



BIODIVERSITY IN FINNISH FORESTS

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MINISTRY OF AGRICULTURE AND FORESTRY AND MINISTRY OF THE ENVIRONMENT**

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MINISTRY OF AGRICULTURE AND FORESTRY



**YMPÄRISTÖMINISTERIÖ
MILJÖMINISTERIET
MINISTRY OF THE ENVIRONMENT**

FRONT AND BACK COVER:
Biodiversity of a commercially exploited forest. North Carelia.

INNER FRONT COVER:
A naturally regenerated, 60-year-old birch stand on a slash-and-burn area.
(Erkki Oksanen)

FRONT FOLD:
Autumn russet – temporal biodiversity of the forests.

INNER BACK COVER:
The peace of a winter-clad forest.
(Hannu Viitanen)

BACK FOLD:
Feathery snow falling from a tree.
(Jouni Klinga)



BIODIVERSITY IN FINNISH FORESTS

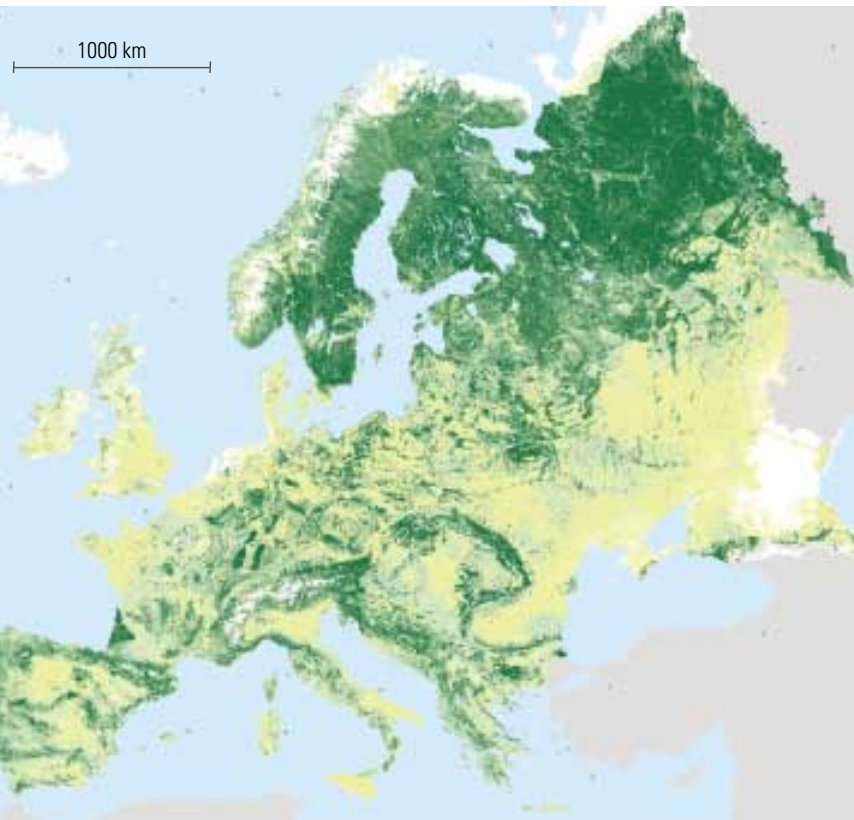
Since the 1990s, maintaining and protecting the biodiversity of forests has been an integral part of sustainable forest management. Today, biodiversity is taken into account in a number of ways in the management of our forests. The strictly protected forest area in Finland is almost four times the Euro-

pean average. Most of the present conservation areas are located in the sparsely populated regions of eastern and northern Finland. Recently, the Finnish Government also launched a specific forest biodiversity programme to protect forest biodiversity in southern Finland.

THE FORESTS OF EUROPE

SOURCE: EUROPEAN FOREST INSTITUTE

Proportion of forest out of the total land area (% at 1x1 km resolution)



THE MOST HIGHLY FORESTED COUNTRY IN EUROPE

Finland is the most highly forested country in Europe: forests cover 72 per cent of the land area. The total forest area is 22 million hectares, making it the largest in Europe after Sweden, which has 27 million hectares. Other countries with substantial forest resources are France (15 mill. ha), Spain (14 mill. ha) and Germany (11 mill. ha).

