-ordination cause frequent and widespread problems.
Good	Cohesion and co-ordination are sufficient to permit effective management of most sites.
Very good	Cohesion and co-ordination support effective management of all sites.

1.4 Is trans-boundary and regional co-operation established and maintained in a manner which supports effective management of Finnish protected areas?

Assessment criteria

Poor	Lack of cohesion and co-ordination obstruct effective management.
Fair	Limited cohesion and co-ordination cause frequent and widespread problems.
Good	Cohesion and co-ordination are sufficient to permit effective management of most sites.
Very good	Cohesion and co-ordination support effective management of all sites.

1.5 Are the values of the PA system well documented, assessed and monitored?

Assessment criteria

Poor	Values not systematically documented, assessed or monitored.
Fair	Values generally identified but not systematically assessed and monitored.
Good	Most values systematically identified and assessed and monitored for most sites.
Very good	All values systematically identified and assessed and monitored for all sites.

1.6 Are the threats to PA system values well documented and assessed?

Assessment criteria

Poor	Threats not systematically documented or assessed.
Fair	Threats generally identified but not systematically assessed.
Good	Most threats systematically identified and assessed for most sites.
Very good	All threats systematically identified and assessed for all sites.

1.7 Do Finnish PA management objectives harmonise with Natura 2000 objectives?

Assessment criteria

Poor	Objectives contradict Natura 2000 objectives.
Fair	Objectives neither contradict nor support Natura 2000 objectives.
Good	Most objectives complement relevant Natura 2000 objectives.
Very good	All objectives complement relevant Natura 2000 objectives.

1.8 Do Finnish PA management objectives harmonise with wider cultural objectives including those relating to the Sámi?

Assessment criteria

Poor	Objectives contradictory.
Fair	Objectives neither contradict nor support wider cultural objectives.
Good	Most objectives generally mutually supportive.
Very good	All objectives mutually supportive.

2 Planning

2.1 Are protected areas identified and categorised in an organised system?

Assessment criteria

Poor	Protected areas not categorised or systematically organised.
Fair	Protected areas generally categorised but not systematically organised.
Good	Most protected areas categorised and systematically organised.
Very good	All protected areas categorised and systematically organised.

2.2 Are individual protected areas designed and established through a systematic and scientifically based criteria and process with a clearly articulated vision?

Assessment criteria

Poor	PA design and establishment totally ad hoc.
Fair	PA design and establishment generally systematic but not scientifically based.
Good	Design and establishment of most PAs systematic and scientifically based.
Very good	Design and establishment of all PAs systematic and scientifically based.

2.3 Are established reserves covered by comprehensive management plans?

Assessment criteria

Poor	No relevant management plans in place.
Fair	Some management plans exist but not comprehensive.
Good	Most PAs covered by relevant management plans which are comprehensive.
Very good	All PAs covered by relevant management plans which are comprehensive.

2.4 Are management plans routinely and systematically updated?

Assessment criteria

Poor	No process in place for systematic review and update of plans.
Fair	Few management plans routinely and systematically updated.
Good	Most management plans routinely and systematically updated.
Very good	All management plans routinely and systematically updated.

2.5 Are protected areas located in places with the highest/most threatened biodiversity values?

Assessment criteria

Poor	PA locations unrelated to level of threat to biodiversity values.
Fair	Some PA locations cover areas with most highly threatened biodiversity values.
Good	Most PA locations cover areas with most highly threatened biodiversity values.
Very good	All PA locations cover areas with highly threatened biodiversity values.

2.6 Are stakeholders given an opportunity to participate in planning?

Assessment criteria

Poor	Little if any opportunity for stakeholder participation in planning.
Fair	Stakeholders participate in some planning.
Good	Stakeholders participate in most planning processes.
Very good	Stakeholders routinely and systematically participate in all planning processes.

2.7 Are restoration and reintroduction programmes systematically planned and monitored?

Assessment criteria

Poor	Restoration and reintroduction programmes are entirely ad hoc.
Fair	Limited planning and monitoring programmes are in place for restoration and reintroduction programmes.
Good	Restoration and reintroduction programmes are generally well planned and monitored.
Very good	Restoration and reintroduction programmes are thoroughly planned and monitored.

2.8 Are protected areas integrated into a wider ecological network following the principles of the ecosystem approach?

Assessment criteria

Poor	Protected areas not integrated into a wider network.
Fair	Some limited attempts to integrate protected areas into a network.
Good	Protected areas are generally quite well integrated into a network.
Very good	Protected areas are fully integrated into a wider network.

3 Resources

3.1 Are personnel and resources well organised and managed with access to adequate resources?

Assessment criteria

Poor	Few, if any, resources explicitly allocated for PA management.
Fair	Some resources explicitly allocated for PA management but not systematically linked to management objectives.
Good	Most PAs or groups of PAs have adequate resources explicitly allocated towards achievement of specific management objectives.
Very good	All PAs or groups of PAs have adequate resources explicitly allocated towards achievement of specific management objectives.

3.2 How have resourcing levels varied with increases in protected areas in recent years?

Assessment criteria

Poor	Resourcing levels have remained static or reduced.
Fair	Some increase in resourcing levels but not systematically allocated.
Good	Resourcing levels proportionally increased for management of most new areas.
Very good	Resourcing levels routinely proportionally increased for management of all new areas.

3.3 At the park level are resources linked to priority actions?

Assessment criteria

Poor	Resources allocated ad hoc.
Fair	Some specific allocation for management of each PA or group of PAs.
Good	Comprehensive formulae systematically applied to decide most resource allocations to most individual PAs or groups of PAs.
Very good	Comprehensive formulae systematically applied to decide allocation of resources for management of individual PAs or groups of areas.

3.4 What level of resources is provided by partners and/or volunteers?

Assessment criteria

Poor	Partners/volunteers either contribute nothing or are left to do everything in the management of the PA or group of PAs.
Fair	Partners/volunteers make some contribution to management of the PA or group of PAs but opportunities for collaboration are not systematically explored.
Good	Partner/volunteer contributions are systematically sought and negotiated for the management of most PAs or groups or PAs.
Very good	Partner/volunteer contributions are systematically sought and negotiated for the management of all PAs or groups of PAs..

3.5 Do PA managers consider resources to be sufficient?

Assessment criteria

Poor	Most managers consider resources insufficient for most tasks.
Fair	Some managers consider resources sufficient most tasks.
Good	Most managers consider resources sufficient for most tasks.
Very good	All managers consider resources sufficient for most tasks.

4 Process

4.1 Is management performance against relevant planning objectives and management standards routinely assessed and systematically audited as part of an on-going 'continuous improvement' process?

Assessment criteria

Poor	No performance management system exists.
Fair	Performance management is only loosely linked to planning objectives and identified management standards.
Good	Most aspects of management performance are routinely assessed and systematically audited with reference to planning objectives and identified management standards.
Very good	All important aspects of management performance are routinely assessed and systematically audited with reference to planning objectives and relevant management standards.

4.2 Is NHS staff performance management linked to achievement of management objectives?

Assessment criteria

Poor	No linkage between staff performance management and management objectives.
Fair	Some linkage between staff performance management and management objectives, but not consistently or systematically assessed.
Good	Performance management for most staff is directly linked to achievement of relevant management objectives.
Very good	Performance management of all staff is directly linked to achievement of relevant management objectives.

4.3 Is there external and independent involvement in internal audit?

Assessment criteria

Poor	No external and independent involvement in internal audit.
Fair	Limited external involvement in formulation and implementation of audit and compliance program but independence questioned by stakeholders.
Good	Significant external involvement in formulation and implementation of audit and compliance program but independence and or capability of some members of audit committee questioned by some stakeholders.
Very good	Comprehensive external involvement in formulation and implementation of audit and compliance program and independence and capability of audit committee acknowledged by all key stakeholders.

4.4 Is there effective public participation in PA management in Finland?

Assessment criteria

Poor	Little or no public participation in PA management.
Fair	Opportunistic public participation in some aspects of PA management.
Good	Systematic public participation in most aspects of PA management.
Very good	Comprehensive and systematic public participation in all important aspects of PA management.

4.5 Is there a responsive system for handling complaints and comments about PA management?

Assessment criteria

Poor	No systematic approach to handling complaints.
Fair	Complaints handling system operational but not responsive to individual issues and limited follow up provided.
Good	Co-ordinated system logs and responds effectively to most complaints.
Very good	All complaints systematically logged in co-ordinated system and timely response provided with minimal repeat complaints.

5 Output

5.1 Is adequate information on PA management publicly available?

Assessment criteria

Poor	Little or no information on PA management publicly available.
Fair	Publicly available information is general and has limited relevance to management accountability and the condition of public assets.
Good	Publicly available information provides detailed insight into major management issues for most PAs or groups of PAs.
Very good	Comprehensive reports are routinely provided on management and condition of public assets in all PAs or groups of PAs.

5.2 Are visitor services appropriate for the relevant protected area category?

Assessment criteria

Poor	Visitor services and facilities are at odds with relevant PA category and/or threaten PA values.
Fair	Visitor services and facilities generally accord with relevant PA category and don't threaten PA values.
Good	All visitor services and facilities accord with relevant PA category and most enhance PA values.
Very good	All visitor services and facilities accord with relevant PA category and enhance PA values.

5.3 Are management related trends systematically evaluated and routinely reported?

Assessment criteria

Poor	Little or no systematic evaluation or routine reporting of management related trends.
Fair	Some evaluation and reporting undertaken but neither systematic nor routine.
Good	Systematic evaluation and routine reporting of management related trends undertaken for most PAs or groups of PAs.
Very good	Systematic evaluation and routine reporting of management related trends undertaken for all PAs or groups of PAs.

5.4.1 Is there a systematic maintenance schedule in place for built infrastructure/assets?

Assessment criteria

Poor	No systematic inventory or maintenance schedule.
Fair	Systematic inventory undertaken and maintenance schedule in place for some sites.
Good	Systematic inventory provides the basis for maintenance schedule for most sites.
Very good	Systematic inventory provides the basis for maintenance schedule for all sites.

5.5 Does Finland fulfil its monitoring and reporting obligations under European Directives and international conventions?

Assessment criteria

Poor	Few, if any, obligations fulfilled.
Fair	Some fulfilled to a high standard in a timely manner, all fulfilled in due course.
Good	Most fulfilled to a high standard and all completed in a timely manner as required.
Very good	All fulfilled to a high standard and in a timely manner.

6 Outcomes

6.1 Are threatened species populations stable or increasing?

Assessment criteria

Poor	Threatened species populations declining.
Fair	Some threatened species populations increasing, most others stable.
Good	Most threatened species populations increasing, most others stable.
Very good	All threatened species populations either increasing or stable.

6.2 Are selected indicator species within acceptable ranges?

Assessment criteria

Poor	Most selected indicator species outside acceptable ranges.
Fair	Many selected indicator species outside acceptable ranges.
Good	Most selected indicator species within acceptable ranges.
Very good	All selected indicator species within acceptable ranges.

6.3 Are biological communities at a mix of ages and spacings that will support native biodiversity?

Assessment criteria

Poor	Biological communities unlikely to be able to sustain native biodiversity.
Fair	Some biological communities likely to be able to sustain native biodiversity.
Good	Most biological communities likely to be able to sustain native biodiversity.
Very good	All biological communities likely to be able to sustain native biodiversity.

6.4 Are the expectations of visitors generally met or exceeded?

Assessment criteria

Poor	Expectations of visitors generally not met.
Fair	Expectations of many visitors to many sites are met.
Good	Expectations of most visitors to most sites are met.
Very good	Expectations of most visitors to all sites are met.

6.5 Are neighbours and adjacent communities supportive of PA management?

Assessment criteria

Poor	Neighbours/adjacent communities hostile.
Fair	Key neighbours/communities supportive.
Good	Most neighbours/communities supportive of PA management for most sites.
Very good	Most neighbours and communities supportive of PA management for all sites.

6.6 Are cultural heritage assets protected?

Assessment criteria

Poor	Little or no management undertaken, or despite management efforts, deterioration of cultural heritage assets continues, or values are unknown.
Fair	Some management activity, but deterioration continues.
Good	Planned approach to management underway at most sites and deterioration of assets is being redressed.
Very good	Planned approach to management underway at all sites and deterioration of assets is being significantly redressed.

Evaluation Trip Schedule

The evaluation sites are presented in Figure 8 on page 23. Sites in the eastern lake area (Linnansaari National Park and Siikalahti Nature Reserve) were visited by two evaluators prior to this field trip.

Helsinki–Vantaa

Sunday 8th August
Arrival at Helsinki-Vantaa airport, by taxi/bus to hotel in Helsinki

Monday 9th August
By train to Vantaa
Meeting of the evaluation team at Metsähallitus headquarters, Vantaa
Meetings with Metsähallitus Natural Heritage Services (NHS) key staff members
By train to Helsinki

Tuesday 10th August
Meetings with key persons of the Ministry of the Environment (MoE) and the Ministry of Agriculture and Forestry
Seminar at the MoE: Science and forestry issues with Scientific Advisory Board and NGOs
Coffee/drinks with media representatives at the MoE (press release in the afternoon)
Visit to Nuuksio National Park by bus, 20 km (media included), visitor centre, tourism lodge and walk through the park
Return to Helsinki

Southwestern Finland

Wednesday 11th August
By train to Vantaa
Short briefing on NHS, Southern Finland
By car to Torronsuo National Park, 80 km, watchtower
By car to Häme Visitor Centre, 10 km, lunch in the restaurant
By car to Liesjärvi National Park, 10 km including visits to Saukonkorpi (habitat restoration site) and Korteniemi farm house
Meetings with park staff and stakeholders on the way
By car to hotel in Nauvo, SW archipelago, 150 km

Thursday 12th August
By car to Korpoström Visitor Centre, 30 km
Meetings with park staff and stakeholders
Mini seminar: coastal issues
Boat cruise in the Archipelago National Park
Lunch on Berghamn Island and presentation of cultural management
Landing on an uninhabited island on the edge of the Archipelago, presentation on control of mink
By car to hotel in Parainen, 30 km

Friday 13th August
By car to Teijo National Hiking Area, 80 km
Lunch at Kirjakkala Centre
Return to Vantaa by car, 130 km
Taxi to Helsinki-Vantaa airport,
Flight to Ivalo, NE Lapland
By car to hotel at Saariselkä ski resort area, 50 km

Northern Lapland

Saturday 14th August
Meetings with park staff at Hotel Tunturi-hotelli
Visit to the Urho Kekkonen National Park, hiking a trail
By car to Kiilopää
By car to hotel in Inari, 90 km
Dinner at Siida – Northern Lapland Nature Centre

Sunday 15th August
By car to Lemmenjoki National Park, 45 km
By boat to Ravadas, hiking to the Ravadas hut
By boat to Njurgalahti
Booking into Hotel Lemmenliekki
Meeting of the evaluation team at the hotel
Visit to atelier of Kaija Palto
Dinner with Kaija and Heikki Palto

Monday 16th August
By car to Inari, 45 km
Breakfast at Siida – Northern Lapland Nature Centre
Exhibitions at Siida – Northern Lapland Nature Centre and Sámi Museum
Meetings with park staff
Lunch at Northern Lapland Nature Centre
Stakeholder seminar: Sámi and tourism issues
By car to Ivalo, 45 km
Return flight to Helsinki-Vantaa airport, by taxi to hotel in Vantaa

Northeastern Finland

Tuesday 17th August
Flight to Kuusamo
By car to Karhuntassu, Customer Service and offices, <10 km
Meetings with park staff and stakeholders
By car to Hossa National Hiking Area, 90 km
Hossa Visitor Centre
By car to Syöte National Park, 130 km
Accommodation and dinner at Hotel Iso-Syöte

Wednesday 18th August
Syöte Visitor Centre
By car to Juuma, 120 km
Basecamp Juuma – meeting with NP PAN Parks Group
Hiking trip: Pieni Karhunkierros (12 km) in Oulanka National Park
Accommodation, sauna and dinner at Basecamp, Oulanka

Thursday 19th August
By car to Kiutaköngäs, 20 km
Visit to Oulanka Visitor Centre and Kiutaköngäs waterfall
Oulanka Biological Station (University of Oulu)
Return by car to Kuusamo airport, 60 km
Return flight to Helsinki-Vantaa airport, by taxi/bus to hotel in Helsinki

Helsinki–Vantaa

Friday 20th August
Meeting of the evaluation team at Metsähallitus in Vantaa
Feed-back meeting and the preliminary evaluation results at Metsähallitus
By train to Helsinki
Dinner at a restaurant in Helsinki

Saturday 21st August
Departure from Helsinki-Vantaa airport

People Met and Interviewed during the Evaluation

Monday 9th August

Meetings with Metsähallitus Natural Heritage Services (NHS) key staff members

Rauno Väisänen, NHS Director
Aimo Saano, Research Manager
Anu Vauramo, Planning Manager
Lassi Karivalo, Senior Planning Officer, International Relations
Martti Aarnio, Senior Planning Officer, Recreation Services
Tapani Mikkola, Customer Service Manager
Johanna Ala-Reini, Information Systems Manager
Markku Vickholm, Financial Manager
Matti Määttä, Regional Director, NHS Eastern Finland
Mervi Heinonen, Information Specialist

Tuesday 10th August

Meetings with key persons of the ministries

Ministry of the Environment
Ilkka Heikkinen, Director, Nature Conservation
Pekka Salminen, Nature Conservation Counsellor
Jukka-Pekka Flander, Senior Adviser, Nature Conservation
Heikki Korpelainen, Legal Adviser, Nature Conservation
Esko Jaakkola, Environmental Counsellor, Nature Conservation
Riitta Rainio, Director General, Administrative Unit (member of the Metsähallitus Board)
Ministry of the Agriculture and Forestry
Ville Schildt, Senior Officer, Department of Forestry
Ministry of Finance
Päivi Valkama, Senior Budget Secretary
Metsähallitus
Rauno Väisänen, NHS
Lassi Karivalo, NHS

Stakeholder seminar at Ministry of the Environment (MoE): forestry and science issues

Metsähallitus
Rauno Väisänen, NHS
Aimo Saano, NHS
Lassi Karivalo, NHS
Petri Heinonen, Environmental Specialist, Forestry Unit
Juha Mäkinen, Director of Communicaltions
Ministries
Ilkka Heikkinen, Ministry of the Environment
Esko Jaakkola, Ministry of the Environment
Mikko Kuusinen, Senior Adviser, Ministry of the Environment
Ville Schildt, Ministry of Agriculture and Forestry
Päivi Valkama, Ministry of Finance

Scientific Advisory Board (SAB)
Jari Niemelä, Professor, University of Helsinki
Jari Kouki, Professor, University of Joensuu
Tuija Sievänen, ResearcherFinnish Forest Research Institute
Harto Linden, Research Professor, Finnish Game and Fisheries Research Institute
Finnish Environment Institute
Raimo Virkkala, Senior Researcher
Jukka-Pekka Jäppinen, Senior Adviser
Tapio Lindholm, Senior Researcher
WWF Finland
Timo Tanninen, CEO
Harri Karjalainen, Forest Manager
Suomen luonnonsuojeluliitto (Finnish Association of Nature Conservation)
Olli Turunen

Coffee with media at the MoE (media release in the afternoon)

Hedda Biström, Hufvudstadsbladet (daily newspaper)

Visit to Nuuksio National Park by car/bus, 20 km (media included)

Jere Rauhala, Regional Manager, NHS Southern Finland, Metsähallitus
Hannu Ormio, Senior Planning Officer, NHS Southern Finland, Metsähallitus
Hanna Ylitalo, Senior Planning Officer, NHS Southern Finland, Metsähallitus

Wednesday 11th August

Liesjärvi National Park – Häme Visitor Centre – Torronsuo National Park: meetings with staff and stakeholders

Metsähallitus, NHS Southern Finland
Erkki Virolainen, Regional Director
Aulikki Alanen, Planning Manager
Annukka Rasinmäki, Customer Service Manager
Jere Rauhala, Regional Manager
Titta Jylhänkangas, Customer Service Officer
Annamari Ilola, Foreman (Korteniemi Farm House)
Stakeholders
Jukka-Pekka Flander, Senior Adviser, Ministry of the Environment
Raimo Virkkala, Senior Researcher, Finnish Environment Institute
Matti Setälä, Municipal Director, Municipality of Tammela
Eila Lautanen, Head of Division, Natural Resources Sector, Häme Polytechnic

Thursday 12th August

Korposträm Visitor Centre: meetings with staff and stakeholders

Jouko Högmander, Regional Manager, NHS Southern Finland, Metsähallitus
Leif Lindgren, Conservation Biologist, NHS Southern Finland, Metsähallitus
Jan Ekebom, Senior Planning Officer, Marine Biology, NHS Central Unit, Metsähallitus
Outi Engström, Head of Land Use Department, SW Finland Regional Environment Centre
Anita Mäkinen, Marine Officer, WWF Finland

Friday 13th August

Teijo National Hiking Area: meeting with staff

Jouko Högmander Regional Manager, NHS Southern Finland, Metsähallitus
Anne Muuri, Planning Officer, NHS Southern Finland, Metsähallitus
Katja Aalto, Customer Service Officer, NHS Southern Finland, Metsähallitus

Saturday 14th August

Meetings with Northern Lapland District for Wilderness Management regional unit staff and stakeholders at Hotel Tunturihotelli; visit to Urho Kekkonen National Park

Pekka Salminen, Nature Conservation Counsellor, Ministry of the Environment
Pirjo Seurujärvi, Regional Director, Metsähallitus
Yrjö Norokorpi, National Park Director, Metsähallitus
Sakari Kankaanpää, National Park Director, Metsähallitus
Liisa Kajala, Wilderness Planning Officer, Metsähallitus
Juha Suomi, Ranger, Metsähallitus
Antero Aikio, Ranger, Metsähallitus
Aini Magga, Guide, Metsähallitus
Pirjo Kouvo, Managing Director, Suomen Latu, Kiilopää

Sunday 15th August

Meetings with Northern Lapland District for Wilderness Management regional unit staff and stakeholders; visit to Lemmenjoki National Park

Pekka Salminen, Nature Conservation Counsellor, Ministry of the Environment
Pirjo Seurujärvi, Regional Director, Metsähallitus
Yrjö Norokorpi, National Park Director, Metsähallitus
Liisa Kajala, Wilderness Planning Officer, Metsähallitus
Jari Kangasniemi, Ranger, Metsähallitus
Juha Tiainen, Boat Trip Guide, Ahkun tupa, Lemmenjoki
Leena Magga, Guide, Lemmenjoki Nature Information Hut, Metsähallitus
Kaija and Heikki Paltto, Ateljé Paltto, Lemmenjoki

Monday 16th August

Siida – Northern Lapland Nature Centre: visit and meeting with staff

Tarmo Jomppanen, Director of Sámi Museum
Rauno Väisänen, NHS Director, Metsähallitus
Pirjo Seurujärvi, Regional Director, Metsähallitus
Yrjö Norokorpi, National Park Director, Metsähallitus
Liisa Kajala, Wilderness Planning Officer, Metsähallitus
Pekka Salminen, Nature Conservation Counsellor, Ministry of the Environment
Pekka Aikio, Chairman, Sámi Parliament
Veikko Feodoroff, Elected Man, Skolt Sámi People
Anne Harju, Managing Director, Inari Event
Maria-Astrén-Riipi, Managing Director, Northern Lapland Tourism Ltd
Pertti Viik, Executive Director, Reindeer Herders' Association
Vieno Länsman, Head of the Kaldoaivi Reindeer Herding District
Jaana Mertala, Employment Officer, Ivalo Employment Agency
Reijo Timperi, Municipal Director, Municipality of Inari
Veikko Väänänen, Journalist, Lapin Kansa (local newspaper in Lapland)

Tuesday 17th August

Karhuntassu: meetings with park staff and stakeholders

Arto Ahokumpu, Regional Director, NHS Ostrobothnia-Kainuu, Metsähallitus
Matti Hovi, Regional Manager, NHS Ostrobothnia-Kainuu, Metsähallitus