The forests in Central Europe are more densely stocked and grow faster than the coniferous forests in the north. In terms of growing stock and increment, the most important forestry countries in Europe are France, Germany, Sweden and Finland.

The impact of forests on the national economy and the whole of society has been the greatest in Finland. The development of Finland from a relatively undeveloped, agrarian society into a prosperous, post-industrial country has largely been based on forestry and the forest industry. In the 1950s, the forest industry accounted for as much as 80 per cent of the Finnish export income. Today, about one quarter of Finland's export income still comes from the forest sector, especially from high-tech paper products.



UPM/KRUMHOLTZ

The Finnish forest industry is highly competitive. It has grown rapidly to become an increasingly globalised sector. Many of the Finnish forest industry companies operating on the global market are now among the leading companies in the world. More than half of their production is located outside Finland, especially in Central Europe. International environmental norms are strictly complied with in all their operations.

FAMILY FORESTRY HAS CREATED WIDESPREAD PROSPERITY

In Finland, as is generally the case elsewhere in Europe, about two-thirds of the forests are family owned. As a result of the land ownership history, the holdings are small, averaging about 30 ha. Forestry activities, such as fellings and silvicultural measures, are applied in small forest lots, averaging 1-2 ha in size.

The forests have provided employment, income and wood for many generations. Income from wood sales and the employment opportunities provided by the forests are still important for about 400,000 families and the whole rural community. Forestry and the forest industry provide work for thousands of business enterprises and tens of thousands of employees.

Unlike the case in many other countries, Finnish forestry is a profitable industry. As a result, the private forest owners have traditionally shown great interest in the sustainable management and utilisation of their forests. The Government of Finland has been active in supporting and guiding private forestry. Since the 1950s, the forested area has increased, and the annual increment has risen from 55 million to 80 million cubic metres. The growing stock is nowadays greater than it has ever been, allowing increased utilisation of wood for industrial purposes.

The diverse values of nature have become increasingly important in recent decades, and they are now taken into account in all forest-related



01 SISU AUTO AB

Forests dominate the Finnish landscape. The livelihood of tens of thousands of Finns depends on forestry.

activities. The deeply-rooted respect for the cultural, recreational and environmental values of the forests is an integral element in Finnish family forestry. Everybody has free access to all the forests, including privately owned ones, to enjoy outdoor recreational activities or, for example, to pick wild berries and edible mushrooms.

BIODIVERSITY IS AN INTEGRAL PART OF FINLAND'S NATIONAL FOREST PROGRAMME

Finnish forest policy is guided by the National Forest Programme, which extends up until the year 2010. All the relevant interest groups, including the national environmental organisations and NGOs, have been involved in the preparation and implementation of the programme. The objective is a balanced whole, in which all the economic, social and ecological aspects of sustainability have been taken into account.

The most important economic objectives of the programme are to increase the annual cut to 63-68 million cubic metres, double the value added of the wood processing industry, and increase the use of wood for energy to 5 million cubic metres a year. When the forests are regenerated and managed in accordance with the programme, the volume and growth of the forests will continue to increase in the coming decades.

The main objectives of social sustainability are related to the positive impacts of the programme on employment and living conditions in rural areas, and the maintenance of our long traditions in forest use: hunting, reindeer husbandry, public right of access, outdoor activities and landscape management.

Ecological sustainability aims at attaining a favourable conservation status for forest species and habitats through a combination of conservation areas and appropriate management of commercial forests. This objective is fully in line with the Convention on Biological Diversity,

JOONI KUINGA



A well-earned rest after a successful day's hunting.

ERIKI OLSANEN



All Finnish forests are freely accessible for outdoor activities. You can also pick wild berries and mushrooms.