Hossa National Hiking Area and Visitor Centre: meeting and site visit

Samuli Sillman, Regional Manager, NHS Ostrobothnia-Kainuu, Metsähallitus
Kerttu Härkönen, Project Manager, NHS Ostrobothnia-Kainuu, Metsähallitus
Ulla Heikkilä, Senior Planning Officer, NHS Ostrobothnia-Kainuu, Metsähallitus
Ari Juntunen, Entrepreneur, Hossan Retki Company

Syöte National Park/Hotel Iso-Syöte: meeting and discussion at hotel

Jouni Aarnio, Senior Planning Officer, NHS Ostrobothnia-Kainuu, Metsähallitus
Maija Mikkola, Senior Planning Officer, NHS Ostrobothnia-Kainuu, Metsähallitus
Lassi Karivalo, Senior Planning Officer, NHS Central Unit, Metsähallitus
Teet Koitjärv, Vice Director, Lahemaa National Park, Estonia
Juha Kuukasjärvi, Managing Director, Hotel Iso-Syöte

Wednesday 18th August

Syöte Visitor Centre: site visit and meeting with staff

Jouni Aarnio, Senior Planning Officer, NHS Ostrobothnia-Kainuu, Metsähallitus
Maija Mikkola, Senior Planning Officer, NHS Ostrobothnia-Kainuu, Metsähallitus

Oulanka National Park, Basecamp Juuma: meeting with staff

Kari Lahti, Customer Service Manager, NHS Ostrobothnia-Kainuu, Metsähallitus
Matti Tapaninen, Senior Planning Officer, NHS Ostrobothnia-Kainuu, Metsähallitus
Pekka Huhtala, Municipal Secretary (Deputy Manager), Municipality of Salla
Ulla Matturi, Executive Director, Ruka-Kuusamo Tourist Association

Field trip into Oulanka National Park

Anne Jäkäläniemi, Conservation Biologist, NHS Ostrobothnia-Kainuu, Metsähallitus

Thursday 19th August

Oulanka Visitor Centre and Kiutaköngäs waterfall: discussion and site visit

Timo Hentilä, Manager of Visitor Centre, NHS Ostrobothnia-Kainuu, Metsähallitus
Markus Keskitalo, Guide, NHS Ostrobothnia-Kainuu, Metsähallitus

Oulanka Research Station (Oulu University): meeting with director and presentation

Pirkko Siikamäki, Director of Oulanka Research Station (member of the SAB)

Friday 20th August

Morning meetings at NHS headquarters

Kari Pelkonen, Environment Manager, Forestry Unit, Metsähallitus
Arja Karkola, Internal Auditor, Internal Auditing Unit, Metsähallitus
Sini Harkki, Forest Specialist, Finnish Association of Nature Conservation

Feedback meeting and the preliminary evaluation results with NHS, Central Unit

Rauno Väisänen, Director
Marja-Liisa Hintsanen, Deputy Director
Aimo Saano, Research Manager
Anu Vauramo, Planning Manager
Lassi Karivalo, Senior Planning Officer, International Relations
Anneli Leivo, Customer Relations Manager
Tapani Mikkola, Customer Service Manager
Johanna Ala-Reini, Information Systems Manager
Markku Vickholm, Financial Manager
Mervi Heinonen, Information Specialist

Farewell dinner at Restaurant Sundmans in Helsinki

Rauno Väisänen, Director, NHS Metsähallitus
Timo Tanninen, CEO, WWF Finland (Chairperson of Evaluation Steering Group)
Ilkka Heikkinen, Director, Nature Conservation, Ministry of the Environment

Basic Information on Sites Visited in Finland

ARCHIPELAGO NATIONAL PARK

Archipelago National Park consists of around 1,000 islands and islets in the outer archipelago, at the extreme southern edge of the Archipelago. Although many of the islands are bare, Scots pine and broad-leaved trees grow on the larger ones. Also heritage landscapes are typical for this national park.

LOCATION	
Regional Natural Heritage Services	Southern Finland
Province	Province of Western Finland
Municipality	Dragsfjärd, Houtskari, Korppoo, Nauvo
Area (ha), of which	49,943.1
Land (ha)	3,126.7
Water (ha)	46,816.4

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	1.1.1983
Legislation Related to the Establishment	Acts 645/1982 and 130/1991, Decrees 1123/1994, 577/1995 and 439/2003
Regulations	2001

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Ölmos-Purunpää, Saaristomeri and Saaristomeri
Natura Code	FI0200062, FI0200090 and FI0200164
SCI or SPA	SCI, SCI and SPA
IUCN Category	II
International Agreements and Recognitions Concerning the Site	Part of the Archipelago Sea Area Biosphere Reserve.

HABITAT TYPES AND SPECIES (in the park or outside the park in the adjacent area)

Natural Habitat Types Mentioned in the Annex I (92/43/EEC) and Found in the Area

Sandbanks which are slightly covered by sea water all the time, Coastal lagoons, Reefs, Annual vegetation of drift lines, Perennial vegetation of stony banks, Vegetated sea cliffs of the Atlantic and Baltic coasts, Baltic esker islands with sandy, rocky and shingle beach vegetation and sublittoral vegetation, Boreal Baltic islets and small islands, Boreal Baltic coastal meadows, Boreal Baltic sandy beaches with perennial vegetation, Boreal Baltic narrow inlets, Embryonic shifting dunes, Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes), Fixed coastal dunes with herbaceous vegetation (grey dunes), Decalcified fixed dunes with *Empetrum nigrum* , Wooded dunes of the Atlantic, Continental and Boreal region, Humid dune slacks, Dry sand heaths with *Calluna and Empetrum nigrum,* Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*), Natural eutrophic lakes with *Magnopotamion or Hydrocharition* –type vegetation, Natural dystrophic lakes and ponds, Water courses of plain to montane levels with *Ranunculion fluitantis* and *Callitricho- Batrachion* vegetation, European dry heaths, Seminatural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*), Species-rich *Nardus* grasslands on

silicious substrates in mountain areas (and submountain areas in Continental Europe), Nordic alvar and precambrian calcareous flatrocks, *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*), Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*), Fennoscandian wooded meadows, Fennoscandian mineral-rich springs and springfens, Alkaline fens, Calcareous rocky slopes with chasmophytic vegetation, Siliceous rocky slopes with chasmophyric vegetation, Siliceous rock with pioneer vegetation of the *Sedo-Scleranthion* or of the *Sedo albi-Veronicion dillenii*, Western Taiga, Natural forests of primary succession stages of landupheaval coast, Fennoscandian herb-rich forests with *Picea abies*, Old acidophilous oak woods with *Quercus robur* on sandy plains, Bog woodland, Conifererous forests on, or connected to, glaciofluvial eskers, Fennoscandian wooded pastures

Species Mentioned in the Annex II (92/43/EEC) and Found in the Area

Botrychium simplex, Buxbaumia viridis, Cynodontium suecicum, Halichoreus grypus, Lutra lutra, Phoca hispida botnica, Vertigo angustior

Bird Species Mentioned in the Annex I (79/409/EEC) and Found in the Area

Aegolius funereus, Aquila chrysaetos, Asio flammeus, Branta leucopsis, Bubo bubo, Caprimulgus europaeus, Calidris alpina schinzii, Circus aeruginosus, Crex crex, Cygnus cygnus, Dryocopus martius, Emberiza hortulana, Falco columbarius, Ficedula parva, Gavia arctica, Gavia stellata, Grus grus, Haliaeetus albicilla, Lanius collurio, Larus minutus, Lullula arborea, Mergus albellus, Pandion haliaetus, Pernis apivorus, Phalaropus lobatus, Philomachus pugnax, Picoides tridactylus, Picus canus, Pluvialis apricaria, Podiceps auritus, Polysticta stelleri, Sterna albifrons, Sterna caspia, Sterna hirundo, Sterna paradisaea, Sylvia nisoria, Tetrao tetrix, Tringa glareola, Uria aalge

Threatened Species which are not on the Annex Lists of the Directives

Cyphelium notarisii CR, Elymus farctus CR, Mutinus caninus CR, Parmelia pastillifera CR, Polugonum oxyspermum CR, Stellaria crassifolia CR, Tulostoma brumale CR, Agrochola nitida EN, Anagallis minima EN, Apamea anceps EN, Aphodius ictericus EN, Catoptria fulgidella EN, Chamaemyces fracidus EN, Cochylidia heydeniana EN, Coleophora lixella EN, Fulgensia bracteata EN, Gentianella campestris EN, Geoglossum starbaeckii EN, Polypogon lunalis EN, Pyrausta ostrinalis EN, Salsola kali ssp. *kali EN, Ammophila arenaria VU, Anastrophyllum michauxii VU, Aphodius sordidus VU, Aplocera plagiata VU, Aurantioporus fissilis VU, Aythya marila VU, Botrychium lanceolatum VU, Botrychium matricariifolium VU, Bryoria smithii VU, Calidris maritima VU, Calidris temminckii VU, Calypogeia suecica VU, Camarophyllus colemannianus VU, Carex appropinquata VU, Carex paniculata VU, Chiloscyphus coadunatus VU, Chiloscyphus latifolius VU, Cladonia subrangiformis VU, Coleophora caelebipennella VU, Dendrocopos minor VU, Draba muralis VU, Draba nemorosa VU, Entoloma queletii VU, Fragaria viridis VU, Geastrum striatum VU, Gentianella amarella VU, Gentianella uliginosa VU, Gyalecta geoica VU, Jynx torquilla VU, Larus fuscus VU, Larus ridibundus VU, Lepidium latifolium VU, Lepiota alba VU, Lepiota grangei VU, Lithospermum arvense VU, Lophozia grandiretis VU, Malus sylvestris VU, Marasmius wynnei VU, Microstylis monophyllos VU, Neckera pennata VU, Orthotrichum gymnostomum VU, Orthotrichum stramineum VU, Orthotrichum striatum VU, Panageus cruxmajor VU, Parnassius mnemosyne VU, Pertusaria pertusa VU, Pholiota albocrenulata VU, Potentilla anglica VU, Potentilla subarenaria VU, Sagina maritima VU, Sclerophora peronella VU, Tricoholoma fracticum VU, Acanthinula aculeata NT, Alliun ursinum NT, Amblystegium radicale NT, Atriplex glabriuscula NT, Bombus muscorum NT, Botrychium multifidum NT, Bryoria nadvornikiana NT, Caloplaca thallincola NT, Catabrosa aquatica NT, Catocala promissa NT, Cerastium pumilum NT, Chorosoma schillingi NT, Conistra erythrocephala NT, Dichomitus campestris NT, Dicranum tauricum NT, Inocybe asterospora NT, Jungermannia leiantha NT, Lobaria scrobiculata NT, Lophozia ascendens NT, Nowellia curvifolia NT, Onnia tomentosa NT, Parmelia tiliacea NT, Parnassius apollo NT, Perforatella bidentata NT, Pionosomus varius NT, Podalonia affinis NT, Potamogeton friesii NT, Sorbus intermedia NT, Thanatophilus dispar NT, Trifolium fragiferum NT, Vertigo pygmaea NT*

CULTURAL HERITAGE VALUES	
Built Heritage	-
Ancient Relics	The wreck of the Dutch trading ship Vrouw Maria from the end of the 18th century. Parts of the area of nationally significant prehistoric relics of old settlements are located in the national park.
Landscape Areas	A part of the nationally valuable landscape area and national landscape is situated within the national park.

PLANS CONCERNING THE SITE	
Management Plan	1999
Published	Nature Protection Publications of the Finnish Forest and Park Service. Series B, No 56

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	80,000 (60,000)
Information Services and Number of Visits in 2003 (2002)	Blåmusslan Visitor Centre 20,200 (20,000), Korpoström Archipelago Centre (will be opened during years 2004 - 05)
Visitor Surveys	2003
Published	Unpublished
Typical Visitor	Middle-aged man from Southern Finland. He is interested in boating and nature observation and wants to get to know the landscape and the culture of the Archipelago. He arrives at the area by boat and stays there overnight with his family. He has visited the area already before.

LEMMENJOKI NATIONAL PARK

The scenery of Lemmenjoki National Park is characterised by large rivers and the forest, fell and mire areas separating them. The central part of the park is dominated by River Lemmenjoki and the fell clusters surrounding it. The northerly location of the park is obvious in its extensive birch and Scots pine forests although also some Norway spruces grow in the area. Lemmenjoki National Park is a part of extensive wilderness area which continues over to Norway.

LOCATION	
Regional Natural Heritage Services	Northern Lapland
Province	Province of Lapland
Municipality	Inari, Kittilä
Area (ha), of which	284,973.1
Land (ha)	282,150.8
Water (ha)	2,822.3

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	21.12.1956
Legislation Related to the Establishment	Acts 634/1956, 674/1981 and 675/1981, Decrees 932/1981, 117/1989 and 583/1991
Regulations	1988

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Lemmenjoen kansallispuisto
Natura Code	FI1300201
SCI or SPA	SCI/SPA
IUCN Category	II
International Agreements and Recognitions Concerning the Site	Ramsar area

HABITAT TYPES AND SPECIES

Natural Habitat Types Mentioned in the Annex I (92/43/EEC) and Found in the Area

Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*), Natural dystrophic lakes and ponds, Fennoscandian natural rivers, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Alpine rivers and the herbaceous vegetation along their banks, Water courses of plain to montane levels with *Ranunculion fluitantis* and *Callitricho- Batrachion* vegetation, Alpine and boreal heaths, Sub-arctic *Salix* spp.scrub, Siliceous alpine and boreal grasslands, Nordic subalpine/subarctic forests with *Betula pubescens* ssp. *czerepanovii*, Transition mires and quaking bogs, Fennoscandian mineral-rich springs and springfens, Aapa mires, Palsa mires, Siliceous rocky slopes with chasmophytic vegetation, Western Taiga, Bog woodland, Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)

Species Mentioned in the Annex II (92/43/EEC) and Found in the Area

Alopex lagopus, Canis lupus, Gulo gulo, Lepus timidus, Lutra lutra, Lynx lynx, Martes martes, Ursus arctos

Bird Species Mentioned in the Annex I (79/409/EEC) and Found in the Area

Aegolius funereus, Aquila chrysaetos, Asio flammeus, Bonasa bonasia, Bubo bubo, Charadrius morinellus, Circus cyaneus, Cygnus cygnus, Dryocopus martius, Falco columbarius, Falco peregrinus, Falco rusticola, Gavia arctica, Gavia stellata, Grus grus, Haliaeetus albicilla, Limosa lapponica, Luscinia svecica, Mergus albellus, Nyctea scandiaca, Pandion haliaetus, Phalaropus lobatus, Philomachus pugnax, Picoides tridactylus, Pluvialis apricaria, Sterna paradisaea, Strix nebulosa, Sturnia ulula, Tetrao urogallus, Tringa glareola

Threatened Species which are not on the Annex Lists of the Directives

Calidris temminckii VU, Dendrocopos minor VU, Jynx torquilla VU, Phylloscopus collybita VU, Anser fabalis NT, Charadrius morinellus NT, Cinclus cinclus NT, Cuculus canorus NT, Falco tinniculus NT, Lanius excubitor NT, Limicola falcinellus NT, Melanitta nigra NT, Oenanthe oenanthe NT, Parus cinctus NT, Perisoreus infaustus NT, Saxicola rubetra NT, Turdus torquatus NT

CULTURAL HERITAGE VALUES	
Built Heritage	Sallivaara; reindeer round-up area of the Sami people (nationally significant cultural environment, 9 protected buildings and a reindeer corral).
Ancient Relics	A chain of pits for hunting wild reindeer in the area of Seärhijoki-Härkäjoki along the River Lemmenjoki is the largest ancient site of this type in Finland. It dates from ca. 2000 - 1000 BC.
Landscape Areas	-

PLANS CONCERNING THE SITE	
Management Plan	1988
Published	Metsähallitus. SU4, 91

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	10,000 (10,000)
Information Services and Number of Visits in 2003 (2002)	Lemmenjoki Information Hut 4,700 (5,000)
Visitor Surveys	2001
Published	Unpublished
Typical Visitor	Middle-aged visitor from Southern or Central Finland who wants to go hiking, enjoy the landscape and relax and who stays overnight in the area with family or friends. In the wilderness part of the national park visitors are typically 25 - 34-year-old men.


Inari
Anár
Angeli
Norway
Vaskojoki
Njurgulahti
Menesjärvi
Härkäkoski
Inari
Anár
Övre Anarjokka
National Park
Ravadasjärvi
Morgamoja
Oahujoki
Kultahamina
Postijoki
Vaskolompolo
Naukusjänkä
Sallivaara
Basic Area
Wilderness Area
Restricted Area
Repojoki
Lisma
Ivalon
Paaraskalla
0
10 km
Kittilä
Gihttel
© Metsähallitus 2001

LIESJÄRVI NATIONAL PARK

The landscape of Liesjärvi National Park is dominated by lakes, mires and forests. The land within the park is almost entirely covered by dense tree stands and forested small mires. Most of the area was used for forestry until the establishment of the national park, which explains why there are so many young and middle-aged stands. Variety is also contributed by the Esker Kyynäränharju and some forty islands and islets.

LOCATION	
Regional Natural Heritage Services	Southern Finland
Province	Province of Southern Finland
Municipality	Tammela
Area (ha), of which	877.6
Land (ha)	877.4
Water (ha)	0.2

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	21.12.1956
Legislation Related to the Establishment	Acts 634/1956, 674/1981 and 675/1981, Decrees 932/1981 and 117/1989
Regulations	1985

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Liesjärvi
Natura Code	FI0344001
SCI or SPA	SCI
IUCN Category	II
International Agreements and Recognitions Concerning the Site	-

HABITAT TYPES AND SPECIES

Natural Habitat Types Mentioned in the Annex I (92/43/EEC) and Found in the Area

Natural dystrophic lakes and ponds, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Active raised bogs, Siliceous rocky slopes with chasmophytic vegetation, Western Taiga, Fennoscandian herb-rich forests with *Picea abies*, Bog woodland, Coniferous forests on, or connected to, glaciofluvial eskers

Species Mentioned in the Annex II (92/43/EEC) and Found in the Area

Canis lupus, Lutra lutra, Pteromys volans

Bird Species Mentioned in the Annex I (79/409/EEC) and Found in the Area

Aegolius funereus, Bonasa bonasia, Bubo bubo, Caprimulgus europaeus, Cygnus cygnus, Dryocopus martius, Emberiza hortulana, Ficedula parva, Gavia arctica, Gavia stellata, Glaucidium passerinum, Grus grus, Lanius collurio, Pandion haliaetus, Pernis apivorus, Picus canus, Picoides tridactylus, Sterna hirundo, Strix uralensis, Tetrao tetrix, Tetrao urogallus, Tringa glareola

Threatened Species which are not on the Annex Lists of the Directives

Dendrocopos minor VU, Jynx torquilla VU, Larus fuscus VU, Larus ridibundus VU, Onnia tementosa NT, Perenniporia subacida NT, Postia guttulata NT

CULTURAL HERITAGE VALUES	
Built Heritage	Korteniemi; the dwelling of a forest ranger from 1880 - 1910 (nationally significant cultural environment, 8 protected buildings). Hyypiö; two-storey hut of Metsähallitus from 1950 (2 protected buildings).
Ancient Relics	-
Landscape Areas	-

PLANS CONCERNING THE SITE	
Management Plan	1985
Published	Metsähallitus. SU4, 68

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	15,000 (15,000)
Information Services and Number of Visits in 2003 (2002)	Häme Visitor Centre 20,800 (22,500), Old estate of Korteniemi 8,500 (8,500)
Visitor Surveys	2000
Published	Pirkanmaan liitto (Council of Tampere Region) 2001, publication D 64
Typical Visitor	35 - 44-year-old daytime-visitor who lives in Helsinki Metropolitan Area. He comes to the area with his family and visits the old estate of Korteniemi, goes hiking, walking or observes nature.

LINNANSAARI NATIONAL PARK

Linnansaari National Park represents Finnish lakeland. It includes sheltered islands and islets and a more open archipelago displaying scattered islands in broad, open waters. The island vegetation exhibits extremes: rocks with stunted Scots pines contrast with small ravines in the rocks occupied by a mixed growth of broadleaf species that are gradually giving way to Norway spruce. The national park is also home to the extremely endangered Saimaa ringed seal *(Phoca hispida saimensis)* .

LOCATION	
Regional Natural Heritage Services	Eastern Finland
Province	Province of Eastern Finland
Municipality	Kangaslampi, Rantasalmi, Savonlinna
Area (ha), of which	8,476.4
Land (ha)	3,740.4
Water (ha)	4,736.0

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	21.12.1956
Legislation Related to the Establishment	Acts 634/1956 and 674/1981, Decrees 932/1981 and 117/1989
Regulations	1978

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Linnansaari and Hevonniemi
Natura Code	FI0500002 and FI0500171
SCI or SPA	SCI
IUCN Category	II
International Agreements and Recognitions Concerning the Site	-

HABITAT TYPES AND SPECIES

Natural Habitat Types Mentioned in the Annex I (92/43/EEC) and Found in the Area

Water courses of plain to montane levels with *Ranunculion fluitantis* and *Callitricho- Batrachion* vegetation, Fennoscandian lowland species-rich dry to mesic grasslands, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Transition mires and quaking bogs, Fennoscandian mineral-rich springs and springfens, Siliceous rocky slopes with chasmophytic vegetation, Siliceous rock with pioneer vegetation of the *Sedo-Scleranthion* or of the *Sedo albi-Veronicion dillenii* , Western Taiga, Fennoscandian herb-rich forests with *Picea abies* , Bog woodland, Fennoscandian decidious swamp woods, Coniferous forests on or connected to glaciofluvial eskers

Species Mentioned in the Annex II (92/43/EEC) and Found in the Area

Hypodryas maturna, Lutra lutra, Phoca hispida saimensis, Plagiomnium drummondii

Bird Species Mentioned in the Annex I (79/409/EEC) and Found in the Area

Aegolius funereus, Bonasa bonasia, Bubo bubo, Caprimulgus europaeus, Cygnus cygnus, Dryocopus martius, Ficedula parva, Gavia arctica, Gavia stellata, Glaucidium passerinum, Grus grus, Lanius collurio, Pernis apivorus, Phylloscopus trochiloides, Sterna hirundo, Strix uralensis, Tetrao tetrix, Tetrao urogallus

In addition to the indicated Annex I species information on especially protected species is achievable upon request in accordance to the law on publicity, § 24, mom. 1, chapter 14 (2 species).

Threatened Species which are not on the Annex Lists of the Directives

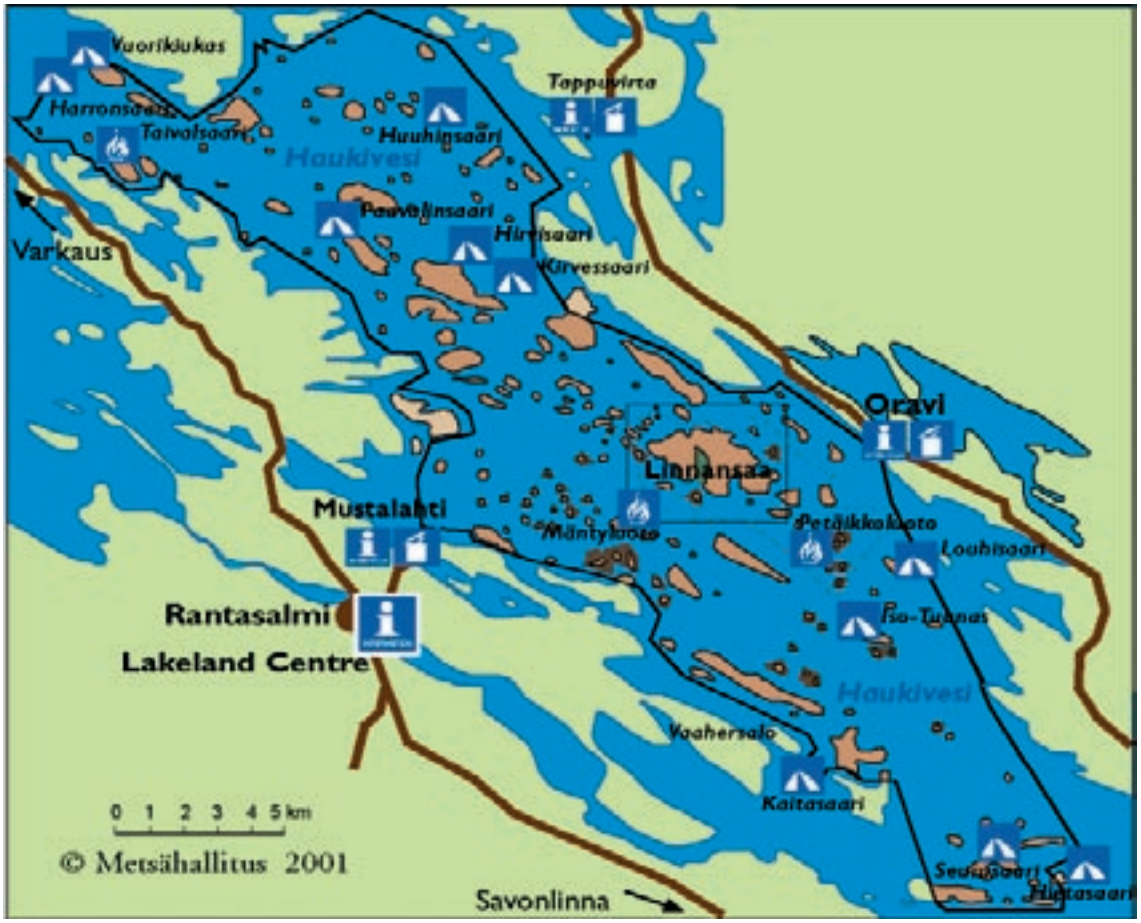
Dendrocopos leucotos CR, Carlina biebersteinii EN, Botrychium lanceolatum VU, Campanula cervicaria VU, Dendrocopos minor VU, Epipogium aphyllum VU, Euphrasia rostkoviana ssp. *fennica VU, Glaucopsyche alexis VU, Gymnadenia conopsea* var. *conopsea VU, Hemaris tityus VU, Larus fuscus VU, Larus ridibundus VU, Neckera pennata VU, Plagiothecium latebricola VU, Scolitantides orion VU, Viola persicifolia VU, Botrychium multifidum NT, Baptria tibiale* ssp. *fennica NT, Galium odoratum NT, Haploporus odorus NT, Jungermannia leiantha NT, Pandion haliaetus NT, Parnassius apollo NT, Trichosea ludifica NT*

In addition to the indicated threatened species information on especially protected species is achievable upon request in accordance to the law on publicity, § 24, mom. 1, chapter 14 (12 species).

CULTURAL HERITAGE VALUES	
Built Heritage	-
Ancient Relics	-
Landscape Areas	-

PLANS CONCERNING THE SITE	
Management Plan	1991
Published	Nature Protection Publications of the Finnish Forest and Park Service. Series B, No 17

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	28,000 (27,500)
Information Services and Number of Visits in 2003 (2002)	Nestori - Saimaa Nature Centre 9,800 (9,100), Oskari - Linnansaari Visitor Centre 14,400 (14,200), Oravi Information Hut 3,500 (4,000)
Visitor Surveys	-
Published	-
Typical Visitor	-


Vuorikukas
Harronsaari
Taivalsaari
Haukivesi
Huuhingsaari
Tappavirta
Varkaus
Hirvisaari
Kirvessaari
Oravi
Linnansaari
Mustalahti
Mäntyluoto
Petäikkölahto
Louhisaari
Rantasalmi
Lakeland Centre
Iso-Tuunas
Haukivesi
Vaahersalo
Kaitasaari
0 1 2 3 4 5 km
© Metsähallitus 2001
Savonlinna

NUUKSIO NATIONAL PARK

Nuuksio National Park is a mosaic of rocky outcrops, herb-rich forests, wilderness lakes and mires. The diversity of nature is based on the southern location of the park and the variety of habitats due to the broken bedrock of the national park area.

LOCATION	
Regional Natural Heritage Services	Southern Finland
Province	Province of Southern Finland
Municipality	Espoo, Kirkkonummi, Vihti
Area (ha), of which	3,779.9
Land (ha)	3,717.1
Water (ha)	62.8

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	1.3.1994
Legislation Related to the Establishment	Act 118/1994, Decree 119/1994
Regulations	-

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Nuuksio, Bånbergetin aarnialue and Matalajärvi
Natura Code	FI010040, FI0100091 and FI0100092
SCI or SPA	SCI
IUCN Category	II
International Agreements and Recognitions Concerning the Site	-

HABITAT TYPES AND SPECIES

Natural Habitat Types Mentioned in the Annex I (92/43/EEC) and Found in the Area

Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*), Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* –type vegetation, Natural dystrophic lakes and ponds, Water courses of plain to montane levels with *Ranunculion fluitantis* and *Callitricho- Batrachion* vegetation, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Mountain hay meadows, Active raised bogs, Transition mires and quaking bogs, Alkaline fens, Siliceous rocky slopes with chasmophytic vegetation, Western Taiga, Fennoscandian herb-rich forests with *Picea abies*, *Tilio-Acerion* forests of slopes, screens and ravines, Bog woodland, Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnoin incanae, Salicion albae*), Fennoscandian decidious swamp woods

Species Mentioned in the Annex II (92/43/EEC) and Found in the Area

Hypodryas maturna, Lampetra planeri, Lutra lutra, Lynx lynx, Najas tenuissima, Pteromys volans, Ursus arctos

Bird Species Mentioned in the Annex I (79/409/EEC) and Found in the Area

Aegolius funereus, Bonasa bonasia, Bubo bubo, Caprimulgus europaeus, Crex crex, Cygnus cygnus, Dryocopus martius, Emberiza hortulana, Ficedula parva, Gavia arctica, Gavia stellata, Glaucidium passerinum, Grus grus, Lanius collurio, Lullula arborea, Pandion haliaetus, Pernis apivorus, Picoides tridactylus, Picus canus, Sterna hirundo, Strix uralensis, Tetrao tetrix, Tetrao urogallus, Tringa glareola

Threatened Species which are not on the Annex Lists of the Directives

Cercyon obsoletus EN, Dicranodontium denudatum EN, Leptura pubescens EN, Anastrophyllum michauxii VU, Anomoporia myceliosa VU, Campanula cervicaria VU, Collema subnigrescens VU, Dendrocopos minor VU, Evernia divaricata VU, Harpanthus scutatus VU, Jamesoniella autumnalis VU, Jynx torquilla VU, Mursupella sphacelata VU, Mursupella sparsifolia VU, Neckera pennata VU, Postia lateritia VU, Semblis atrata VU, Tragosoma depsarium VU, Trichocolea tomentella VU, Acanthinula aculeata NT, Anastrophyllum hellerianum NT, Anomoporia bombycina NT, Aspitates gilvaria NT, Bazzania tricrenata NT, Dianthus deltoides NT, Gelatoporia pannocincta NT, Geranuim bohemicun NT, Jungermannia leiantha NT, Lophozia ascendens NT, Nowellia curvifolia NT, Onnia tomentosa NT, Potamogeton rutilus NT, Rhyacophila fasciata NT, Silo pallipes NT, Scapania nemorea NT

CULTURAL HERITAGE VALUES	
Built Heritage	-
Ancient Relics	-
Landscape Areas	-

PLANS CONCERNING THE SITE	
Management Plan	Temporary management plan 1994
Published	Unpublished

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	100,000 (100,000)
Information Services and Number of Visits in 2003 (2002)	Haukkalampi Information Hut 22,600 (20,000)
Visitor Surveys	1996 and 2001
Published	Nature Protection Publications of the Finnish Forest and Park Service. Series A, No 107. Survey from the year 2001 unpublished.
Typical Visitor	25 - 44-year-old visitor from Helsinki Metropolitan Area. He makes a one-day-visit with his family or friends and is interested in outdoor recreation, hiking, walking, jogging or nature observation. He has visited Nuuksio National Park already before.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© Metsähallitus 2001
Iso-Parikas
Vähä-Parikas
Poikkipuoliainen
Oravankolo
Ruuhilampi
Kaitlampi
Kattila
Tervalampi
Högbacka
Kurjolampi
Tikankolo
Haukkalampi
Nature Cabin
Elohovi
Iso-Holma
Holma-Saarijärvi
Heinässuo
Nuuksion
Pitkäjärvi
Kolmoislammit
Turku
Soidinsuo
Siikaniemi
Kaislampi
Siikaranta
Siikajärvi
Veikkola
Helsinki
Helsinki

OULANKA NATIONAL PARK

Oulanka National Park is a combination of northern, eastern and southern nature. It consists of Scots pine forests, river habitats and extensive mires. The vegetation includes a number of rarities. Having been untouched since the turn of the century, the forests provide a good impression of original forest wildlife.

LOCATION	
Regional Natural Heritage Services	Ostrobothnia-Kainuu
Province	Province of Oulu / Province of Lapland
Municipality	Kuusamo, Salla
Area (ha), of which	27,746.4
Land (ha)	26,627.8
Water (ha)	1,118.6

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	21.12.1956
Legislation Related to the Establishment	Acts 634/1956, 674/1981, 675/1981 and 115/1989, Decrees 582/1991 and 879/1991
Regulations	1994

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Oulanka
Natura Code	FI1101645
SCI or SPA	SCI/SPA
IUCN Category	II
International Agreements and Recognitions Concerning the Site	Ramsar area. PAN Parks Certificate.

HABITAT TYPES AND SPECIES

Natural Habitat Types Mentioned in the Annex I (92/43/EEC) and Found in the Area

Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp., Natural dystrophic lakes and ponds, Water courses of plain to montane levels with *Ranunculion fluitantis* and *Callitricho- Batrachion* vegetation, Fennoscandian natural rivers, Fennoscandian lowland species-rich dry to mesic grasslands, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Northern boreal alluvial meadows, Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*), Mountain hay meadows, Transition mires and quaking bogs, Fennoscandian mineral-rich springs and springfens, Petrifying springs with tufa formation (*Cratoneurion*), Alkaline fens, Aapa mires, Calcareous rocky slopes with chasmophytic vegetation, Siliceous rocky slopes with chasmophytic vegetation, Siliceous rock with pioneer vegetation of the *Sedo-Scleranthion* or of the *Sedo albi-Veronicion dillenii*, Western Taiga, Fennoscandian herb-rich forests with *Picea abies*, Bog woodland, Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnoin incanae, Salicion albae*), Fennoscandian decidious swamp woods

Species Mentioned in the Annex II (92/43/EEC) and Found in the Area

Arenaria ciliata spp. *pseudofrigita, Boros schneideri, Canis lupus, Cottus cobio, Crepis tectorum, Cynodontium suecicum, Diplazium sibiricum, Draba cinerea, Dytiscus latissimus, Encalypta mutica, Gulo gulo, Lutra lutra, Lynx lynx, Pytho kolwensis, Ranunculus lapponicus, Saxifraga hirculus, Stephanopachys linearis, Stephanopachys subtriatus, Ursus arctos, Vertigo genesii*

Bird Species Mentioned in the Annex I (79/409/EEC) and Found in the Area

Aegolius funereus, Aquila chrysaetos, Bonasa bonasia, Bubo bubo, Circus cyaneus, Cygnus cygnus, Dryocopus martius, Falco columbarius, Ficedula parva, Gavia arctica, Glaucidium passerinum, Grus grus, Luscinia svecica, Mergus albellus, Pernis apivorus, Phalaropus lobatus, Philomachus pugnax, Picoides tridactylus, Sterna paradisaea, Strix nebulosa, Surnia ulula, Tetrao urogallus, Tringa glareola

Threatened Species which are not on the Annex Lists of the Directives

Lacon lepidopterus CR, Rhizomnium andrewsianum CR, Dircaea quadriguttata EN, Ditylus laevis EN, Lonicera caerulea EN, Phryganophilus ruficollis EN, Acmaeops septentrionis VU, Arnica angustifolia VU, Asplenium ruta-muraria VU, Botrychium lanceolatum VU, Carex lapidocarpa ssp. *jemtlandica VU, Carex viridula* var. *bergrothii VU, Corticeus fraxini VU, Deronectes latus VU, Gypsophila fastigiata VU, Mythicomyces corneipes VU, Pytho abieticola VU, Acasis appensata NT, Anomoporia bombycina NT, Baptria tibiale* ssp. *fennica NT, Campylophyllum halleri NT, Cinclus cinclus NT, Elymus alaskanus* ssp. *scandicus NT, Encalypta procera NT, Erigeron acer* ssp. *decoloratus NT, Gymnocarpium continentale NT, Gymnocarpium robertianum NT, Hygrophorus inocybiformis NT, Potentilla chamissonis NT, Potentilla nivea NT, Psora rubiformis NT, Ramalina thrausta NT, Salix triandra NT, Seligeria donniana NT, Seligeria subimmersa NT, Synalissa symphorea NT*

CULTURAL HERITAGE VALUES	
Built Heritage	-
Ancient Relics	-
Landscape Areas	Over 90% of the nationally valuable landscape area and national landscape of Kuusamo rapids is situated within the national park.

PLANS CONCERNING THE SITE	
Management Plan	1991
Published	Metsähallitus. SU4, 121

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	165,000 (162,000)
Information Services and Number of Visits in 2003 (2002)	Oulanka Visitor Centre 71,800 (81,400), Hautajärvi Information Hut 7,800 (8,600)
Visitor Surveys	1995 and 2000
Published	Survey from the year 1995 unpublished. Naturopolis Kuusamo, Education and Development Services, Research Papers 2/2001.
Typical Visitor	15 - 44-year-old (1995) or 35 - 54-year-old (2000) visitor who comes to the area with family or friends. He is interested in hiking (specially along the Karhunkierros Hiking Trail), walking, or nature observation. He lives in the Province of Oulu or in Helsinki Metropolitan Area.


Hautajärvi
Russia
Kerojärvi
Oulangan kanjoni
Oulankajoki
Puikkojärvi
Taivalköngäs
Ristinkallio
Border zone
Liikasenvaara
Kiutaköngäs
Kallunkijärvi
Käylä
Oulankajoki
Juuma
Kitkanjoki
Jyrävä
Oulanka
Visitor Centre
Kiutaköngäs
0 1 km
0 5 10 km
© Metsähallitus 2001

SYÖTE NATIONAL PARK

The Syöte National Park consists mostly of Norway spruce forest, including a belt of old-growth forests extending over the hilltops. A quarter of the park is peatland - mainly northern aapa mire, but also hillside bog. The park's natural forests host many threatened species of fungi, and many animals at the very edges of their ranges.

LOCATION	
Regional Natural Heritage Services	Ostrobothnia-Kainuu
Province	Province of Lapland / Province of Oulu
Municipality	Posio, Pudasjärvi, Taivalkoski
Area (ha), of which	29,995.7
Land (ha)	29,856.5
Water (ha)	139.2

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	15.6.2000
Legislation Related to the Establishment	Act 512/2000
Regulations	-

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Syöte
Natura Code	FI1103828
SCI or SPA	SCI/SPA
IUCN Category	II
International Agreements and Recognitions Concerning the Site	-

HABITAT TYPES AND SPECIES

Natural Habitat Types Mentioned in the Annex I (92/43/EEC) and Found in the Area

Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp., Natural dystrophic lakes and ponds, Water courses of plain to montane levels with *Ranunculion fluitantis* and *Callitricho- Batrachion* vegetation, Fennoscandian lowland species-rich dry to mesic grasslands, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*), Mountain hay meadows, Transition mires and quaking bogs, Fennoscandian mineral-rich springs and springfens, Alkaline fens, Aapa mires, Calcareous rocky slopes with chasmophytic vegetation, Siliceous rocky slopes with chasmophytic vegetation, Western Taiga, Fennoscandian herb-rich forests with *Picea abies*, Bog woodland

Species Mentioned in the Annex II (92/43/EEC) and Found in the Area

Lutra lutra, Lynx lynx, Pteromys volans, Pytho kolwensis, Ranunculus lapponicus, Saxifraga hirculus, Ursus arctos

Bird Species Mentioned in the Annex I (79/409/EEC) and Found in the Area

Aegolius funereus, Aquila chrysaetos, Bonasa bonasia, Cygnus cygnus, Dryocopus martius, Grus grus, Picoides tridactylus, Pluvialis apricaria, Tetrao urogallus, Tringa glareola

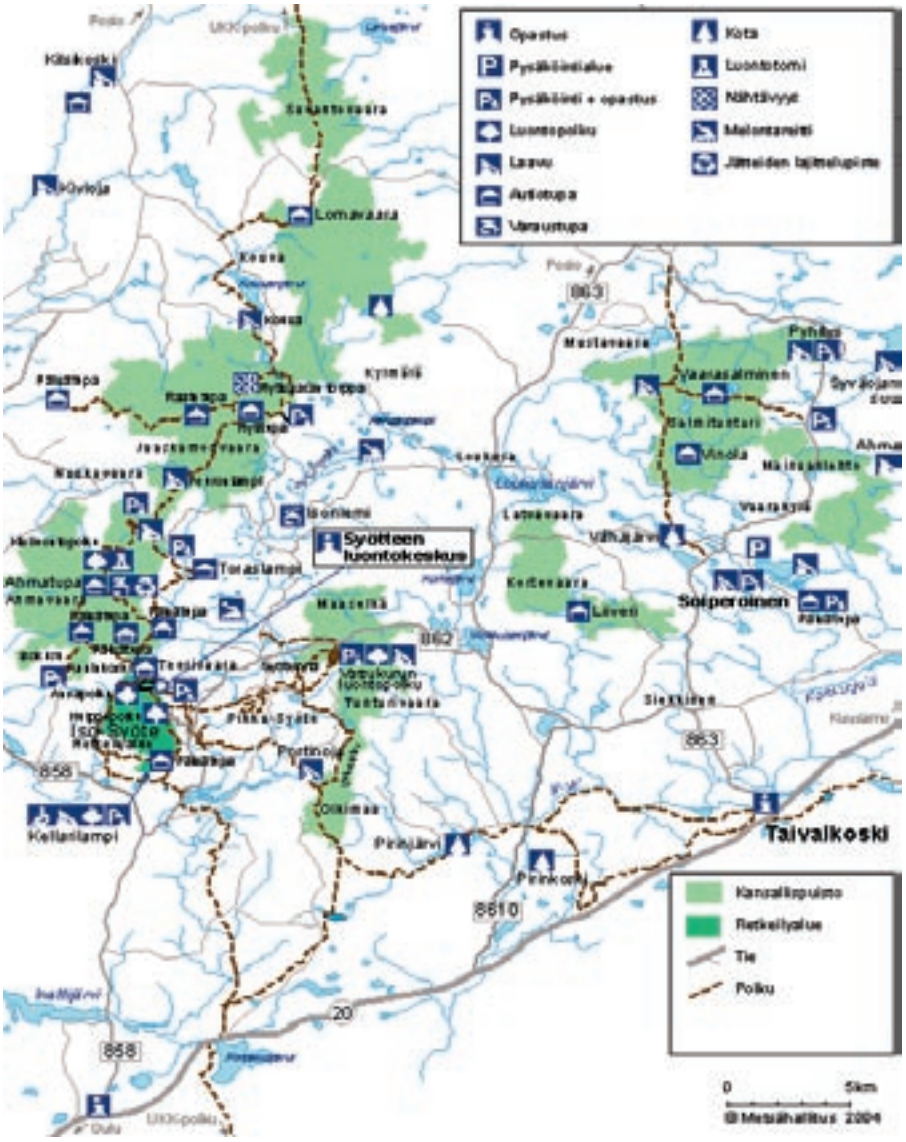
Threatened Species which are not on the Annex Lists of the Directives

Quedius lundbergi EN, Skeletocutis jelicii EN, Zygodon conoideus EN, Evernia divaricata VU, Leucoscypha ovilloides VU, Pseudoleskeella papillosa NT, Ramalina thrausta NT

CULTURAL HERITAGE VALUES	
Built Heritage	-
Ancient Relics	-
Landscape Areas	-

PLANS CONCERNING THE SITE	
Management Plan	Management plan of transitional stage 2001
Published	Unpublished

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	24,000 (25,000)
Information Services and Number of Visits in 2003 (2002)	Syöte Visitor Centre 30,300 (-)
Visitor Surveys	-
Published	-
Typical Visitor	-



TORRONSUO NATIONAL PARK

Torronsuo National Park consists of peatlands that have remained in an almost natural state. The mires are lined with forests, eskers and steep rocks. The birdlife in Torronsuo is extremely rich as well as the variety of insect species.

LOCATION	
Regional Natural Heritage Services	Southern Finland
Province	Province of Southern Finland
Municipality	Tammela
Area (ha), of which	2,674.7
Land (ha)	2,674.7
Water (ha)	-

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	1.4.1990
Legislation Related to the Establishment	Act 169/1990, Decree 170/1990
Regulations	-

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Torronsuo
Natura Code	FI0344002
SCI or SPA	SCI/SPA
IUCN Category	II
International Agreements and Recognitions Concerning the Site	Ramsar area

HABITAT TYPES AND SPECIES

Natural Habitat Types Mentioned in the Annex I (92/43/EEC) and Found in the Area

Active raised bogs, Degraded raised bogs still capable of natural regeneration, Transition mires and quaking bogs, Siliceous rocky slopes with chasmophytic vegetation, Western Taiga, Fennoscandian herb-rich forests with *Picea abies* , Bog woodland

Species Mentioned in the Annex II (92/43/EEC) and Found in the Area

Lynx lynx, Pteromys volans

Bird Species Mentioned in the Annex I (79/409/EEC) and Found in the Area

Aegolius funereus, Asio flammeus, Bonasa bonasia, Botaurus stellaris, Bubo bubo, Caprimulgus europaeus, Circus aeruginosus, Circus cyaneus, Crex crex, Cygnus cygnus, Dryocopus martius, Emberiza hortulana, Falco columbarius, Ficedula parva, Gavia arctica, Gavia stellata, Grus grus, Lanius collurio, Larus minutus, Pandion haliaetus, Pernis apivorus, Philomachus pugnax, Picoides tridactylus, Picus canus, Pluvialis apricaria, Porzana porzana, Sterna hirundo, Strix uralensis, Tetrao tetrix, Tetrao urogallus, Tringa glareola

Threatened Species which are not on the Annex Lists of the Directives

Limosa limosa EN, Nephroma laevigatum EN, Acrocephalus arundinaceus VU, Dendrocopos minor VU, Jynx torquilla VU, Larus fuscus VU, Larus ridibundus VU, Aspitates gilvaria NT

CULTURAL HERITAGE VALUES	
Built Heritage	-
Ancient Relics	-
Landscape Areas	-

PLANS CONCERNING THE SITE	
Management Plan	-
Published	-

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	20,000 (20,000)
Information Services and Number of Visits in 2003 (2002)	Häme Visitor Centre 20,800 (22,500)
Visitor Surveys	-
Published	-
Typical Visitor	-

URHO KEKKONEN NATIONAL PARK

Urho Kekkonen National Park consists of forest, mire and fell ecosystems. The northern part of the park is a barren wilderness area of fells characterised by ravines, steep slopes and scree. There is plenty of treeless tundra and dry fell birch woods. The southwestern part consists of extensive open aapa bog areas and the southern part is a typical forest wilderness, with isolated fells, Scots pine stands and Norway spruce forests where the ground is blanketed with moss.