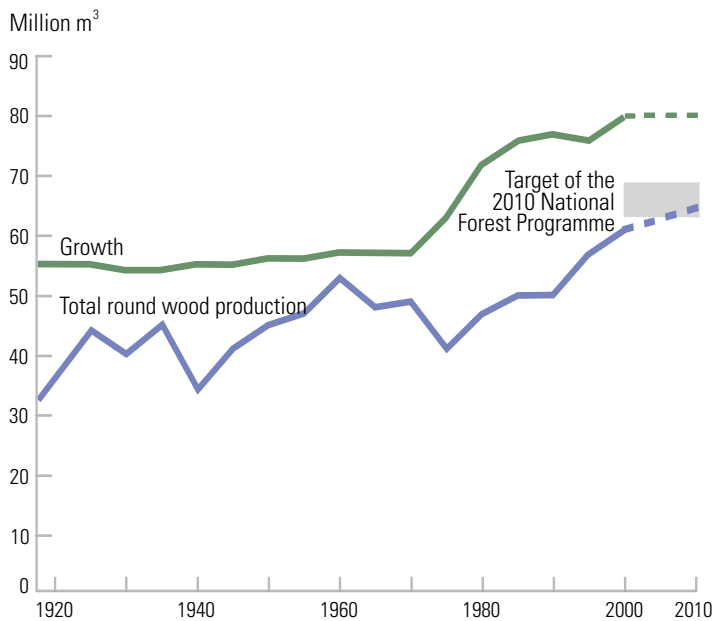
which Finland has also ratified. The means available for implementing ecological sustainability include the establishment of national parks and other conservation areas, the Natura 2000 network, the Old-growth Forests Conservation Programme, and the recently enacted Forest Biodiversity Programme for Southern Finland. New means have been developed for nature and wildlife management in all forms of forest.

THE BIODIVERSITY ACTION PROGRAMME HAS A WIDE RANGE OF INSTRUMENTS

The 1997-2005 Finnish Biodiversity Action Programme contains a total of 124 instruments for ensuring the preservation of forest biodiversity. The implementation of the programme is monitored by a follow-up group from the Ministry of the Environment and expert working groups composed of representatives from a number of ministries, interest groups and NGOs.

GROWTH AND LOGGING OF FINNISH FORESTS SINCE THE 1920s

SOURCE: FINNISH FOREST RESEARCH INSTITUTE



Even in commercial forests, the Finnish Forest Act prohibits felling along brooks.



Mechanical harvesting is an integral part of cost-effective forestry.



Naturally regenerated pine stand.

The main principle has been to increase the number of conservation areas and to maintain biodiversity in all forests. The measures include the survey of key habitats, research and training in forest biodiversity, and cooperation between the forest and environmental authorities. The main issue is how well the conservation areas and other types of forest can, together, ensure the preservation of habitats, structural features characteristic to forests, and forest species.

CONSERVATION AREAS COVER ABOUT 10 PER CENT OF FINLAND

The conservation areas on state-owned land is 1.4 million hectares. In addition to this, 1.4 million hectares of wilderness area has been established in northernmost Lapland, which is characterised by mountain areas and timberline forests. These conserved areas total to 2.8 million hectares, which is about 10 per cent of the land area of Finland. It is almost the same as the area of Belgium (3 mill. ha).

Conservation areas are kept in as natural a state as possible, and most of them are freely accessible for outdoor recreation, nature enthusiasts, hiking and camping.

According to an international evaluation, the basic conservation area network in Finland is good, but it suffers from regional imbalance. In Northern Finland the conservation areas represent 18 per cent of the land area while in the south, where most of the population centres and forestry are located, the proportion of conservation areas is about 1 per cent.

The forest area in strictly protected areas is 0.7 million hectares, which is 3.6 per cent of Finland's forest area. In Europe, the strictly protected forests represent, on the average, 1 per cent of the forest area, which means that the area of protected forests in Finland is almost four times the European average.