LOCATION	
Regional Natural Heritage Services	Northern Finland
Province	Province of Lapland
Municipality	Inari, Savukoski, Sodankylä
Area (ha), of which	254,967
Land (ha)	252,897
Water (ha)	2,070

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	1.5.1983
Legislation Related to the Establishment	Acts 228/1983 and 565/1991, Decree 229/1983
Regulations	1985

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Urho Kekkosen kansallispuisto-Sompio-Kemihaara
Natura Code	FI1301701
SCI or SPA	SCI/SPA
IUCN Category	II
International Agreements and Recognitions Concerning the Site	-

HABITAT TYPES AND SPECIES

Natural Habitat Types Mentioned in the Annex I (92/43/EEC) and Found in the Area

Water courses of plain to montane levels with *Ranunculion fluitantis* and *Callitricho- Batrachion* vegetation, (Fennoscandian natural rivers), Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*), Alpine rivers and the herbaceous vegetation along their banks, Alpine and Boreal heaths, (Sub-arctic *Salix* spp.scrub), Siliceous alpine and Boreal grasslands, Nordic subalpine/subarctic forests with *Betula pubescens* ssp. *czerepanovii* , Active raised bogs, Transition mires and quaking bogs, Fennoscandian mineral-rich spings and springfens, Alkaline fens, Aapa mires, Siliceous rocky slopes with chasmophytic vegetation, Western Taiga, Fennoscandian herb-rich forests with *Picea abies* , Bog woodland, Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnoin incanae, Salicion albae*)
() = Mentioned only in the Natura-database, but not in LUOTI-GISdatabase (preliminary data)

Species Mentioned in the Annex II (92/43/EEC) and Found in the Area

Arctagrostis latifolia, Canis lupus, Carex holostoma, (Cynodontium suecicum, old observation from year 1933*), Gulo gulo, Lutra lutra, Lynx lynx, Margatifera margatifera, Moehringia lateriflora, Ranunculus lapponicus, Saxifraga hirculus, Xestia borealis, Ursus arctos*

Bird Species Mentioned in the Annex I (79/409/EEC) and Found in the Area

Aegolius funereus, Asio flammeus, Bonasa bonasia, Bubo bubo, Charadrius morinellus, Circus cyaneus, Cygnus cygnus, Dryocopus martius, Falco columbarius, Gavia arctica, Glaucidium passerinum, Grus grus, Luscinia svecica, Mergus albellus, Pandion haliaetus, Phalaropus lobatus, Philomachus pugnax, Picoides tridactylus, Pluvialis apricaria, Sterna paradisaea, Strix nebulosa, Surnia ulula, Tetrao tetrix, Tetrao urogallus, Tringa glareola

Threatened Species which are not on the Annex Lists of the Directives

Eremophila alpestris CR, Margatifera margatifera EN, Amylocystis lapponica VU, Antrodia infirma VU, Antrodia primaeva VU, Botrychium boreale VU, Botrychium lanceolatum VU, Postia lateritia VU, Saxifraga hirculus VU, Anser fabalis NT, Antrodia albobrunnea NT, Botrychium lunaria NT, (Botrychium multifidum, old observation from year 1959*), Cinclus cinclus NT, Cucullus canorus NT, (Dactylorhiza incarnata* ssp. *incarnata,* old observation from year 1958*), Eriophorum brachyantherum NT, Falco tinnunculus NT, Gloeophyllum protractum NT, Kavinia alboviridis NT, Laurilia sulcata NT, Limicola falcinellus NT, Myosotis nemorosa NT, Palustriella falcata, Parus cinctus NT, Peniophora septentrionalis NT, Perisoreus infaustus NT, Skeletocutis odora NT, (Stellaria fennica,* old observation from year 1960*), Turdus torquatus NT*

In addition regionally threatened: *Carex atrata, (Carex capitata,* old observation from year 1959*), Carex viridula* var. *viridula, Cystopteris fragilis* ssp. *dickieana, (Tussilago farfara,* old observation from year 1961*)*

CULTURAL HERITAGE VALUES	
Built Heritage	Oskarinjärvi; a settlement describing the life of the East Sami people after World War II (2 protected buildings). Oskarinkoski; the settlement of the East Sami people (8 protected buildings or structures). Suomujoki; the settlement of the East Sami people (nationally significant cultural environment, 8 protected buildings or structures). Raja-Jooseppi; the settlement of the gold panners from the beginning of the 20th century (nationally significant cultural environment, 10 protected buildings or structures). Rumakuru Huts; a hut where civil servants and reindeer herdsmen used to stay overnight in the beginning of the 20th century and a hut where hikers have slept since the 1960s (2 protected huts).
Ancient Relics	-
Landscape Areas	-

PLANS CONCERNING THE SITE	
Management Plan	2001
Published	Nature Protection Publications of the Finnish Forest and Park Service. Series B, No 60

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	160,000 (150,000)
Information Services and Number of Visits in 2003 (2002)	Koilliskaira Visitor Centre 21,400 (22,500), Savukoski Visitor Centre 8,900 (6,200), Kiehinen Customer Service 10,000 (9,700)
Visitor Surveys	2001 - 02
Published	Unpublished
Typical Visitor	45 - 64-year-old man with post-secondary education. He comes to the national park with his family or friends from one of the biggest towns in Finland. He stays overnight in the area and is interested in nature observation and skiing or hiking.

Raja-Jooseppi
Saariselkä
Oskarinjärvi
Kolttakentät
Restrictions in access during bird nesting season
Kiilopää
E 75
BASIC ZONE
SAARISELKÄ WILDERNESS ZONE
Koilliskaira Visitor Centre
Kopsusjärvi
Luirojärvi
Russia
Tankavaara
Sompio Strict Nature Reserve
Vuotso
Border zone
KEMIN-SOMPIO WILDERNESS ZONE
Lokka Reservoir
NUORTTI WILDERNESS ZONE
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HOSSA HIKING AREA

Hossa Hiking Area consists of eskers and waterway scenery. The era of the Ice Age has left its marks on the scenery.

LOCATION	
Regional Natural Heritage Services	Ostrobothnia-Kainuu
Province	Province of Oulu
Municipality	Suomussalmi
Area (ha), of which	9,022.5
Land (ha)	7,152.9
Water (ha)	1,869.6

LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	26.9.1979
Legislation Related to the Establishment	Act 606/1973, Government Decisions 758/1979 and 153/1982
Regulations	1980

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Hossa
Natura Code	FI1200743
SCI or SPA	SCI
IUCN Category	-
International Agreements and Recognitions Concerning the Site	-

CULTURAL HERITAGE VALUES	
Built Heritage	-
Ancient Relics	Over 60 prehistoric rock paintings.
Landscape Areas	-

PLANS CONCERNING THE SITE	
Management Plan	-
Published	-

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	42,000 (44,500)
Information Services and Number of Visits in 2003 (2002)	Hossa Visitor Centre 41,200 (44,500)
Visitor Surveys Published Typical Visitor	2001 Unpublished 45 - 54-year-old man who comes to the area with his family and stays there for about 3 days. He is interested in fishing, walking along the paths or nature observation. He comes from Suomussalmi, Helsinki or Oulu and has visited Hossa Hiking Area already before and the last visit took place a couple of years ago.

TEIJO HIKING AREA

Teijo Hiking Area has a coastal landscape of southern Finland with lakes, rocks, heaths covered by Scots pine and sunken bogs. Forests are mainly young.

LOCATION	
Regional Natural Heritage Services	Southern Finland
Province	Province of Western Finland
Municipality	Perniö
Area (ha), of which	2,572.9
Land (ha)	2,400.4
Water (ha)	172.5

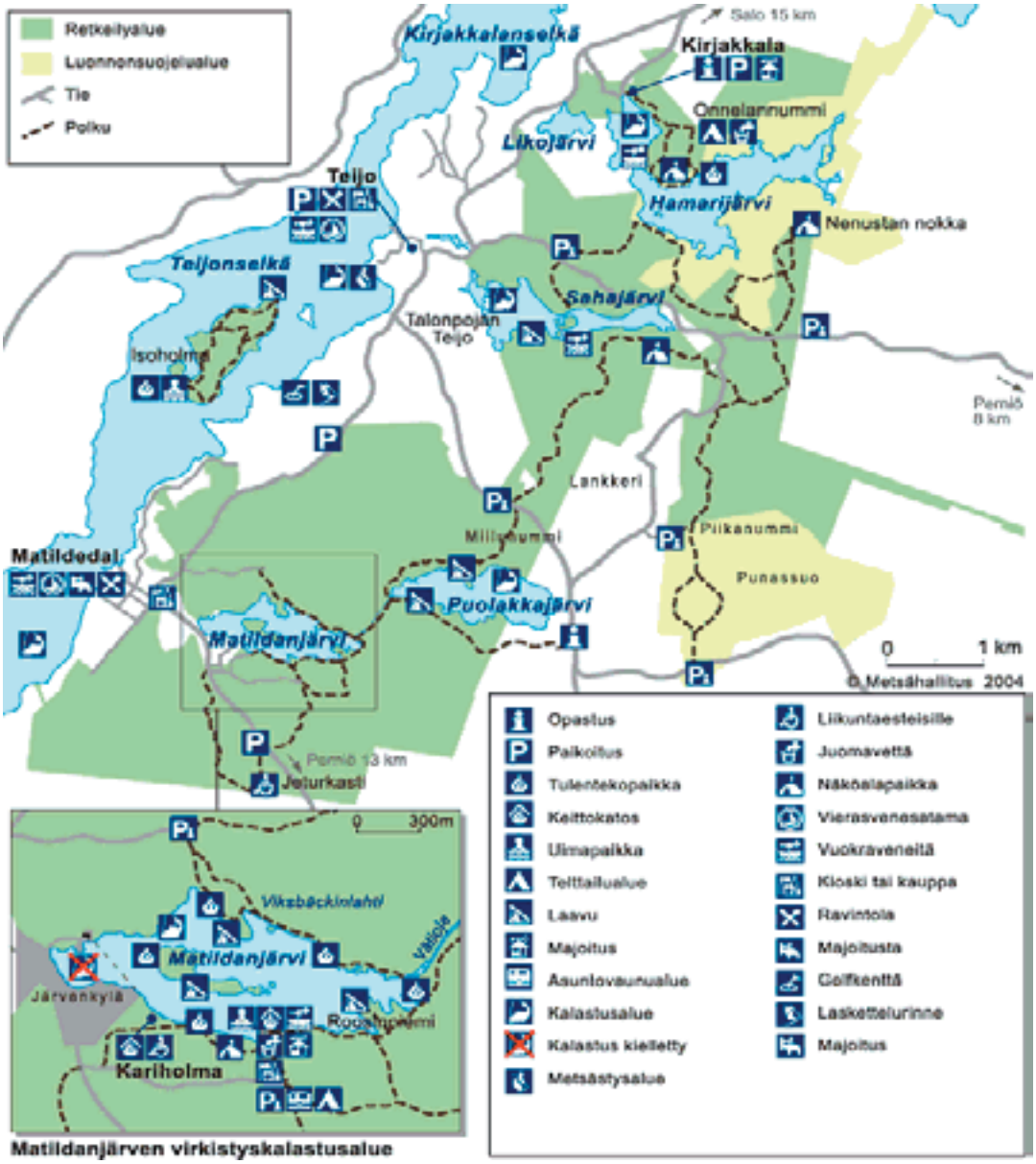
LEGISLATION RELATED TO THE ESTABLISHMENT	
Established	1.2.1191
Legislation Related to the Establishment	Act 606/1973, Government Decision 47/1991
Regulations	-

INTERNATIONAL AGREEMENTS CONCERNING THE SITE	
Natura 2000 Sites	Teijon ylänkö
Natura Code	FI0200086
SCI or SPA	SCI
IUCN Category	-
International Agreements and Recognitions Concerning the Site	-

CULTURAL HERITAGE VALUES	
Built Heritage	Kirjakkala; ironworks (5 protected buildings from the 18th and 19th centuries and a dam from the 1680s).
Ancient Relics	-
Landscape Areas	-

PLANS CONCERNING THE SITE	
Management Plan	2004 (13.4.2004)
Published	Unpublished

VISITORS AND NUMBER OF VISITS	
Number of Visits in 2003 (2002)	60,000 (60,000)
Information Services and Number of Visits in 2003 (2002)	Matildajärvi Visitor Centre (will be opened during summer 2004)
Visitor Surveys	1996
Published	Finnish Forest Research Institute, Research Papers 726
Typical Visitor	Nearly middle-aged visitor from Salo or Turku with vocational or post-secondary vocational education. He visits the area with his family or friends or possibly with a bigger group and is interested in fishing, outdoor recreation or hiking.



Matildanjärven virkistyskalastusalue

Assessment of Finnish Protected Areas by the Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) Methodology

National Parks, Strict Nature Reserves, Wilderness Reserves and National Hiking Areas

Jonna Berghäll and Mervi Heinonen
Metsähallitus, Natural Heritage Services
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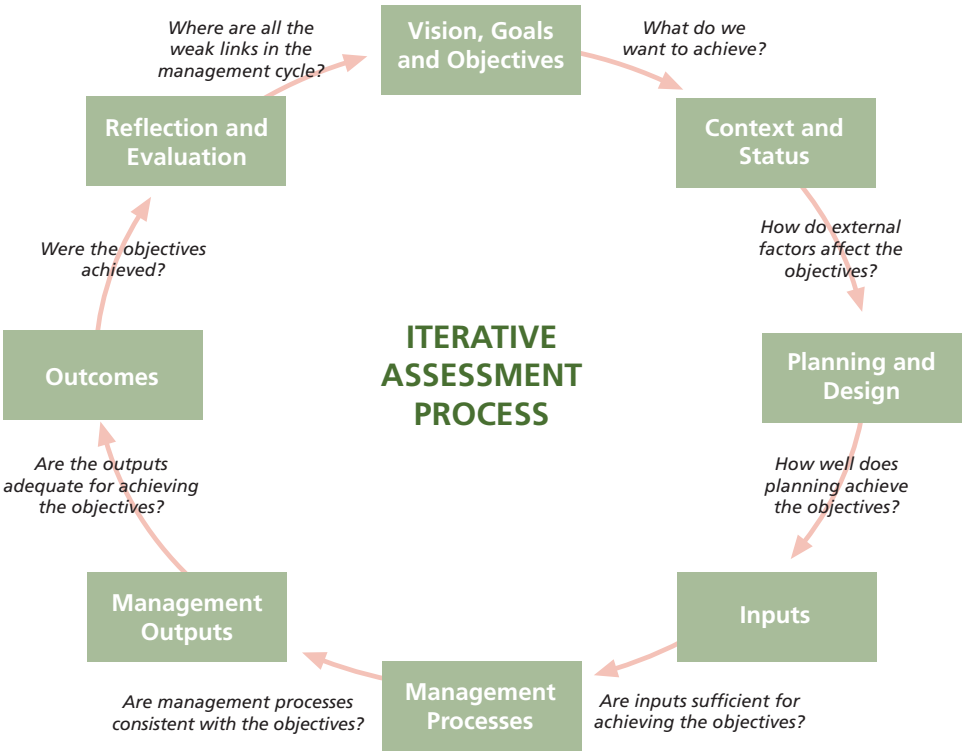
Introduction

The Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodology is a simple tool designed for protected area (PA) policy makers and managers to quickly assess the overall management effectiveness of protected areas within a particular country or region (Ervin 2003). This approach has now been applied to the most important protected areas within the PA system of Finland.

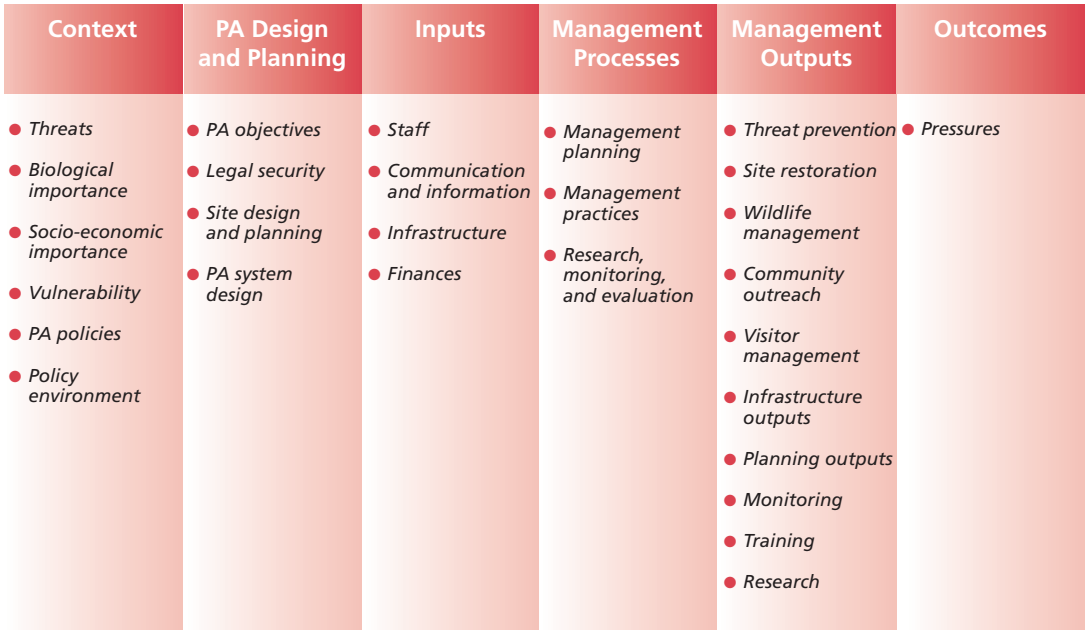
The RAPPAM methodology is based on the framework developed by the World Commission on Protected Areas (WCPA) outlined by Hockings et al. (2000). The protected area management system is described as a cycle of planning, implementation and evaluation. An assessment can evaluate each stage of this cycle, focusing on different questions and information. These stages are depicted in figure 1, which shows the relationship between iterative assessments and the management cycle.

Figure 1. Assessment and the Management Cycle (adapted by Ervin 2003 from Hockings et al. 2000)



The WCPA framework includes six main assessment elements: context, planning, inputs, processes, outputs and outcomes. The RAPPAM questionnaire covers each of these elements as illustrated in figure 2. There are in all 19 questions with varying number of subsets.

Figure 2. Assessment elements in the RAPPAM questionnaire (Ervin 2003)



The RAPPAM methodology is designed for broad-level comparison among many protected areas, although it can be applied to a single protected area. It can answer a number of important questions faced by managers of a protected area system.

Scope of the Assessment

This assessment is meant to complement in a quantitative manner the general qualitative Management Effectiveness Evaluation (MEE) of the Finnish protected area system being conducted by an international evaluation team. As specified by questions in the work plan of the evaluation, certain aspects of the context and management cycle of the system being evaluated are of interest to the appraisal. These questions were presented in the WCPA framework presented above.

For practical reasons the protected areas selected for the RAPPAM assessment are the same for which basic information has been compiled for use in the MEE. These are the National Parks (34 NP), Strict Nature Reserves (17 SNR), Wilderness Reserves (12 WR) and National Hiking Areas (7 NHA) administered by Metsähallitus. One National Park (Koli) and two Strict Nature Reserves (Vesijako and Malla) are under the administration of the Finnish Forest Research Institute, but have not been included in this assessment as the questionnaire information was incomplete or not available. Though the whole protected area system comprises 480 statutory PAs (14 995 km² not including Wilderness Reserves and National Hiking Areas) and in addition numerous areas not yet designated by a statute (another 7 777 km²), the areas included in this assessment form the core of the Finnish nature conservation system. In all they cover an area of 24 898 km².

Description and Implementation of the RAPPAM Methodology

The Rapid Assessment Questionnaire and directions on how it is to be filled out are given in detail in the documentation by Ervin (2003). The questionnaire form is also attached as appendix 1 in this report. As described earlier, the questions are grouped within the assessment elements provided by the WCPA framework. Most of the questions are self-explanatory, but the interpretation of some requires mutual understanding by the respondents.

The first question in the questionnaire collates background information, such as date of establishment, size and annual budget of the protected area, as well as specific management objectives and critical activities in the PA to achieve these. The second question maps out the pressures and threats which confront the particular PA. In the RAPPAM methodology, pressures are considered to be forces, activities or events that have already had a detrimental impact on the integrity of the PA. On the other hand, threats are potential or impending pressures in which a detrimental impact is likely to occur or continue to occur in the future. Examples of both are given in the RAPPAM documentation by Ervin (2003). Questions 3 and 4 assess the biological and socio-economic importance of the PA and question 5 the vulnerability. Questions 18 and 19 at the end of the questionnaire address the protected area policies and policy environment at the national level. Together these seven questions help to form a picture of the context in which a particular PA is at the time of the assessment.

Protected area design and planning is addressed by questions 6, 7, 8 and 17. These assess the PA objectives, legal security matters and those of site design both at PA and PA system level. Inputs are considered in questions 9-12. These include staffing, communication and information systems, infrastructure and finances. Likewise questions 13-15 address management processes. Issues assessed include management planning, decision making as well as research, evaluation, and monitoring. Outputs are reviewed in question 16. They are considered in relation to threats and pressures, PA objectives and annual workplans in the past two years. Management outcomes are evaluated using the analysed results of the questionnaire.

The RAPPAM assessment of the Finnish protected areas was carried out by the regional PA management of Metsähallitus. The questionnaires were initially filled out by park managers and then checked by the executive team of each of the six regional units of the Natural Heritage Services (NHS), the business unit responsible for PA administration. Each regional unit carried out the assessment for those PAs for which it is responsible. The procedure was guided in detail by the Central Unit to unify interpretation of the questions (the questionnaire was not translated), but no training was organized.

Analysis of the Results

The decision to go forth with the RAPPAM assessment in connection to the Management Effectiveness Evaluation of the protected areas came late in the process, which gave managers a relatively short time (one month) to answer the questions and organize the management and executive team meetings.

As the time available for the analysis of collected data was also rather short (two weeks), it was executed in a very general manner. Focus was centred on issues seeming relevant to the Management Effectiveness Evaluation to which the assessment exercise was meant to give supplementary information.

Analysing the findings of the RAPPAM questionnaires was carried out in the manner outlined in the documentation by Ervin (2003). Background information was considered in relation to relevant management effectiveness questions (i.e. question 6 on objectives, question 12 on finances and question 16 on outputs). The threats and pressures (question 2) were analysed by calculating for each a degree, which represents the severity of the problem concerned. Pressures were considered within a five-year period in to the past and threats toward the future. The increase or decrease of each pressure or threat as well as the extent, impact and permanence were taken into consideration while calculating the degrees. These were all scored (see questionnaire, appendix 1) and the scores were multiplied in order to get the degree of severity (which is something between 1 and 64).

There were some problems in understanding the difference between pressures and threats, especially when a pressure was clearly seen as a continuing one. For this reason the pressures and threats were first united while analysing the results to get a picture of the relative severity of different issues. This was done in regional context in the same way as other questions were later considered (see below). The severity degree for a certain issue was averaged over all PAs of a geographical region and then the degrees compared relative to each other (they are pictured as procentages). In addition, pressures and threats were also analysed with the consideration of their occurrence in different PAs. Some problems are mentioned only in a couple of PAs, but are of great severity, while others occur in many PAs, but do not cause such a big destruction.

Despite possible misinterpretations, the pressures and threats were also viewed separately for each region to illustrate those issues which were clearly seen as future threats. Appendix 2 gives more specific details of the pressures and threats recorded for different PAs. Appendix 3 summarises this information for different PA types and geographical regions.

The analysing of questions 3–19 was done in a different manner. The scores for these questions were given on the following scale:

Yes = 5 Mostly yes = 3 Mostly no = 1 No = 0

Based on this scoring, averages were calculated. Because there were so many areas within each of the protected area groups and so little variation between the areas within a group, comparisons at PA-level did not seem sensible. Thus averages where calculated for each individual question in three ways:

i. for all the 70 PAs included in the assessment
ii. for each group of different PA types (NP, SNR, WR, NHA)
iii. for PAs grouped into three geographical regions

The geographical division used in the last mentioned grouping of findings was quite practical. The PAs in Finland are heavily centred in the northern part of the country and this approach was designed to give general geographical perspective to the assessment. Based on the regional unit division of the NHS, it was easily applied. Each unit is accountable for the PAs within its boundaries. The units of Southern, Western and Eastern Finland were collated together as the southern group. Together these comprise 33 PAs and a total of 148 600 hectares. Average size of PA in this geographical group is 4 503 hectares. Situated in the more populated and industrialized part of the country where (private) forestry is also intensive, these PAs compare in circumstances. The PAs of the large Ostrobothnia-Kainuu Regional Unit form a midway group of their own. Together these comprise 15 PAs and a total of 127 000 hectares. Average size of a PA in this geographical group is 8 470 hectares. This region is relatively sparsely populated and there is very little industry. Forestry on the other hand is extensive in this area, especially in the eastern part. Finally the PAs of the Northern Finland Regional Unit and those of the Northern Lapland District for Wilderness Management were collated to form the northern group. This large area comprises a total of only 22 PAs but a total land area of 22 000 km². It is characterized by a very sparse population and practically no industry. Forestry is restricted in most of the region.