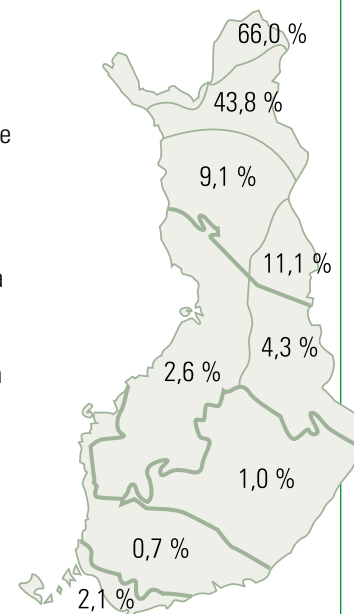


The Kitkajoki river valley in Oulanka National Park.

STRICTLY PROTECTED FORESTS IN THE DIFFERENT VEGETATION ZONES

SOURCE: FINNISH FOREST RESEARCH INSTITUTE, FINNISH ENVIRONMENT INSTITUTE

The EU Member States are currently constructing the Natura conservation network in accordance with the Nature Conservation Directive. Finland's proposal for Natura 2000 areas corresponds to 12 per cent of the total area of the country, and includes 78,000 hectares of new conservation areas in boreal forests.



THE MOST VALUABLE OLD-GROWTH FORESTS ARE PROTECTED

During the 1980s and 1990s Finland drew up a large number of national nature conservation programmes, which are to be implemented by the year 2007. Conservation on state-owned land is based on administrative decisions. Altogether 600 million euros will be used for purchasing private land and for compensating land owners.

The programme for the conservation of old-growth forests was drawn up during 1991-1996. The criteria for old-growth forests were established on the basis of ecological factors, which take into account the age of the stand, amount of decayed wood, time during which no felling has been carried out, size of the area and their location in different vegetation zones.

A field survey was carried out on almost one million hectares of potential old-growth forest, which were then ranked according to ecologi-

cal criteria. The government decided, on the basis of the proposal made by a working group composed of representatives from various interest groups, to protect 345,000 hectares of the most valuable forests.

Metsähallitus, which is the organization responsible for managing state forests, decided to protect an additional 35,000 hectares of less valuable sites, i.e. areas which were too small or scattered to set up a separate conservation area. During 1997-2001, another 129,000 hectares of valuable forest and ecological corridors were included as a part of its regional planning programme.

In an international evaluation, Metsähallitus was considered to be a forerunner in the development and implementation of the new regional ecology planning method. In the winter of 2003 the domestic environmental organisations, the Finnish Nature and Conservation Union and WWF, started to cooperate with Metsähallitus in developing the conservation of forests in Northern Finland within the context of the regional ecology planning programme. This was based on the view that there was no need for a separate conservation programme for the northern parts of the country.

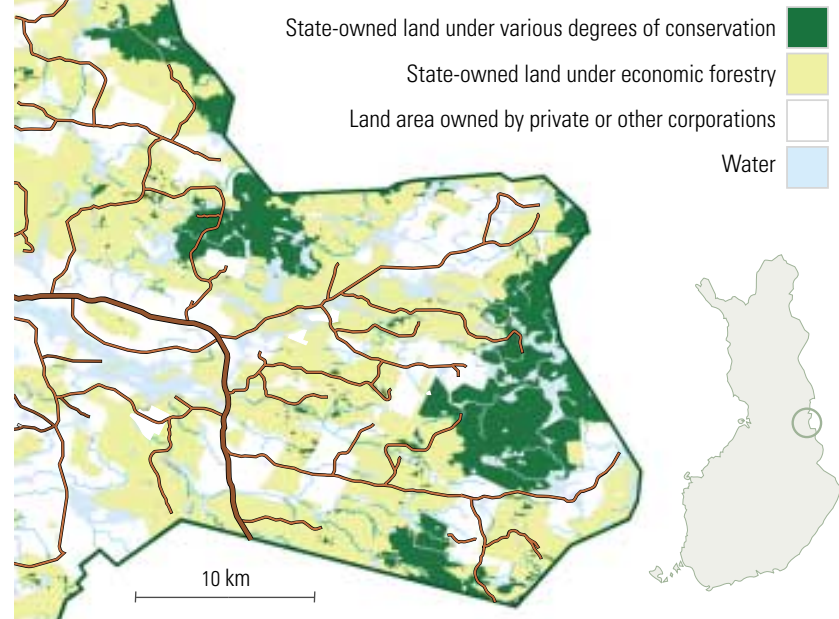
EMPHASIS ON ENDANGERED FOREST SPECIES IN SOUTHERN FINLAND

Since the 1980s three comprehensive surveys have been carried out on threatened species in Finland. The last one was completed in 2000, and was based on the criteria of the World Conservation Union IUCN. The survey covered more than 15,000 of the 43,000 known species in Finland. The only other country that has carried out such an extensive survey is Sweden.

The number of species classified as threatened was 1,505, of which 43 per cent live primarily in forests. The proportion of forest species is

MOSAIC OF COMMERCIAL FORESTS AND CONSERVATION AREAS IN KAINUU

SOURCE: NATIONAL LAND SURVEY OF FINLAND, METSÄHALLITUS, FINNISH ENVIRONMENT INSTITUTE



Hikers taking a break. Grilling salmon over an open fire.



Spruce stand in the Pallas-Ounastunturi National Park.

obviously high because most of Finland is covered with forest. There are still bears and wolves in Finland. The wolf is threatened and the bear nearly threatened. Both populations are on the increase, partly as a result of an influx of these animals from Russia.

Forest species in Southern Finland are especially threatened for a number of reasons. The number of herb-rich forests has decreased as a result of clearance for farming land, which has continued over the centuries. Many broadleaved tree species are at the limit of their distribution range. Woodland pastures have almost completely disappeared because forest grazing is nowadays an extremely rare practice. Forest management has reduced the amount of decaying wood and the number of broadleaved trees, especially aspen. The forests are now younger than before, and forest fires, which are a part of the natural cycle of boreal forests, are nowadays rapidly brought under control.

KEY HABITATS

The means available to forestry can also be used for improving the living conditions of threatened species. In this purpose the Forest Act from the year 1997 defines so-called key habitats where forestry activities are limited.

Additionally in forestry, forest biodiversity is favoured by encouraging prescribed burning, mixed forests and aspen, and leaving green tree retention and decaying wood in the forests.

NEW PROTECTION INSTRUMENTS IN THE FOREST BIODIVERSITY PROGRAMME

The Finnish Government approved the Forest Biodiversity Programme for Southern Finland in October 2002. The programme was drawn up in close cooperation between all the interested parties. The funds allocated for the programme during 2003-2007 total 61.7 million euros.

Because most of the forests in Southern Finland are privately owned, the programme is based on encouraging forest owners to carry out protection measures, and it also provides new means for this purpose. For example, a forest owner who participates in so-called “nature value trading” can receive compensation for 10-20 years for protecting a forest area containing old or decaying trees that are suitable for cavity-nesting birds and other species.

The programme aims at developing wildlife management in forests, increasing the training and advisory services provided for forest owners and promoting the study of forest biodiversity. The resources available for the management and restoration of conservation areas will be increased considerably.

The programme is being implemented in the form of cooperation between the governmental ministries, forest owners, and other parties and organisations involved in the forest sector. The results will be evaluated in 2007.

FOREST REGENERATION METHODS

Finnish forestry is based on the the main indigenous tree species in our boreal forests, Scots pine, Norway spruce and birch, which reach maturity in 60-120 years. During the rotation period the stands are subjected to 1-3 thinnings and, when the stand has reached maturity, it is regenerated by clear cutting or seed tree felling. Natural regeneration by seeding is used whenever possible (in practice in about one third of the forests).