All available data was used for calculating the results. When a question was left unanswered it was excluded from the calculations. Such cases were very few in number. Averages over protected areas, PA types and geographical regions are presented in this report. Original questionnaire forms and summaries of calculations are archived by Metsähallitus.

For each of the six elements of the management effectiveness evaluation framework at least one relevant statistical figure was drawn up to illustrate points of interest to the on-going appraisal. Other issues dealt with in the questionnaire are also analysed numerically, but only discussed in a summarizing manner in this report.

Results and Discussion

1 Context

The chapter on context includes the threats and pressures that confront the protected areas, the biological and socio-economic importance and the vulnerability of the PAs as well as PA policies and policy environment (see figure 2). We begin the analysis of the results with these issues because they create the context in which PA management is practised. Later, in chapter 2, we focus on the actual management effectiveness.

1.1 Pressures and Threats

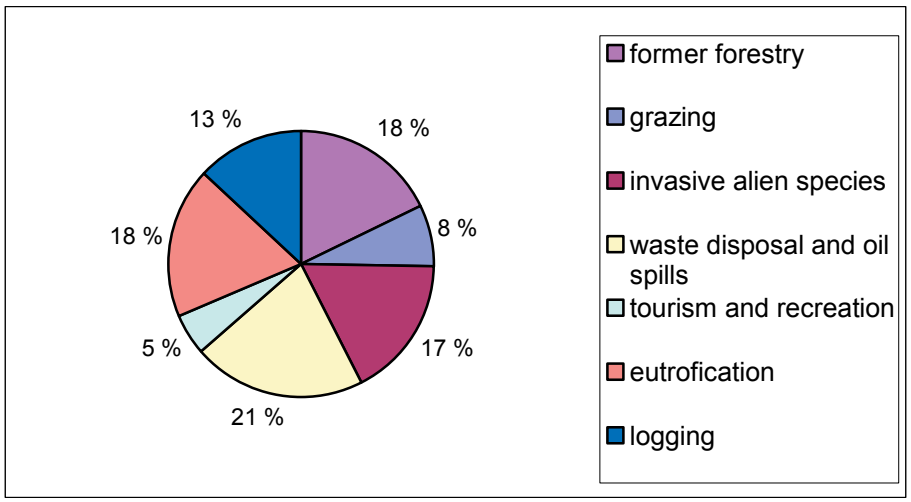
In the RAPPAM methodology, pressures mean current problems whereas threats are problems which have potential of occurring in the future. As mentioned, some misinterpretation in the understanding these respective definitions was seen. Thus both pressures and threats are mainly analysed together and in this report. They are also analysed primarily in the context of different geographical regions. However, in appendix 2 the pressures and threats of different PAs are recorded separately and examples of particular parks are drawn into the discussion.

Pressures and threats vary remarkably in different parts of Finland. Coastal areas have totally different problems than, for example, the northern part of Finland. Also the severities of threats differ. Some may be very common, but have only a mild effect on nature, while others have a large-scale effect but they are low in number.

1.1.1 Southern Finland

Figures 3 and 4 show the pressures and threats in southern Finland. According to figure 3, waste disposal and oil spills are the biggest concerns when pressures and threats are compared on the basis of calculated degrees. The degrees tell about the severity of the problems and these are pictured relative to each other. However, as can be seen from figure 4, PAs with oil spill problems are low in number. Large scale oil spills usually take place out in the sea or in the coastal areas where they create a serious problem. Naturally the problem is mentioned in the maritime national parks (Archipelago NP, Eastern Gulf of Finland NP, Ekenäs Archipelago NP).

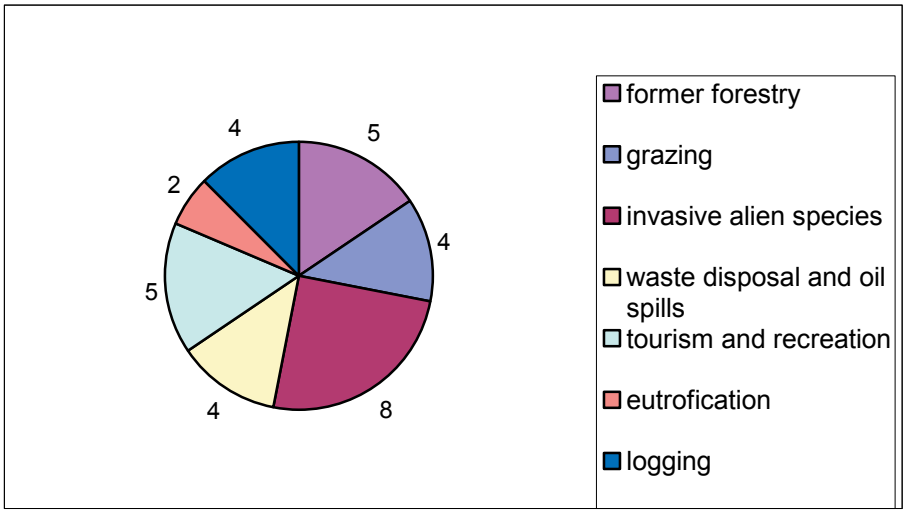
Figure 3. Comparative pressures and threats in southern Finland measured in degrees



Eutrophication also seems to be a problem in southern Finland. This threat was, however, seen as a problem only in the Archipelago National Park. This may be because eutrophication was not mentioned in the list of possible pressures and threats in the instructions given for answering the

RAPPAM questionnaire. It can be assumed that eutrophication may be a more serious problem than the results of this questionnaire show.

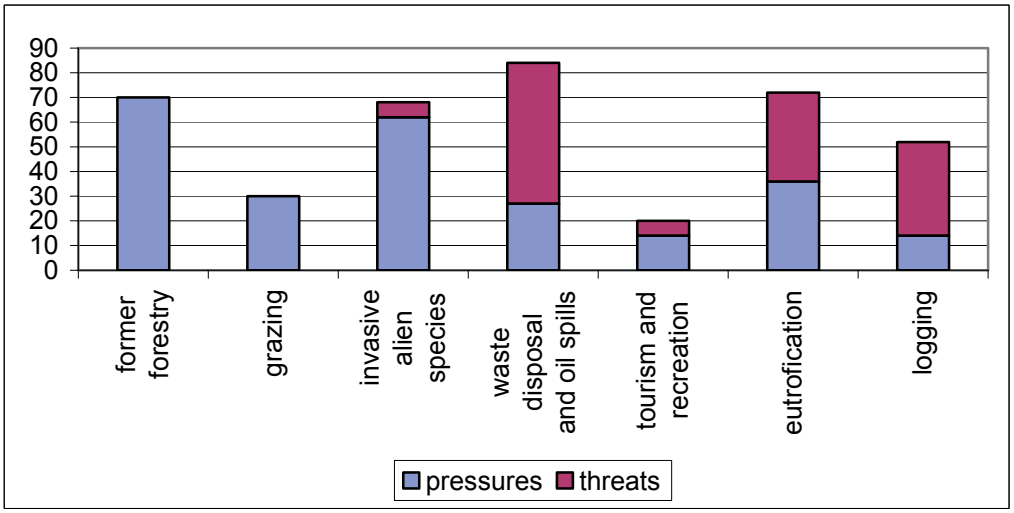
Figure 4. Pressures and threats in southern Finland (frequency)



Invasive alien species, such as the American mink, and former forestry areas within PAs are often mentioned and quite severe pressures. Many PAs in western Finland, for example, include parts of former commercial forest that will be restored. Before these areas have been restored they may, however, reduce or even threaten the biodiversity values of the PAs. It is also interesting to notice that although tourism and recreation is considered as a pressure or threat in many areas, it does not form a severe problem according to the comparison of calculated degrees.

Figure 5 shows which problems are considered to be current pressures and which are regarded as future threats in southern Finland. According to figure 5, former forestry and grazing (e.g. elk in herb-rich forest habitats) are quite stable problems whereas oil spills and eutrophication may be serious threats in the future. Figure 5 shows the degrees of the pressures and threats and thus the severities of the problems.

Figure 5. Pressures and threats measures in Southern Finland (severity degrees)



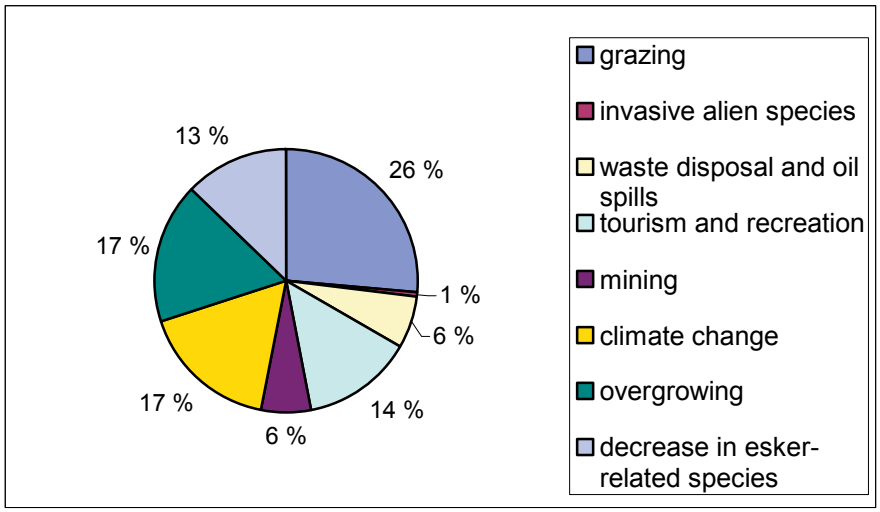
All the pressures and threats of southern Finland occur mainly in national parks. Strict nature reserves are not confronted by many pressures or threats and national hiking areas have problems only with tourism and logging. The problem of logging is present only in national hiking areas that

are multiple-use areas belonging to the Natura 2000 network, in which restricted forestry is allowed.

1.1.2 Ostrobothnia-Kainuu

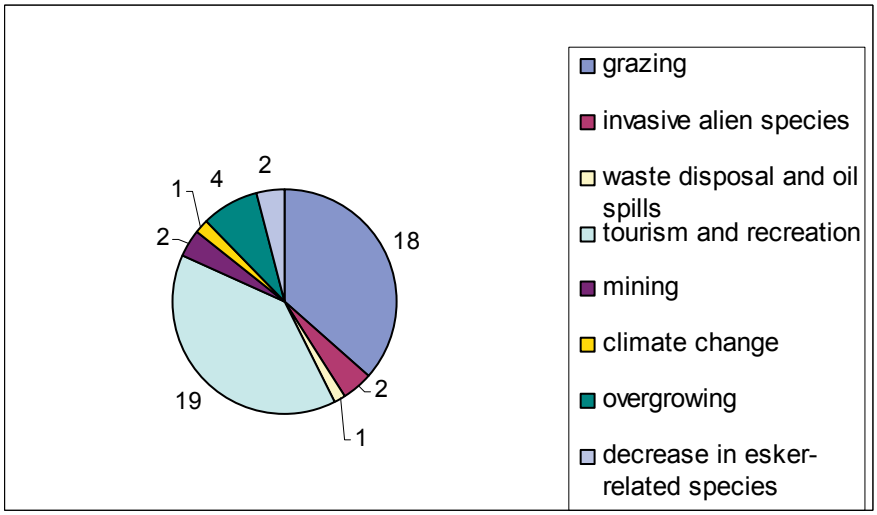
Grazing (of the reindeer) is regarded the biggest threat to PAs in Ostrobothnia-Kainuu region (see figures 6, 7 and 8). Grazing was mentioned as a problem in national parks, strict nature reserves as well as in national hiking areas. Also tourism is a pressure or threat in all the different types of PAs. In most cases it is feared that tourism erodes the soil and vegetation of the PAs. However, it is not regarded as such a serious problem as can be seen when comparing the degrees.

Figure 6. Comparative pressures and threats in Ostrobothnia-Kainuu measured in degrees



As can be seen from figure 6, climate change was seen as a severe threat in Ostrobothnia-Kainuu (17% of all when measured by degrees). However, this was mentioned as a problem only in one PA, Perämeri National Park. In this area the ceasing of decrease in sea level height due to climate change would be very destructive for land uplift coastal biotopes. The assessment perspective was about five years, within which most PAs are not likely to face dramatic effects caused by climate change. Within a longer time frame however, shifts in distributions of populations of certain (threatened) species might occur (Toivonen 1998). The plant populations demanding special environments are particularly vulnerable (e.g. species living in calcareous soils of Oulanka NP).

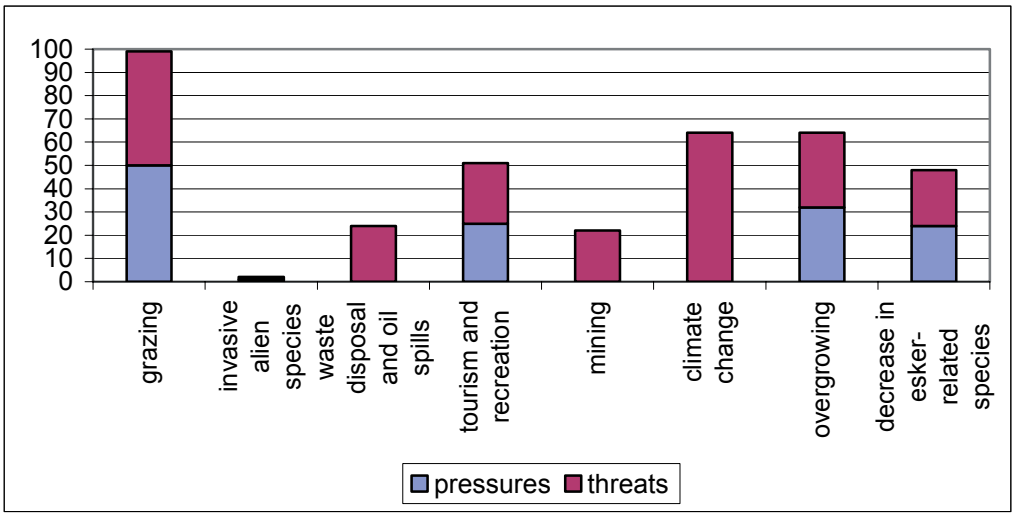
Figure 7. Pressures and threats in Ostrobothnia-Kainuu (frequency)



Overgrowing of lakes (e.g. in Puurijärvi-Isosuo National Park) or national landscapes (e.g. in Perämeri National Park) form a considerable threat in Ostrobothnia-Kainuu. Decrease in esker-related species due to high fire control was seen as a threat in Rokua National Park.

Figure 8 shows that managers foresee more future threats than current pressures in the Ostrobothnia-Kainuu region. These include oil spills (Perämeri NP), tourism, mining and destruction of habitats. Grazing is regarded as the most severe problem over all (degree of 100).

Figure 8. Pressures and threats in Ostrobothnia-Kainuu (severity degrees)



1.1.3 Northern Finland

In northern Finland as well reindeer grazing is in all terms the biggest problem that is threatening the PAs (see figures 9, 10 and 11). It is seen as a pressure or threat in all the protected areas and it causes long term problems in quite widespread areas. Also tourism and recreation is an often recognized problem but the level of its severity is regarded much lower. The same applies to hunting (poaching) and fishing. It is seen as a pressure or threat in many PAs but it is not regarded to have a very serious effect. There are also other threats and pressures mentioned but they are mainly restricted to one or two protected areas. For example, the gold panning (using heavy machines) in Lemmenjoki National Park is a problem as well as conversion of land use (building new downhill skiing slopes) in some northern national parks.

Figure 9. Comparative pressures and threats in northern Finland measured in degrees

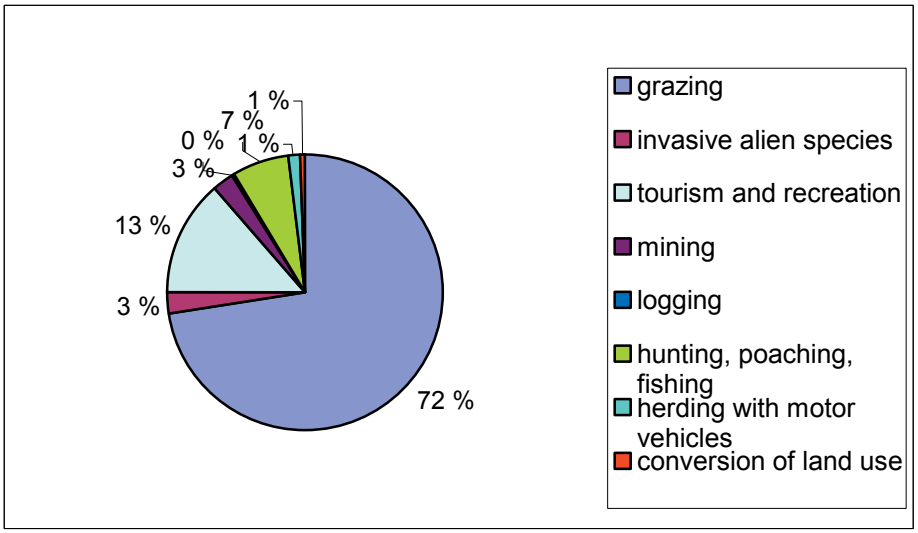


Figure 10. Pressures and threats in northern Finland (frequency)

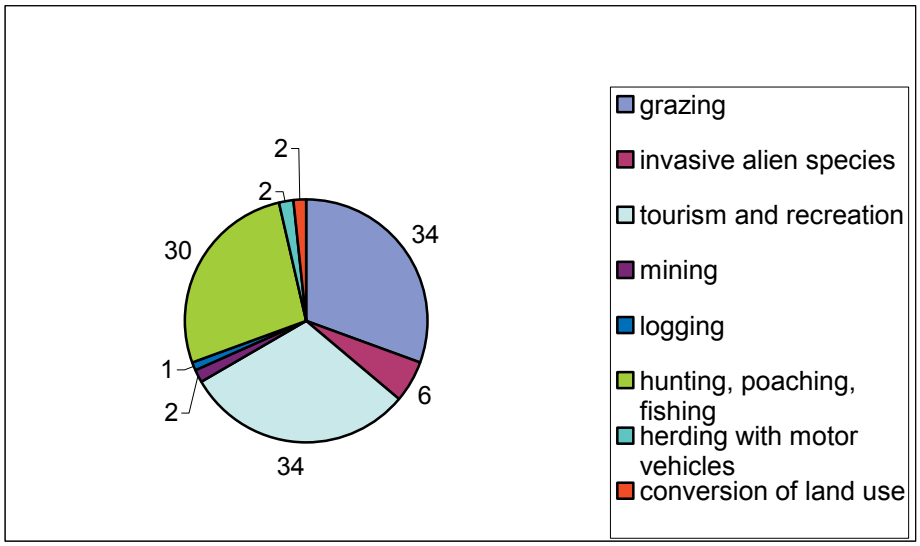
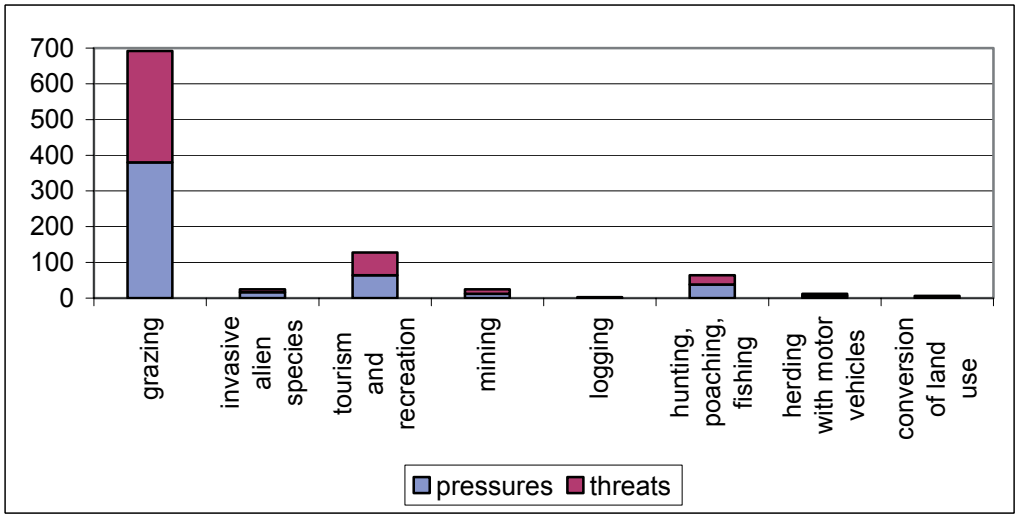


Figure 11. shows the division of the problems into pressures and threats and as can be seen, reindeer grazing is the number one problem now and in the future. One should also pay attention to the scale of this figure compared to the ones of southern Finland and Ostrobothnia-Kainuu.

Figure 11. Pressures and threats measures in Northern Finland (severity degrees)

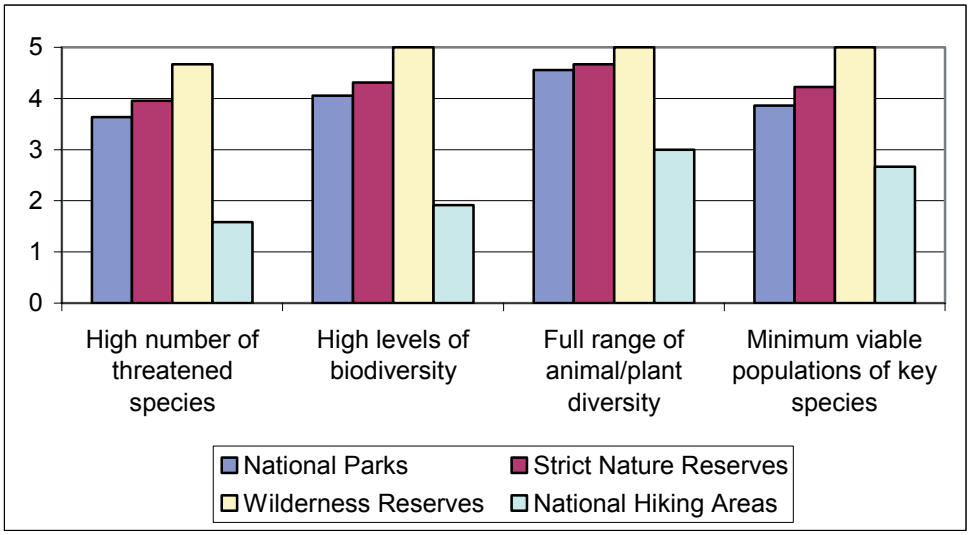


1.2 Biological Importance

After pressures and threats, RAPPAM methodology concentrates on biological and socio-economic importance and vulnerability of the PAs. Chapters 1.2–1.4 focus on these issues.

Figure 12 represents the biological importance of the protected areas as regards to species and biodiversity (see Appendix 1, questions 3a–3b, 3e, 3g). These were evaluated in the Finnish context. Wilderness reserves reached the highest score whereas national hiking areas have the lowest one. This can be explained by the fact that the national hiking areas have not been established primarily in order to preserve biodiversity in their area. Their biological importance differs from the other protected areas in almost every question.

Figure 12. PAs' biological importance is high in general

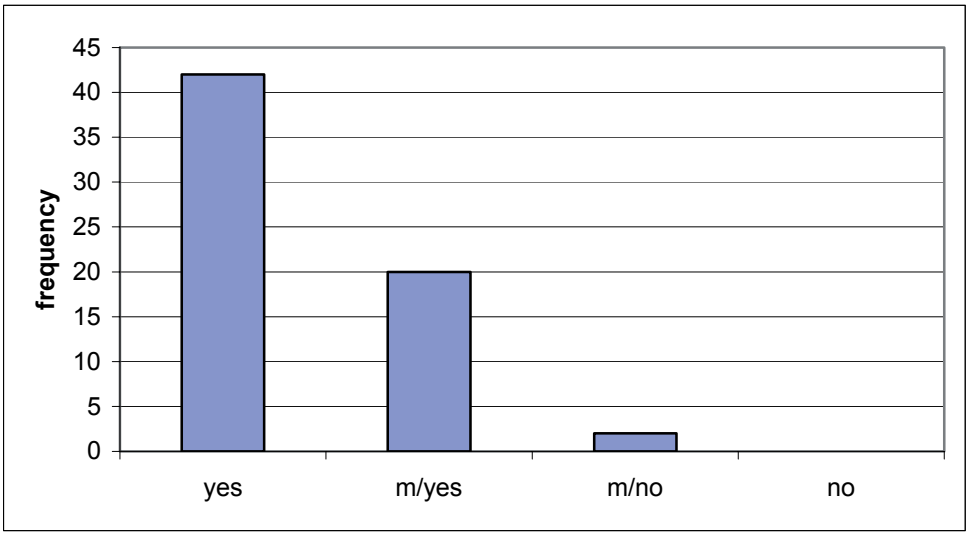


The biological importance of PAs is also considered to be comparatively higher in northern Finland. For example, the question about the high levels of biodiversity (3b) has been scored, on average, to 3.17 in the national parks in southern Finland, to 4.0 in the national parks in Ostrobothnia-Kainuu and to 5.0 in northern Finland. Though it is known that more biodiversity is present in the southern parts of the country this can be attributed to the considerably larger PAs in the north.

The question about endemism (3c) scored almost zero because, with the exception of Perämeri National Park, there are no endemic species living in Finland's protected areas. Landscape function (3d) is considered to be high in national parks (4.94), strict nature reserves (5.0) and wilderness reserves (5.0) and relatively high also in the national hiking areas (4.33). The national parks, strict nature reserves and wilderness reserves also contribute to the representativeness of the PA system (3f) with average scores of 4.7–4.8, whereas national hiking areas got an average score of 3.7. According to this questionnaire, protected areas have structural diversity that is consistent with historic norms (3h) and they include ecosystems whose historic range has been greatly diminished (3i) (such as old-growth forests). Only three PAs did not answer these issues with ”yes” but with ”mainly yes”, and they were all national hiking areas.

Figure 13 shows the results of the question of maintaining a full range of natural processes and disturbance regimes in the PA (3j). According to the comments written in the questionnaire forms, the biggest problem is the lack of a natural fire regime. All the ”mainly no” answers originate from national hiking areas.

Figure 13. Answers to the question " PA maintains the full range of natural processes and disturbance regimes"

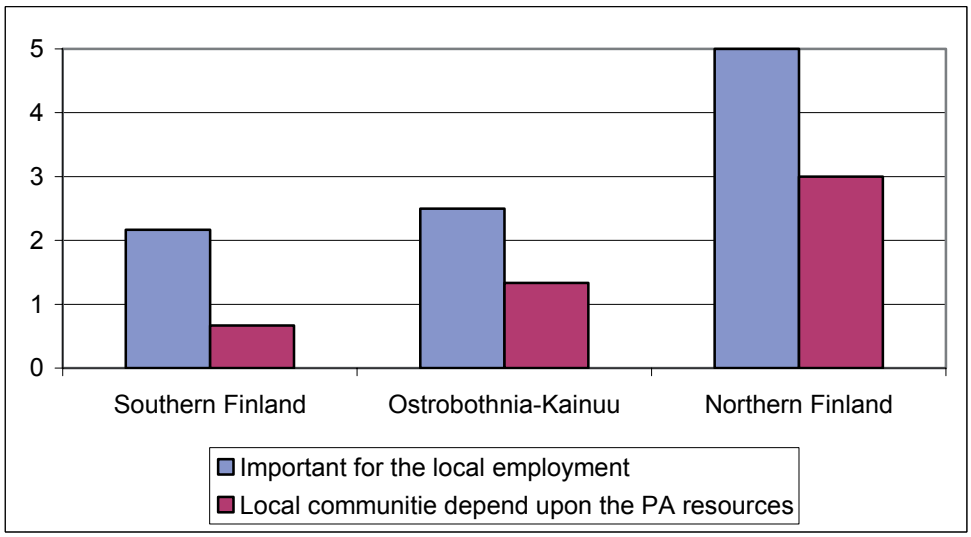


1.3 Socio-economic Importance

PAs are of special economical importance in northern Finland where they provide valuable work opportunities in protected area management and maintenance, and on the other hand, in nature tourism (question 4a, see figure 14). Especially national parks and wilderness reserves are regarded important for the employment of local communities. Average scores for the whole of Finland are 3.2 for the national parks and 4.7 for wilderness reserves.

PAs in the north of Finland are also seen important for the subsistence of local communities (4b) and the development of local communities (4c). Local communities depend upon PA resources especially in the wilderness reserves of Lapland (average score of 4.3). Community development opportunities are regarded important in the national parks all over the country (average score of 4.1).

Figure 14. Socio-economic importance of the national parks in different parts of the country



Religious or spiritual significance (4d) scored an average of only 0.3. This issue was considered to have any importance only in northern Finland. Aesthetic importance (4e) was, on the other hand, regarded high in all the areas all over Finland. Only some strict nature reserves answered "mainly

yes” instead of ”yes” to this question. Also ecosystem services and benefits to the communities were seen significant (average score of 4.6).

PAs in Finland do not contain many socially, culturally or economically important plant (4f) or animal (4g) species. Question 4f reached an average of 1.4 and question 4g scored an average of 1.7. Valuable species are mainly found in northern Finland, especially in wilderness reserves where average scores were 4.2 and 4.3. According to the comments given, reindeer, fish and seals are regarded most important.

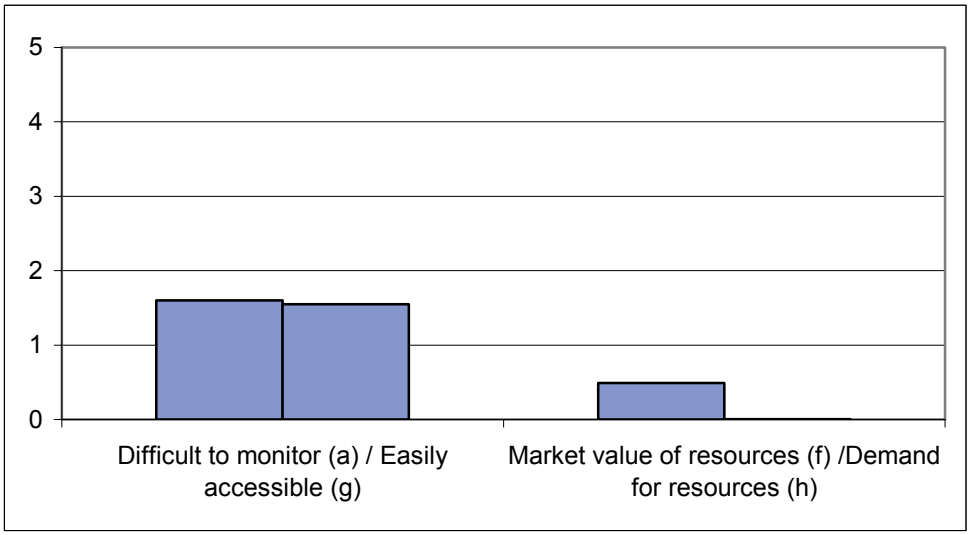
Recreational value (4h) is extremely high in almost all the other areas except in strict nature reserves, of which many are mostly closed from the public. Average score without strict nature reserves is 5. Also educational and scientific values (4j) were seen high with a total average of 4.5. The average score of national hiking areas (4.1) affected decreasingly to the total average score of this question.

1.4 Vulnerability

Vulnerability is not a problem within Finland’s PA system. There is no bribery or corruption (5c), political instability (5d) or managers who would be under pressure to exploit the resources (5i). Neither is recruitment and retention of employees a problem (5j). These question were answered ”no” in all the protected areas.

The only problems in Finland are the difficulty of monitoring the PAs (5a) and the easy accessibility of the areas (5g). Especially extensive wilderness reserves located far away from the PA managers have problems with monitoring (average score of 4.3). Also on the coast, for example, scattered areas of the Archipelago National Park are difficult to monitor. However, as can be seen from figure 15, the value of (5f) and demand for (5h) PA resources is relatively low in Finland and thus PA resources are generally not under any considerable threat despite easy access.

Figure 15. PAs’ vulnerability to illegal activities



1.5 Protected area policies and policy environment

Questions 18 and 19 in the RAPPAM questionnaire handle protected area policies and policy environment. These questions apply to the whole PA system, some have been looked at also on the regional level. The subquestions for both 18 and 19 reached high scores.

National PA policies are seen to clearly articulate a vision, goals and objectives for the PA system and commitment for the protection is also regarded high (18a and 18c, average score of 5.0).

Periodical reviews of the PA system and evaluations of management effectiveness (18h and 18j) are also adequate. The answers to questions 18d–18g and 18i (about inventories, historical range, restoration, research and training) reflect the answers given to the same kind of questions at PA level and the average scores vary between 4.7 and 5.0. The only point where PA managers were a bit concerned was the adequacy of the protected land to maintain natural processes at a landscape level (18b, average score of 3.3).

The PA-related laws and the enforcement of the laws are found effective (19a and 19e). National policies are seen to promote environmental education and training, sustainable land management and land conservation mechanisms (questions 19f–19j). Communication is high and national policies foster also dialogue with, for example, NGOs (19d, 19j). All these questions got only “yes” answers. The only problem related to the policy environment was funding (19b). This question got an average score of 3.7.

2 MANAGEMENT EFFECTIVENESS

The chapter on management effectiveness begins with the management objectives and activities set for PAs. Then we concentrate on planning, PA design and the inputs provided. After that we analyse the actual management process and in the end discuss outputs and the overall management effectiveness. (See figure 2).

2.1 Management objectives and activities

Management objectives and critical activities vary a bit from national park to the other depending on the geographical and historical differences. Generally it can be said, that the most common management objectives in national parks are the protection of forest nature and its landscape and species, sustainable nature tourism and good hiking possibilities, as well as interpretation and research. Some parks also aim to protect, for example, lakeshore nature or sea archipelago, old-growth forests or esker nature and geology. Others may preserve heritage landscapes, have other cultural objectives or provide shelter for some rare or threatened species. According to this questionnaire the most common critical activities in national parks are restoration and nature management as well as management and provision of visitor services. Visitor management and soil erosion control are also regarded important and in some parks also the management of heritage landscapes. In northern Finland cooperation with the local communities is a critical activity.

The most important management objectives of the strict nature reserves are protection of forest nature and scientific and educational use. Restoration and nature management as well as supervision are considered to be the most important critical activities. Other activities mentioned were management of visitor services and cooperation with local communities and other stakeholders.

Wilderness reserves protect the natural environment and at the same time preserve cultural values of the area. The management objectives are to preserve pristine characters of the area, protect Sámi culture and traditional subsistence uses, and to facilitate multiple-use of the natural environment. The most important activities are restoration, threat prevention and mitigation, law enforcement, supervision and wildlife management intervention.

National hiking areas reconcile outdoor recreation, ecotourism, the conservation of nature and culture, and forestry. These issues form the basic management objectives whereas restoration, management and provision of visitor services, visitor management and cooperation with stakeholders are considered to be the critical activities in national hiking areas.

2.2 Planning

Planning includes objectives, legal security and site design. As can be seen from figure 16, PA objectives provide adequate protection of biodiversity (6a). In this RAPPAM assessment only one national hiking area answered this question otherwise than “yes”. The score for the question about the statement of biodiversity-related objectives in management plans (6b) was worse due to the lack of management plans in some areas (for more, see figure 22). Figure 16 shows that management policies and plans are found consistent with the PA objectives (6c) and employees understand the objectives and policies (6d) very well.

There are some problems concerning the local communities’ support for PA objectives (question 6e, average score of 4.5). Figure 17 shows that these problems are present in northern Finland where unsettled disputes regarding land tenure or use rights also occur with the Sámi people (7b). The Sámi Parliament has not supported the decision making process and land tenure by Natural Heritage Services of Metsähallitus. The resolving of the conflicts is also seen to some extent as a problem in certain areas (7e).

As figure 16 shows, all the areas are regarded to have long-term legally binding protection (7a). Still more staff and financial resources could be needed to conduct law enforcement activities (7d). This need is recognized especially in wilderness reserves. Also boundary demarcation should and will be improved (7c). Demarcation has not been finished or is otherwise not adequate in some national parks in southern Finland and in the wilderness reserves of Lapland. The average score level for boundary demarcation, as well as for the zoning system (8c), can be seen from figure 18.

Figure 16. Planning: scores for objectives, legal security and site design

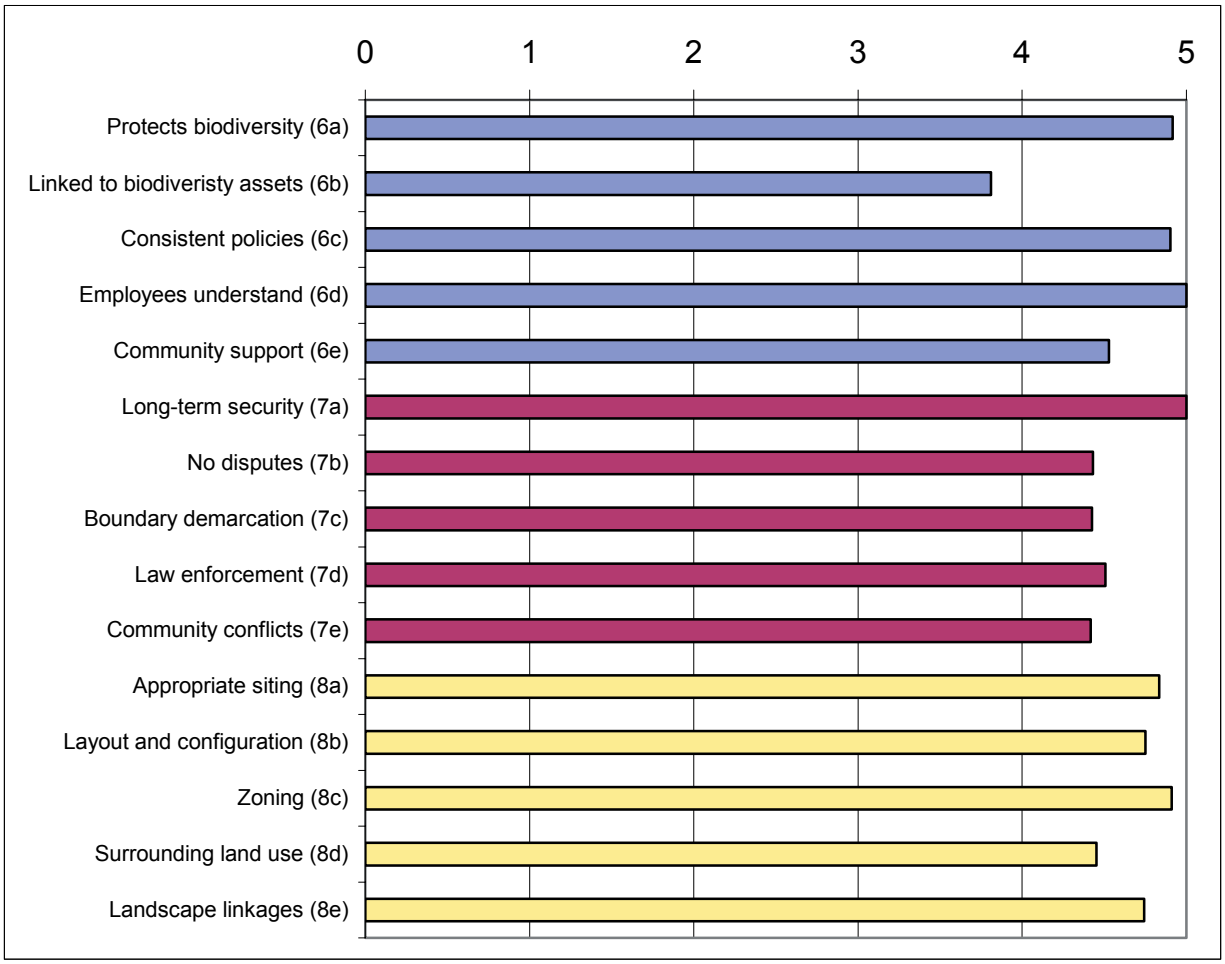


Figure 17. Planning and conflicts with the local communities in different parts of the country

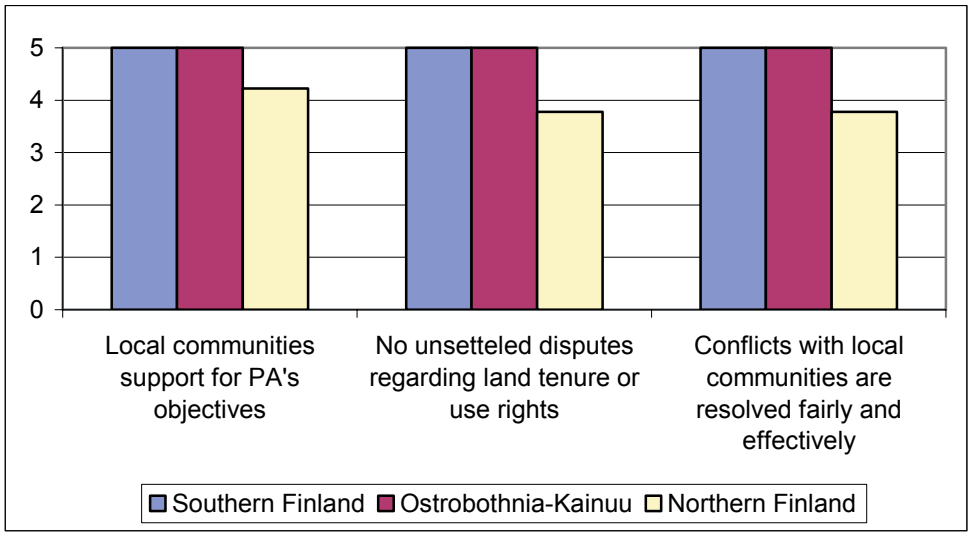


Figure 18. Scores for the adequacy of boundary demarcation and zoning system in all PAs

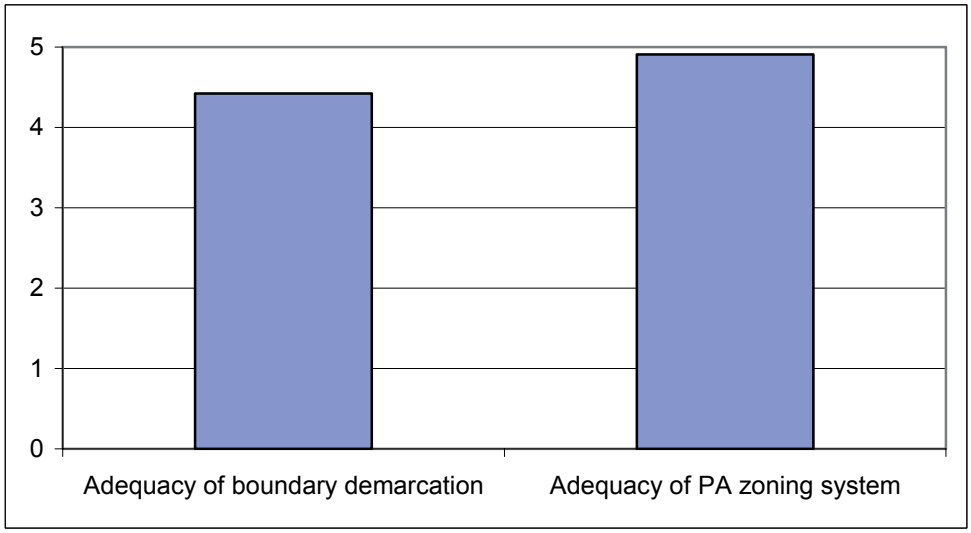
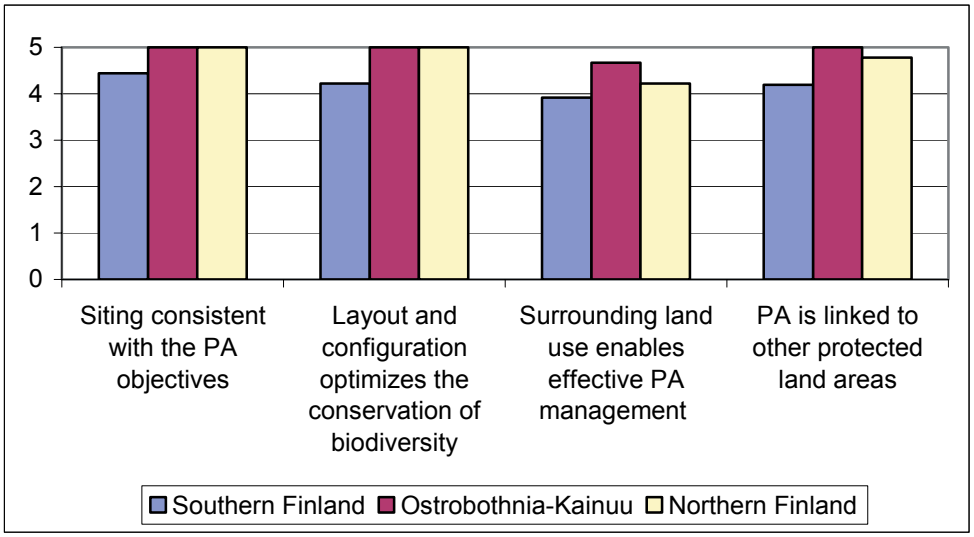


Figure 19 shows the results related to site design and planning in different parts of Finland. The siting of PAs seems to be consistent with the objectives (8a) and adequate to conserve the biodiversity (8b). Both of these questions reached average score of approximately 4.8. In all the questions concerning site design, southern Finland has the lowest scores. This is mainly due to the more scattered structure of the PA network in the south of Finland and the fact that there are less protected areas (which were included in the assessment), smaller PAs and less conserved area overall.

Protected area site or network design and its connection with ecosystem representativeness and protection of biodiversity was analysed also on a regional basis in question 17. The results were very much congruent to those calculated from the PA specific viewpoint. The regional PA systems were seen to consist of more exemplary and intact ecosystems in northern Finland than in the south (17c). Also when it comes to conservation of biodiversity (17j), the layout and configuration of regional PA systems were regarded to be more optimal in northern Finland (average score was 3 in southern Finland and 4 in Ostrobothnia-Kainuu and northern Finland).

Figure 19. Scores for site design in different parts of the country



The scattered nature of the PAs and the harmful land use practices around the PAs cause problems particularly in southern Finland. As a comment to questions 8d and 8e (concerning land use in surrounding areas and linkage to other PAs), it was mentioned that there are extensive commercial forests located next to the PA concerned or that there are some private areas located within national park boundaries. When the PA is surrounded by state land administered by Metsähallitus, the Environmental Guidelines (1998, 2004) apply to forest management – the ecological values of the PA are taken into account. On private land this is not always the case.

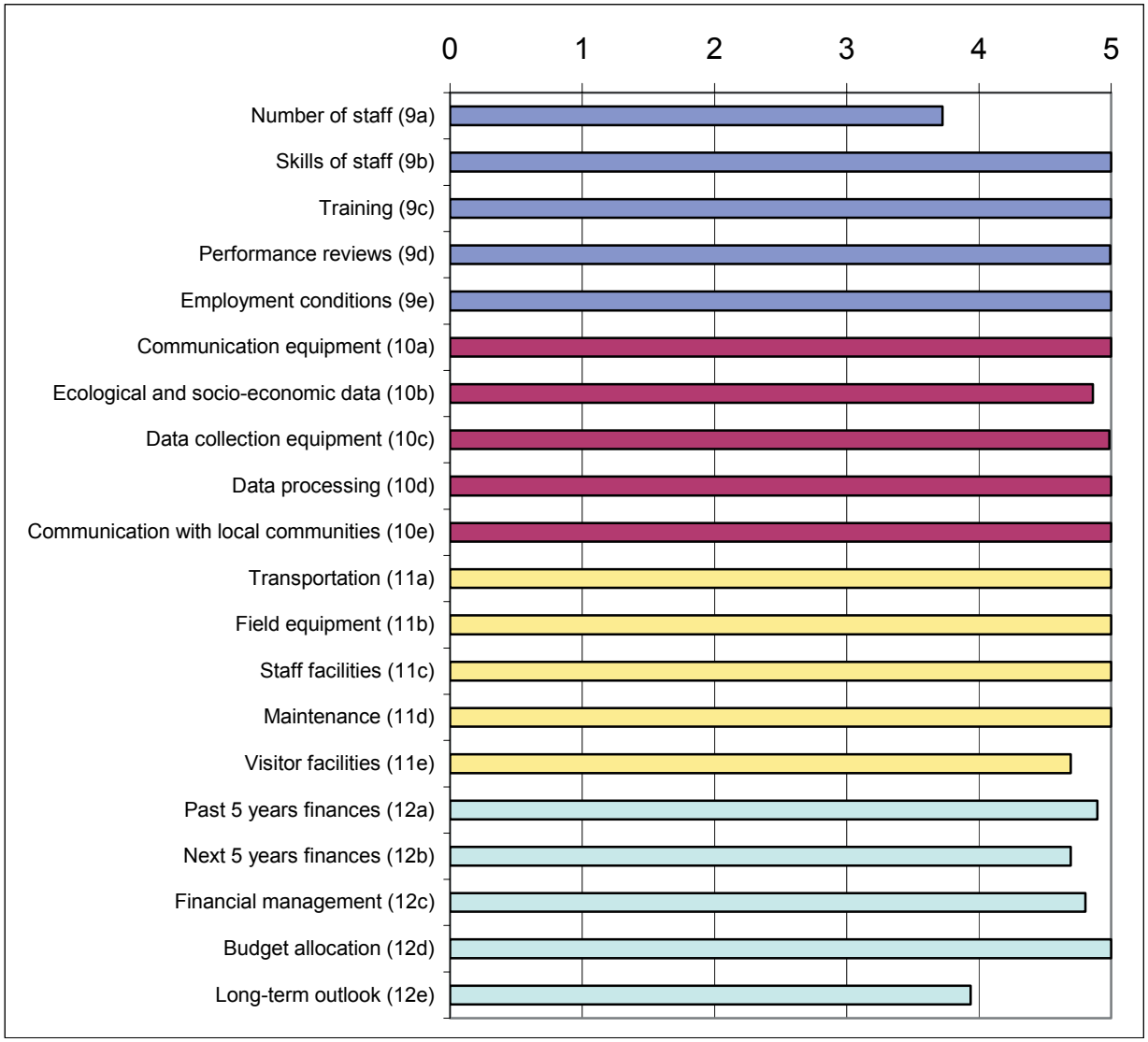
2.3 Inputs

The inputs include staff, communication, infrastructure and finances. Figure 20 summarizes the subcomponents of each of these factors as an average score of all the protected areas.

As seen from the figure, the level of staffing is not always seen sufficient (9a), but the skills of the employees, the training opportunities for the staff, the staff performance reviewing and the employment conditions all reached a top score of 5.0 (questions 9b–9e).

Figure 20 also shows that the means of communication between field and office staff (10a) are regarded adequate as well as the means of collecting new data (10c), processing and analysing data (10d) and communicating with local communities (10e). There were some complaints about the need for ecological and socio-economic data to support management planning (10b, average score of 4.9) but we will come back to this issue when discussing the research needs of PAs in chapter 2.4.

Figure 20. Inputs: scores for staff, communication, infrastructure and finances



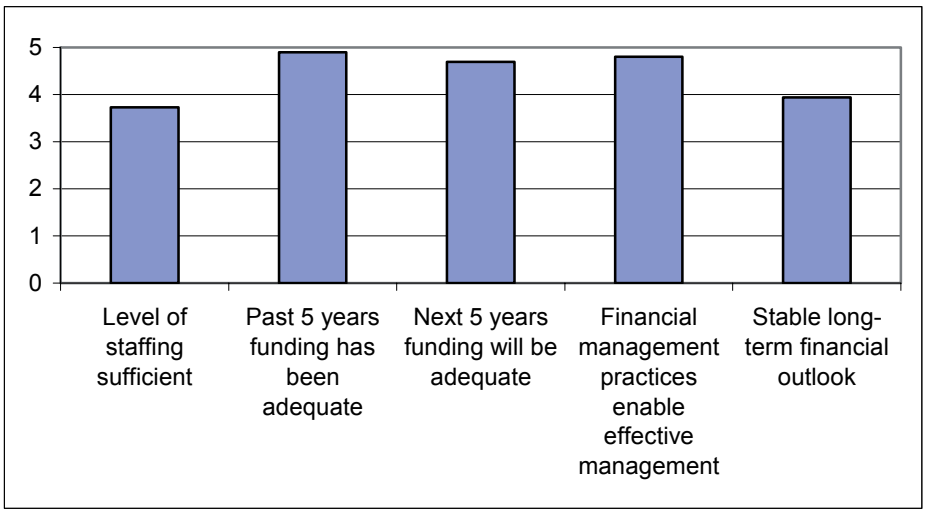
Infrastructure does not cause any problems in the Finnish PAs. Transportation equipment, field equipment, staff facilities as well as the maintenance and care of these are regarded adequate (questions 11a–11d). All the areas answered these questions with “yes”. However, there is a need for more visitor facilities (11e) in some areas, mainly in national parks. This issue is tightly related to financial matters and budgets.

Annual budget for each PA was asked in the section of background information in RAPPAM questionnaire form. The answers are, however, only coarse estimations because the NHS does not budget each PA separately. In addition, the estimations are not comparable because the answering to this question was not guided in detail. Due to the lack of guidance some PAs budgets may include also visitor centre budgets while others do not. Also, for example, fixed costs and investments may have been registered in different ways for different PAs.

The budgets for national parks are between 18 900 euros (Rokua National Park) and 1 068 000 euros (Archipelago NP). On the average, the budget for a national park is some 200 000 euros. The budgets for strict nature reserves vary from 500 euros (Maltio Strict Nature Reserve) to 300 000 euros (Kevo Strict Nature Reserve). Most typically an annual budget is, however, c. 5 000 euros. National hiking areas’ budgets are between 50 000 euros (Oulujärvi National Hiking Area) and 500 000 euros (Hossa Hiking Area) and wilderness reserves’ between 2 000 euros (Kemihaara and Tuntsa Wilderness Reserves) and 366 000 euros (Käsivarsi Wilderness Reserve).

Figure 21 gives an overall picture of the financial issues asked in questions 9a and 12a–12e. During the past 5 years funding has been adequate to conduct critical management activities (average score of 4.9) but the PA managers are more worried about the future prospects. Funding for the next 5 years is seen adequate with an average score of 4.7 but long-term financial outlook is found stable with an average score of only 3.9. The problem is noticed all over Finland and in all the different types of PAs. However, the practices of financial management are seen fairly efficient (average score of 4.8) and allocation of expenditures appropriate (average score of 5.0).

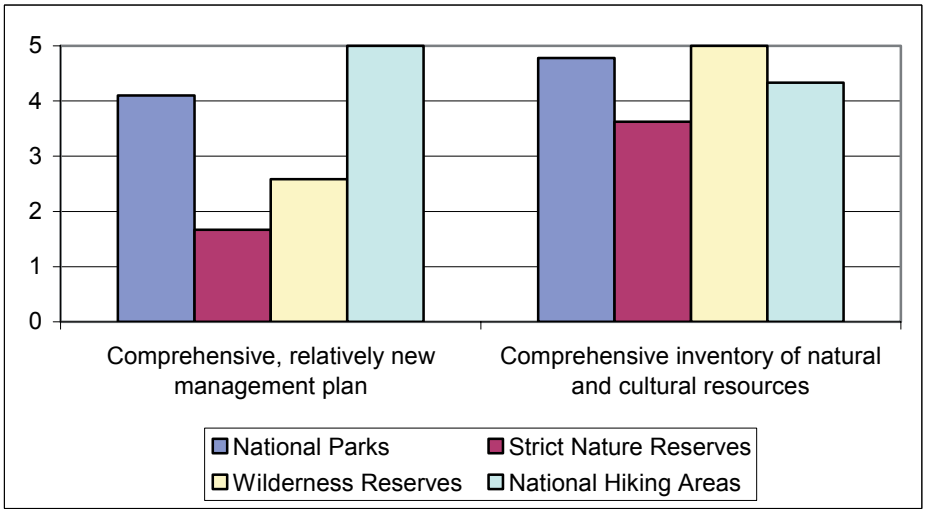
Figure 21. Scores for financial issues in all PAs



2.4 Management processes

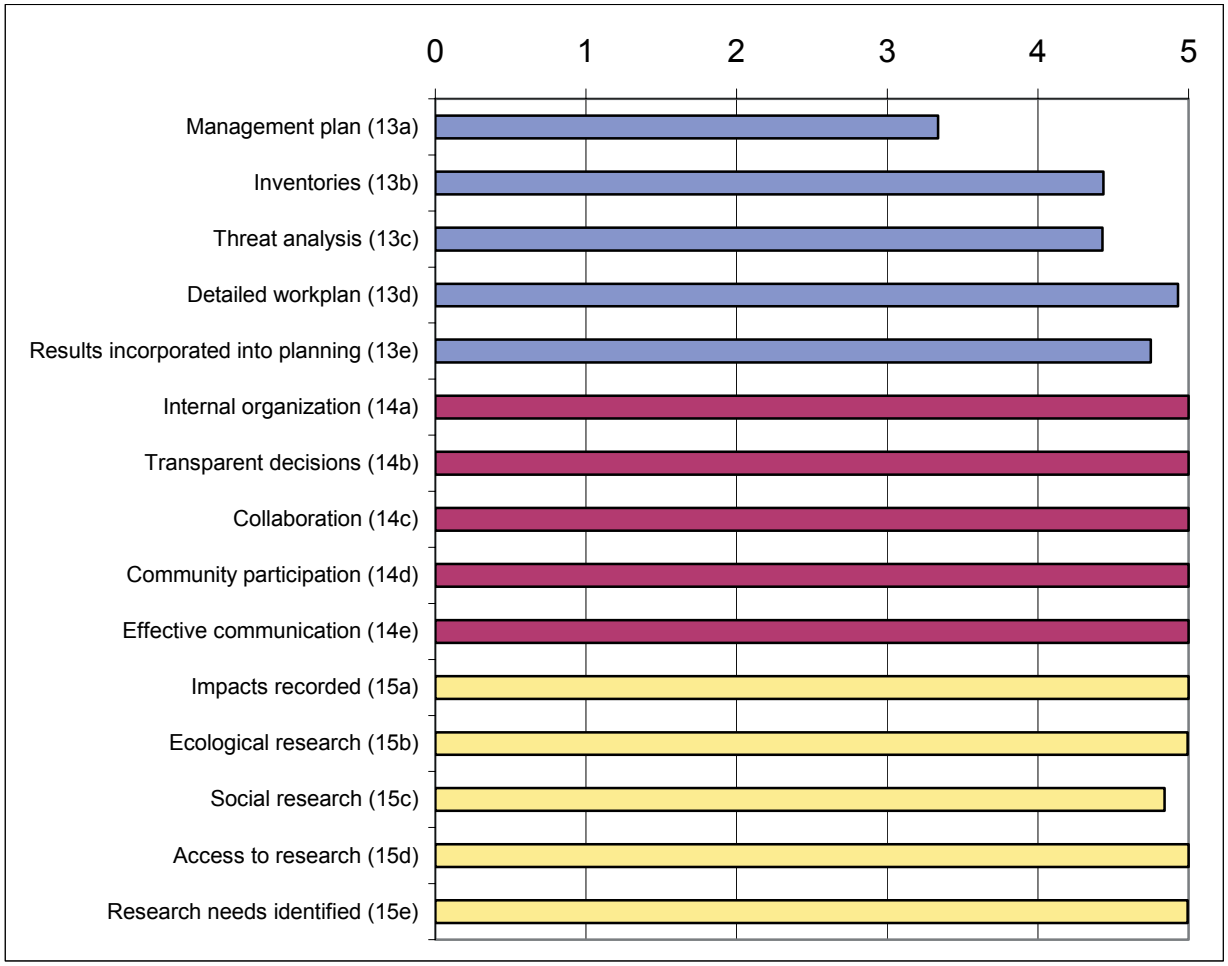
Comprehensive and relatively recently written management plans are found in the most of the national parks and national hiking areas (13a, figure 22). In southern Finland also strict nature reserves are mainly covered with management plans although it is not statutory in strict nature reserves. The management plans of many wilderness reserves are currently under preparation or ratification and that is why the average score for wilderness reserves is only 2.6. The biggest problem with the management plans for national parks is that the plans are getting old and new ones have not been drawn up yet (average score of 4.1). Some plans are also under preparation or ratification. However, as can also be seen from figure 22, inventories of natural and cultural resources (13b) have been done fairly comprehensively (total average score of 4.4).

Figure 22. Management plans and inventories of the resources in different PA types



Analysis of threats and pressures has been done in most of the national parks, wilderness reserves and national hiking areas. There are five strict nature reserves without this analysis and that is why total average score is only 4.4 (see figure 23). Detailed workplans are drawn in almost all PAs (13c).

Figure 23. Management processes: scores for management planning, management practices and research



The internal organization of the Natural Heritage Services is found clear and decision making transparent. Also communication between PA staff and administration is effective (questions14a–14b, 14e). Collaboration with partners, local communities and other organizations is regularly conducted and effective. Local communities can participate in decision making (figure 24, questions 10e, 14c–14d). So, although there are some conflicts with the local communities in northern Finland (see figure 17), these problems are striven to be solved with effective communication and participatory planning.

Figure 24. Communication with local communities

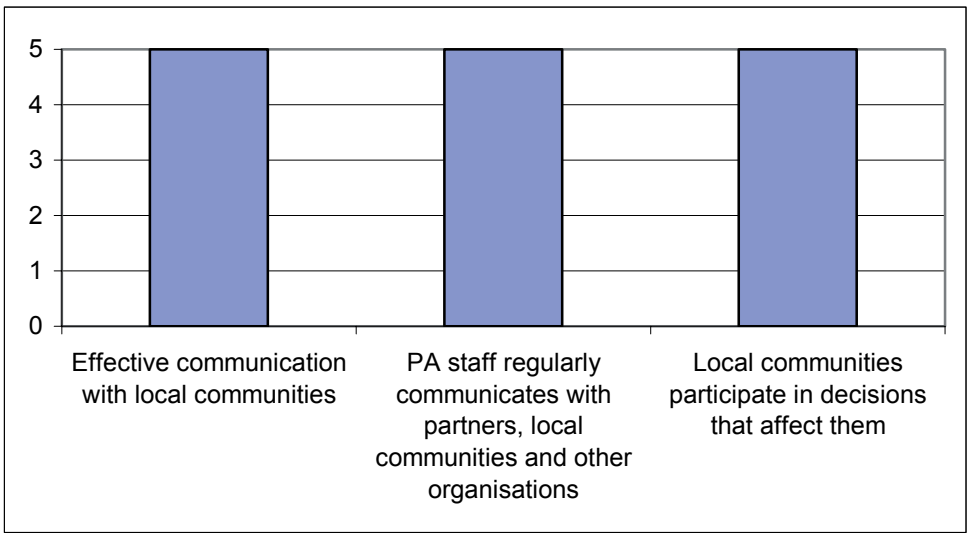
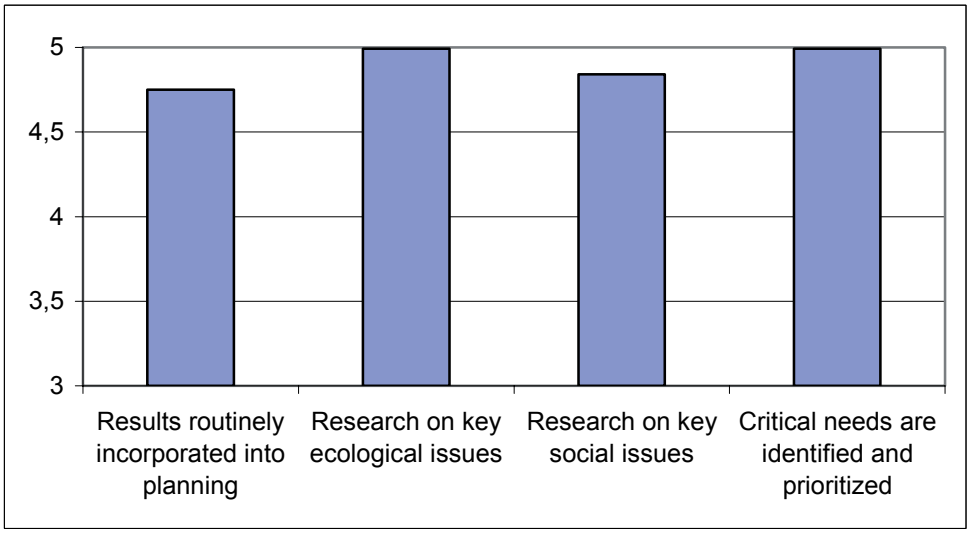


Figure 25 addresses some important issues related to research and monitoring (questions 13a, 15b–15c,15e). According to this figure, critical research and monitoring needs are well identified and prioritized and the ecological and social research is mainly consistent with the needs of the PAs. However, more research on social issues might be needed in some cases, especially in southern Finland. Also incorporation of the research and monitoring results into planning could be more efficient.

Figure 25. Scores for research and monitoring



2.5 Outputs and overall management effectiveness

Figure 26 shows how well some outputs have been consistent with the threats and pressures, PA objectives and annual workplans in Finland's protected areas. As can be seen, according to answers given by PA managers, things seem to be under control (average scores varied from 4.8 to 5.0). Even outputs in threat prevention, detection and law enforcement, which were considered somewhat problematic (see chapters 1.1, 1.4 and 2.2), were regarded consistent with objectives and workplans.

Less than maximum scores were given to site restoration, community outreach, staff monitoring and research and monitoring outputs. These reflect perhaps some of the most work-intensive and difficult tasks that the NHS is confronted with. Extensive site restoration is going on as part of the

METSO Action Programme (2003). Ambitious annual goals for restoration surface area have been set, and work did not start initially as rapidly as was hoped. Issues associated with the other outputs have been discussed previously (see chapters 2.2-2.4).

Figure 26. Scores for different outputs

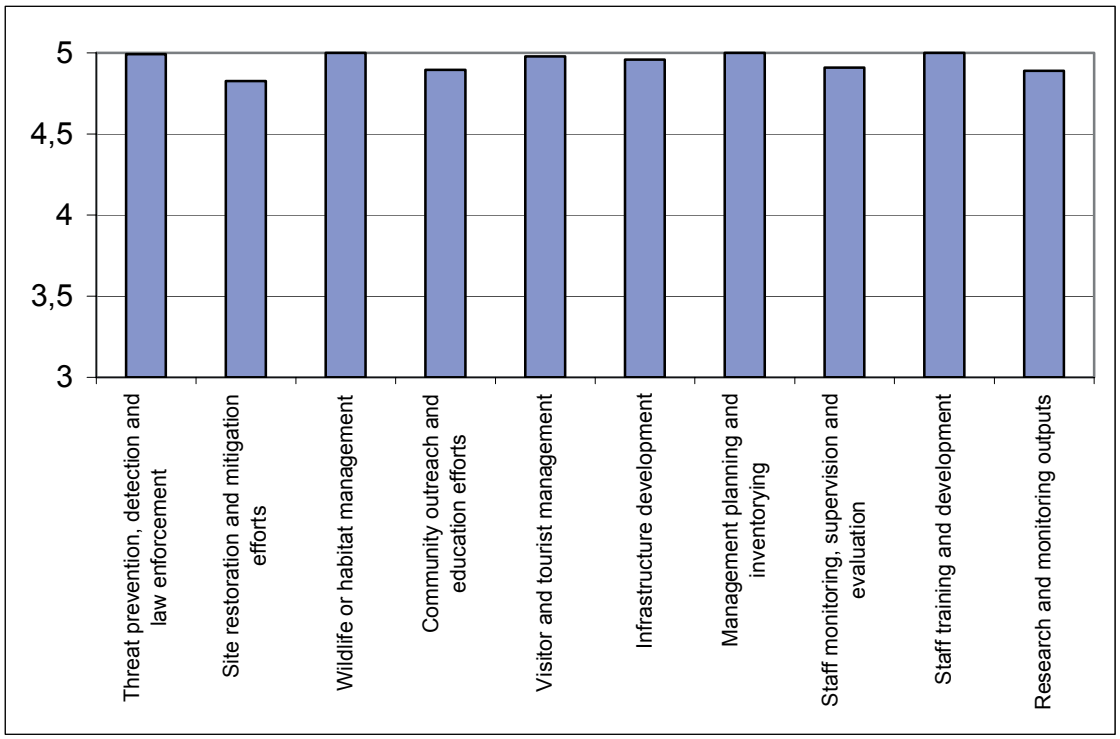
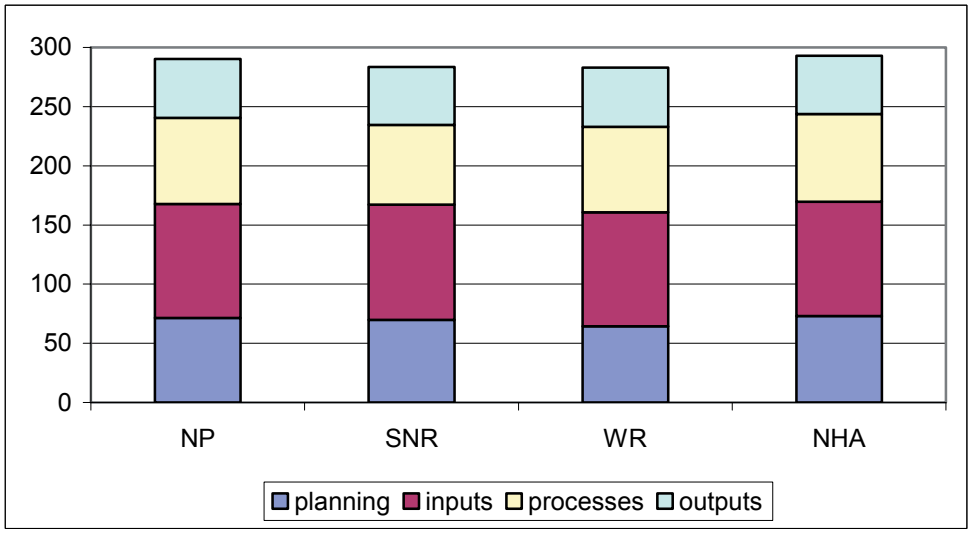


Figure 27 summarizes the overall management effectiveness in different PA types. All the scores of the subcomponents (planning, inputs, processes and outputs) have been added and the maximum total score is 300. There are no big differences between different PA types:

- National hiking areas 292.8
- National parks 290.2
- Strict nature reserves 283.6, and
- Wilderness reserves 282.8.

Figure 27. Overall management effectiveness when all the scores of subcomponents have been added together



National hiking areas have the highest score for planning and the wilderness reserves have the lowest one, due to incompleteness of the management plans (as discussed in chapter 2.4). All the PA types have about the same score from the questions concerning inputs. National hiking areas reached also the best score for management processes while strict nature reserves had the lowest one. In outputs, all the PA types are at the same level.

3 Outcomes and conclusions

Generally speaking the results of the RAPPAM assessment suggest that managers of the Finnish protected areas see the state of the PA system very positively. The ecological representativeness of the network and its capacity to uphold biodiversity is regarded quite satisfactory, except in southern parts of Finland. According to this assessment there is also little cause for real alarm in the management of the Finnish protected areas.

No major threat to the existing values of the PAs was identified in the assessment. Those threats which were identified are mostly either being addressed (such as former forestry, alien species and tourism) or are the kind to which the NHS has little influence (such as grazing, eutrophication, oilspills or climate change).

No marked system-wide weakness or critical knowledge gap came up either. Some attention can be given to the need for research support to management in the southern PAs. This reflects perhaps the results given by site design questions in chapter 2.2 (see fig. 19). PAs in southern Finland are more scattered and often located next to privately owned areas. Thus landscape-level planning is needed in order to preserve biodiversity and the diversity of representative ecosystems in the south of Finland. The Natura 2000 master plans, which are presently being drawn up, as well as the natural resource planning of Metsähallitus are tools to reach these goals. Protected area-level management plans need also to be updated and drawn up comprehensively. On the other hand, inventories needed to support these seem to be well on their way.

Some apprehension concerning stable long-term financial outlook is visible through this assessment. Level of sufficient staffing scores comparatively low. Output scores are nevertheless high throughout.

As expected, on many issues the different PA types systematically score differently. There is also a comparative geographic difference seen on some issues. Thus it is clearly useful to analyse each protected area group separately.

During analysis of the findings it became evident that not all the questions of the RAPPAM assessment were understood quite the same way by all respondents (see chapter 2). Some questions also leave room for personal interpretation. Because of this, we had to make small corrections and adjustments while analysing the data. There were problems especially in understanding the difference between pressures and threats. In the possible future follow ups, threat analysis should be considered more carefully and be guided in more detail. It seems essential that findings are contemplated collectively and when possible, questions gone through in advance.

Even though the assessment was carried out rapidly and somewhat superficially, it was thought to have been a worthwhile exercise as the assessment framework became familiar. It was thought that the framework would be useful for the follow up of PA planning objectives. As time was now very limited the objectives and critical actions of some PAs (question 1, g and h) were recorded poorly and deserve more profound attention. Site-specific annual budgets were now estimated coarsely, because the NHS does not budget each PA separately. Some consideration might be given to whether it would be useful for the most important PAs.

Although comparisons are interesting at a global level, many questions in the RAPPAM questionnaire seemed somewhat inappropriate to the developed western context. Consideration of pressures and threats or vulnerability *per se* are agreed important, but some questions focus on problems that don't exist in northern Europe. If this kind of assessment is to be repeated or extended to other PAs in Finland, there is a need to develop the questions to cover issues which are more relevant to the context in which the PA system is situated. The scale of the scoring for questions could also be extended to increase sensitivity to differences between PAs – in this assessment the picture given by "yes" answers too easily reached was regarded too positive by some managers. Perhaps the questionnaire which has been used in Australia or some other variation of a WCPA framework-based method would be a good reference in developing an appropriate tool. This way the assessment can better address issues of importance at the local level.

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RAPID ASSESSMENT AND PRIORITIZATION OF PROTECTED AREA MANAGEMENT (RAPPAM) METHODOLOGY

RAPID ASSESSMENT QUESTIONNAIRE

1 Fit BACKGROUND INFORMATION

a) Mame of protected area: _____
b) Date established: _____
c) Size of protected area: _____
d) Name off respondent: _____
e) Date survey completed: _____
f) Annual budget: _____
g) Specific management objectives: _____
h) Critical protected area (PA) activities: _____

2 PRESSURES AND THREATS

Pressure:

☐ Has ☐ Has not been a pressure in the last 5 years

In the past 5 years this activity has:

☐ Increased sharply
☐ Increased slightly
☐ Remained constant
☐ Decreased slightly
☐ Decreased sharply

The overall severity of this pressure over the past 5 years has been:

Extent	Impact	Permanence
☐ Throughout (>50)	☐ Severe	☐ Permanent (>100 years)
☐ Widespread (15-50)	☐ High	☐ Long term (20-100 years)
☐ Scattered (5-15)	☐ Moderate	☐ Medium term (5-20 years)
☐ Localized (<5)	☐ Mild	☐ Short term (<5 years)

Threat:

☐ Will ☐ Will not be a threat in the next 5 years

The probability of the threat

☐ Very high
☐ High
☐ Medium
☐ Low
☐ Very low

The overall severity of this threat over the next 5 years is likely to be:

Extent	Impact	Permanence
☐ Throughout (>50)	☐ Severe	☐ Permanent (>100 years)
☐ Widespread (15-50)	☐ High	☐ Long term (20-100 years)
☐ Scattered (5-15)	☐ Moderate	☐ Medium term (5-20 years)
☐ Localized (<5)	☐ Mild	☐ Short term (<5 years)

3 BIOLOGICAL IMPORTANCE

y	m/y	m/n	n		Notes:
				a) The PA contains a relatively high number of rare, threatened, or endangered species.	
				b) The PA has relatively high levels of biodiversity.	
				c) The PA has a relatively high degree of endemism.	
				d) The PA provides a critical landscape function.	
				e) The PA contains the full range of plant and animal diversity.	
				f) The PA significantly contributes to the representativeness of the PA system.	
				g) The PA sustains minimum viable populations of key species.	
				h) The structural diversity of the PA is consistent with historic norms.	
				i) The PA includes ecosystems whose historic range has been greatly diminished.	
				j) The PA maintains the full range of natural processes and disturbance regimes.	

4 SOCIO-ECONOMIC IMPORTANCE

y	m/y	m/n	n		Notes:
				a) The PA is an important source of employment for local communities.	
				b) Local communities depend upon the PA resources for their subsistence.	
				c) The PA provides community development opportunities through sustainable resource use.	
				d) The PA has religious or spiritual significance.	
				e) The PA has unusual features of aesthetic importance.	
				f) The PA contains plant species of high social, cultural, or economic importance.	
				g) The PA contains animal species of high social, cultural, or economic importance.	
				h) The PA has a high recreational value.	
				i) The PA contributes significant ecosystem services and benefits to communities.	
				j) The PA has a high educational and/or scientific value.	

5 VULNERABILITY

y	m/y	m/n	n		Notes:
				a) Illegal activities within the PA are difficult to monitor.	
				b) Law enforcement is low in the region.	
				c) Bribery and corruption is common throughout the region.	
				d) The area is experiencing civil unrest and/or political instability.	
				e) Cultural practices, beliefs, and traditional uses conflict with the PA objectives.	
				f) The market value of the PA resources is high.	
				g) The area is easily accessible for illegal activities.	
				h) There is a strong demand for vulnerable PA resources.	
				i) The PA manager is under pressure to unduly exploit the PA resources.	
				j) Recruitment and retention of employees is difficult.	

6 OBJECTIVES

y	m/y	m/n	n		Notes:
				a) PA objectives provide for the protection and maintenance of biodiversity.	
				b) Specific biodiversity-related objectives are clearly stated in the management plan.	
				c) Management policies and plans are consistent with the PA objectives.	
				d) PA employees and administrators understand the PA objectives and policies.	
				e) Local communities support the overall objectives of the PA.	

7 LEGAL SECURITY

y	m/y	m/n	n		Notes:
				a) The PA has long-term legally binding protection.	
				b) There are no unsettled disputes regarding land tenure or use rights.	
				c) Boundary demarcation is adequate to meet the PA objectives.	
				d) Staff and financial resources are adequate to conduct critical law enforcement activities.	
				e) Conflicts with the local community are resolved fairly and effectively.	

8 SITE DESIGN AND PLANNING

y	m/y	m/n	n		Notes:
				a) The siting of the PA is consistent with the PA objectives.	
				b) The layout and configuration of the PA optimizes the conservation of biodiversity.	
				c) The PA zoning system is adequate to achieve the PA objectives.	
				d) The land use in the surrounding area enables effective PA management.	
				e) The PA is linked to another area of conserved or protected land.	

9 STAFFING

y	m/y	m/n	n		Notes:
				a) The level of staffing is sufficient to effectively manage the area.	
				b) Staff members have adequate skills to conduct critical management activities.	
				c) Training and development opportunities are appropriate to the needs of the staff.	
				d) Staff performance and progress on targets are periodically reviewed.	
				e) Staff employment conditions are sufficient to retain high-quality staff.	

10 COMMUNICATION AND INFORMATION

y	m/y	m/n	n		Notes:
				a) There are adequate means of communication between field and office staff.	
				b) Existing ecological and socio-economic data are adequate for management planning.	
				c) There are adequate means of collecting new data.	
				d) There are adequate systems for processing and analysing data.	
				e) There is effective communication with local communities.	

11 INFRASTRUCTURE

y	m/y	m/n	n		Notes:
				a) Transportation infrastructure is adequate to perform critical management activities.	
				b) Field equipment is adequate to perform critical management activities.	
				c) Staff facilities are adequate to perform critical management activities.	
				d) Maintenance and care of equipment is adequate to ensure long-term use.	
				e) Visitor facilities are appropriate to the level of visitor use.	

12 FINANCES

y	m/y	m/n	n		Notes:
				a) Funding in the past 5 years has been adequate to conduct critical management activities.	
				b) Funding for the next 5 years is adequate to conduct critical management activities.	
				c) Financial management practices enable efficient and effective PA management.	
				d) The allocation of expenditures is appropriate to PA priorities and objectives.	
				e) The long-term financial outlook for the PA is stable.	

13 MANAGEMENT PLANNING

y	m/y	m/n	n		Notes:
				a) There is a comprehensive, relatively recent written management plan.	
				b) There is a comprehensive inventory of natural and cultural resources.	
				c) There is an analysis of, and strategy for addressing, PA threats and pressures.	
				d) A detailed work plan identifies specific targets for achieving management objectives.	
				e) The results of research and monitoring are routinely incorporated into planning.	

14 MANAGEMENT DECISION MAKING

y	m/y	m/n	n		Notes:
				a) There is clear internal organization.	
				b) Management decision making is transparent.	
				c) PA staff regularly collaborate with partners, local communities, and other organizations.	
				d) Local communities participate in decisions that affect them.	
				e) There is effective communication between all levels of PA staff and administration.	

15 RESEARCH, EVALUATION, AND MONITORING

y	m/y	m/n	n		Notes:
				a) The impact of legal and illegal uses of the PA are accurately monitored and recorded.	
				b) Research on key ecological issues is consistent with the needs of the PA.	
				c) Research on key social issues is consistent with the needs of the PA.	
				d) PA staff members have regular access to recent scientific research and advice.	
				e) Critical research and monitoring needs are identified and prioritized.	

16 OUTPUTS

In the last 2 years, the following outputs have been consistent with the threats and pressures, PA objectives, and annual workplan:

y	m/y	m/n	n		Notes:
				a) Threat prevention, detection and law enforcement.	
				b) Site restoration and mitigation efforts.	
				c) Wildlife or habitat management.	
				d) Community outreach and education efforts.	
				e) Visitor and tourist management.	
				f) Infrastructure development.	
				g) Management planning and inventorying.	
				h) Staff monitoring, supervision, and evaluation.	
				i) Staff training and development.	
				j) Research and monitoring outputs.	

17 PROTECTED AREA SYSTEM-LEVEL DESIGN

y	m/y	m/n	n		
				a) The PA system adequately represents the full diversity of ecosystems within the region.	Notes:
				b) The PA system adequately protects against the extinction or extirpation of any species.	
				c) The PA system consists primarily of exemplary and intact ecosystems.	
				d) Sites of high conservation value for key species are systematically protected.	
				e) The PA system maintains natural processes at a landscape level.	
				f) The PA system includes the protection of transition areas between ecosystems.	
				g) The PA system includes the full range of successional diversity.	
				h) Sites of high biodiversity are systematically protected.	
				i) Sites of high endemism are systematically protected.	
				j) The layout and configuration of the PA system optimizes the conservation of biodiversity.	

18 PROTECTED AREA POLICIES

y	m/y	m/n	n		
				a) National PA policies clearly articulate a vision, goals, and objectives for the PA system.	Notes:
				b) The area of land protected is adequate to maintain natural processes at a landscape level.	
				c) There is a demonstrated commitment to protecting a viable and representative PA network.	
				d) There is a comprehensive inventory of the biological diversity throughout the region.	
				e) There is an assessment of the historical range of variability of ecosystem types in the region.	
				f) There are restoration targets for under-represented and/or greatly diminished ecosystems.	
				g) There is ongoing research on critical PA-related issues.	
				h) The PA system is periodically reviewed for gaps and weaknesses (e.g. gap analyses).	
				i) There is an effective training and capacity-building programme for PA staff.	
				j) PA management, including management effectiveness, is routinely evaluated.	

19 POLICY ENVIRONMENT

y	m/y	m/n	n		
				a) PA-related laws complement PA objectives and promote management effectiveness.	Notes:
				b) There is sufficient commitment and funding to effectively administer the PA system.	
				c) Environmental protection goals are incorporated into all aspects of policy development.	
				d) There is a high degree of communication between natural resource departments.	
				e) There is effective enforcement of PA-related laws and ordinances at all levels.	
				f) National policies promote widespread environmental education at all levels.	
				g) National policies promote sustainable land management.	
				h) National policies promote an array of land conservation mechanisms.	
				i) There is adequate environmental training for governmental employees at all levels.	
				j) National policies foster dialogue and participation with civic and environmental NGOs.	

THREATS AND PRESSURES IN NATIONAL PARKS

South		pressure	threat	extent	impact	permanence	degree
helvetinjärvi	former forestry	3		3	2	3	**18**
	grazing	3		2	2	2	**8**
	invasive alien species	3		2	2	2	**8**
isojärvi	former forestry	2		3	2	3	**18**
	grazing	3		2	2	2	**8**
eastern gulf of finland	invasive alien species		3	1	2	1	**2**
	waste disposal /oil		4	3	3	3	**27**
	waste disposal /oil	4		3	3	3	**27**
kauhaneva-pohjankangas	former forestry	2		2	1	2	**4**
kolovesi	-						
kurjenrahka	-						
lauhanvuori	-						
leivonmäki	former forestry	2		3	2	3	**18**
	grazing	3		2	2	2	**8**
liesjärvi	invasive alien species		2	1	1	1	**1**
linnansaari	-						
nuuksio	invasive alien species		2	1	1	1	**1**
	tourism and recreation	3		2	2	1	**4**
	tourism and recreation		2	2	2	1	**4**
patvinsuo	-						
pyhä-häkki	-						
päijänne	-						
repovesi	tourism and recreation	4		2	2	2	**8**
archipelago sea	eutrofication	4		4	3	3	**36**
	eutrofication		3	4	3	3	**36**
	waste disposal /oil		3	3	4	2	**24**
	invasive alien species	2		4	3	4	**48**
salamajärvi	-						
seitseminen	former forestry	2		3	2	2	**12**
	grazing	3		3	1	2	**6**
	invasive alien species	3		3	1	2	**6**
ekenäs	waste disposal /oil		4	1	2	3	**6**
	invasive alien species		1	1	1	1	**1**
tiilikkajärvi	-						
torronsuo	-						
valkmusa	-						

Ostrobothnia-Kainuu							
hiidenportti	tourism and recreation	3		1	1	1	**1**
	tourism and recreation		1	1	1	1	**1**
oulanka	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	3		3	1	3	**9**
	grazing		2	3	1	2	**6**
	invasive alien species	4		1	1	1	**1**
	invasive alien species		2	1	1	1	**1**
perämeri	waste disposal /oil		1	4	3	2	**24**
	climate change and sea level height		1	4	4	4	**64**
	overgrowing of national landscapes	4		2	2	2	**8**
	overgrowing of national landscapes		4	2	2	2	**8**
petkeljärvi	tourism and recreation	3		1	1	3	**3**
	tourism and recreation		2	1	1	2	**2**
puurijärvi-isosuo	overgrowing of lake puurijärvi	4		3	2	4	**24**
	overgrowing of lake puurijärvi		3	3	2	4	**24**
riisitunturi	grazing	3		2	1	2	**4**
	grazing		2	2	1	2	**4**
rokua	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		3	1	2	2	**4**
	decrease in esker-releted species due	3		4	2	3	**24**
	decrease in esker-releted species due		3	4	2	3	**24**
syöte	tourism and recreation		2	1	1	2	**2**
	grazing	3		2	1	2	**4**
	grazing		2	2	1	2	**4**
	mining		3	1	2	2	**4**

North							
lemmenjoki	tourism and recreation	3		1	2	3	**6**
	tourism and recreation		3	1	2	3	**6**
	grazing	2		4	2	3	**24**
	grazing		3	4	2	3	**24**
	mining	4		1	4	3	**12**
	mining		4	1	4	3	**12**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
pallas-ounastunturi	tourism and recreation	4		1	3	3	**9**
	tourism and recreation		4	1	3	3	**9**
	grazing	3		4	2	3	**24**
	grazing		3	4	2	3	**24**
	herding with motor vehicles	3		1	2	3	**6**
	herding with motor vehicles		3	1	2	3	**6**
pyhätunturi	tourism and recreation	4		3	1	2	**6**
	tourism and recreation		3	3	1	2	**6**
	conversion of land use (downhill		2	1	1	3	**3**
	grazing	3		4	1	2	**8**
ukk	tourism and recreation	4		2	2	2	**8**
	tourism and recreation		3	2	2	2	**8**
	conversion of land use (downhill		2	1	1	3	**3**
	fishing	4		2	1	2	**4**
	fishing		2	1	1	2	**2**
	legal firewood logging	2		1	1	3	**3**
	grazing	2		4	1	2	**8**

THREATS AND PRESSURES IN NATIONAL HIKING AREAS

South		pressure	threat	extent	impact	permanence	degree
evo	-						
ruunaa	logging	2		2	1	3	**6**
	logging		2	1	1	2	**2**
	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
teijo	logging	3		2	1	4	**8**
	logging		3	3	3	4	**36**

Ostrobothnia-Kainuu							
hossa	tourism and recreation	3		2	1	2	**4**
	tourism and recreation		2	2	1	1	**2**
	grazing	3		2	1	2	**4**
	grazing		2	2	1	2	**4**
iso-syöte	tourism and recreation	3		2	1	2	**4**
	tourism and recreation		2	2	1	2	**4**
	grazing	3		2	1	2	**4**
	grazing		2	2	1	3	**6**
kylmäluoma	tourism and recreation	3		2	1	2	**4**
	tourism and recreation		2	2	1	2	**4**
	grazing	3		3	1	3	**9**
	grazing		3	3	1	3	**9**
oulujärvi	tourism and recreation	3		2	1	2	**4**
	tourism and recreation		2	2	1	2	**4**

THREATS AND PRESSURES IN STRICT NATURE RESERVES

South		pressure	threat	extent	impact	permanence	degree
häädetkeidas	-						
karkali	invasive alien species		2	1	1	1	**1**
koivusuo	-						
salamanperä	-						
sinivuori	-						
vaskijärvi	-						
Ostrobothnia-Kainuu							
olvassuo	grazing	3		2	2	2	**8**
	grazing		4	2	2	2	**8**
	tourism and recreation	4		1	1	1	**1**
	tourism and recreation		3	1	1	1	**1**
	mining (groudwater)		3	2	3	3	**18**
paljakka	grazing	3		2	1	2	**4**
	grazing		3	2	1	2	**4**
pelso	-						
sukerijärvi	grazing	3		2	1	2	**4**
	grazing		2	2	1	2	**4**
ulvinsalo	-						
North							
kevo	tourism and recreation	3		1	1	3	**3**
	tourism and recreation		3	1	1	3	**3**
	grazing	2		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
maltio	hunting (poaching) & fishing	2		2	1	1	**2**
	invasive alien species		5	2	1	1	**2**
	grazing	3		4	1	2	**8**
pisavaara	grazing	3		4	1	3	**12**
	invasive alien species	3		4	1	2	**8**
runkaus	grazing	3		4	1	3	**12**
	invasive alien species	3		4	1	2	**8**
sompio	grazing	3		4	1	2	**8**
värriö	hunting (poaching) & fishing	2		2	1	1	**2**
	invasive alien species		5	2	1	1	**2**
	grazing	3		4	1	2	**8**

THREATS AND PRESSURES IN WILDERNESS RESERVES

North		pressure	threat	extent	impact	permanence	degree
hammastunturi	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	3		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
kaldoaivi	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	2		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
kemihaara	tourism and recreation	4		2	1	2	**4**
	tourism and recreation		3	2	1	2	**4**
	invasive alien species		5	1	1	2	**2**
	grazing	3		4	1	2	**8**
	hunting (poaching) & fishing	3		3	1	1	**3**
käsivarsi	tourism and recreation	4		1	2	3	**6**
	tourism and recreation		3	1	2	3	**6**
	grazing	2		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**

muotkatunturi	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	3		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
paistunturi	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	2		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
pulju	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	2		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
pöyrisjärvi	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	2		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
tarvantovaara	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	2		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
tsarmitunturi	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	3		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**
tuntsa	tourism and recreation	4		2	1	2	**4**
	tourism and recreation		3	2	1	2	**4**
	invasive alien species		5	1	1	2	**2**
	grazing	3		4	1	2	**8**
	hunting (poaching) & fishing	3		3	1	1	**3**
vätsäri	tourism and recreation	3		1	1	2	**2**
	tourism and recreation		2	1	1	2	**2**
	grazing	3		4	2	3	**24**
	grazing		3	4	2	3	**24**
	hunting (poaching)	3		1	1	2	**2**
	hunting (poaching)		3	1	1	2	**2**

SUMMARY

south	NP				SNR				NHA				ALL PAs of south					
	pressure		threat		pressure		threat		pressure		threat		both		pressure		threat	
	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount
former forestry	70	5											70	5	70	5	0	0
grazing	30	4											30	4	30	4	0	0
invasive alien species	62	3	5	4			1	1					68	8	62	3	6	5
waste disposal and oil spills	27	1	57	3									84	4	27	1	57	3
tourism and recreation	12	2	4	1					2	1	2	1	20	5	14	3	6	2
eutrofication	36	1	36	1									72	2	36	1	36	1
logging									14	2	38	2	52	4	14	2	38	2

ostrobothnia-kainuu	NP				SNR				NHA				ALL PAs of ostrobothnia-kainuu					
	pressure		threat		pressure		threat		pressure		threat		both		pressure		threat	
	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount
grazing	17	3	14	3	16	3	16	3	17	3	19	3	99	18	50	9	49	9
invasive alien species	1	1	1	1									2	2	1	1	1	1
waste disposal and oil spills			24	1									24	1	0	0	24	1
tourism and recreation	8	4	11	5	1	1	1	1	16	4	14	4	51	19	25	9	26	10
mining			4	1			18	1					22	2	0	0	22	2
climate change			64	1									64	1	0	0	64	1
overgrowing	32	2	32	2									64	4	32	2	32	2
decrease in esker-related species	24	1	24	1									48	2	24	1	24	1

north	NP				SNR				WR				ALL PAs of north					
	pressure		threat		pressure		threat		pressure		threat		both		pressure		threat	
	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount	degree	amount
grazing	64	4	48	2	60	5	24	1	256	12	240	10	692	34	380	21	312	13
invasive alien species					16	2	4	2			4	2	24	6	16	2	8	4
tourism and recreation	29	4	29	4	3	1	3	1	32	12	32	12	128	34	64	17	64	17
mining	12	1	12	1									24	2	12	1	12	1
logging	3	1											3	1	3	1	0	0
hunting, poaching, fishing	6	2	4	2	6	3	2	1	26	12	20	10	64	30	38	17	26	13
herding with motor vehicles	6	1	6	1									12	2	6	1	6	1
conversion of land use			6	2									6	2	0	0	6	2