Clear cutting is used in about two-thirds of the regeneration fellings, the stand then being regenerated by planting or seeding. Clear cutting is common in Finland because two of our most common tree species, pine and birch, are so-called pioneer species, which regenerate the best on open land where there is abundant light. The clear cutting areas are

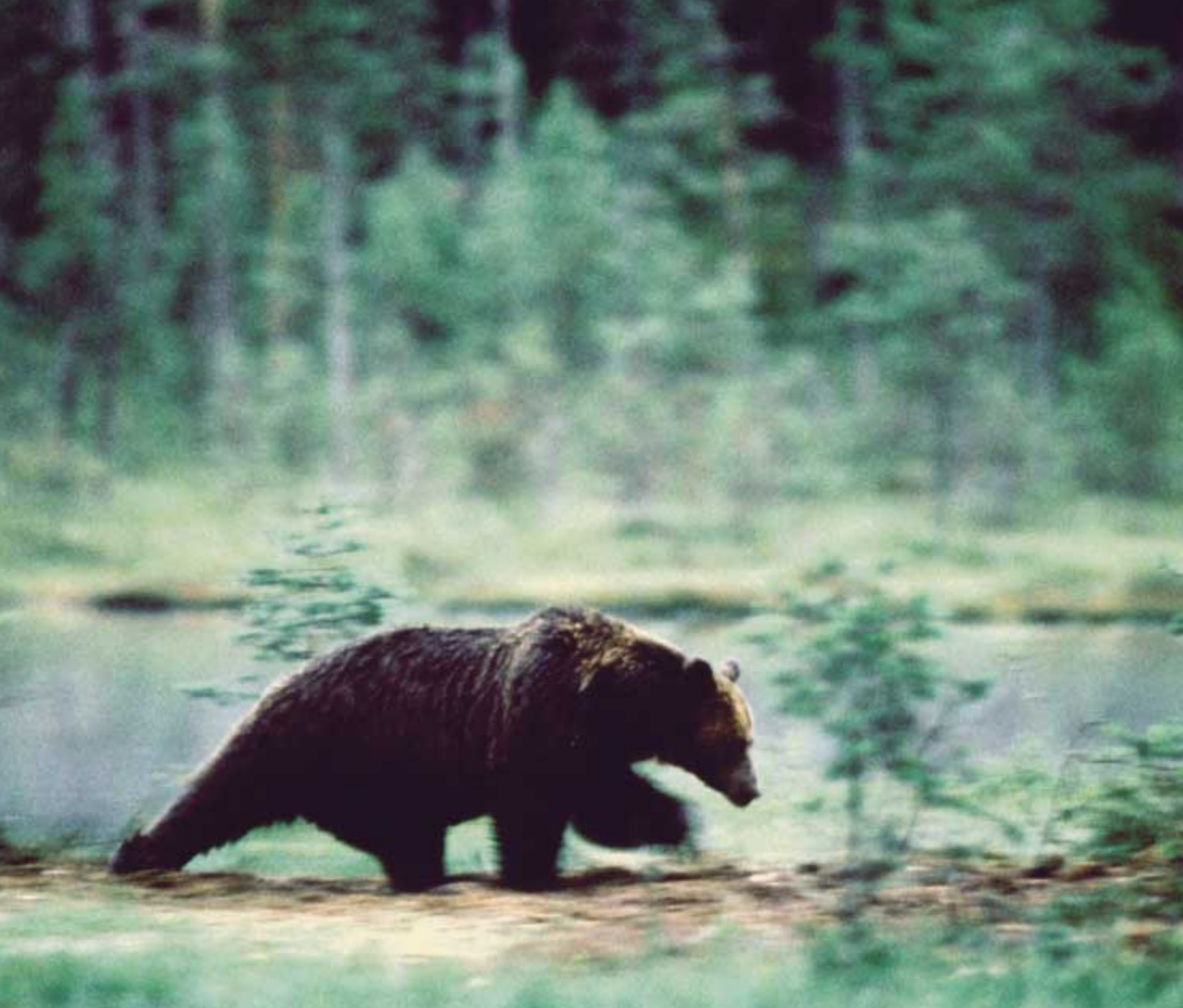
MATTI LAINEN/STAMBERGSKUIS



JARI KOSTET



Forests belong to the Finnish identity from the very beginning.



The Bear population has increased during the last decades.



LARGE PHOTO: JARMO MANNINEN, SMALL PHOTOS FROM TOP: 1. HARRI PULLI, 2. and 3. JOUKKI KUNGA



Golden eagle, Southern Dunlin and Lady's-slipper - threatened species in Finland.

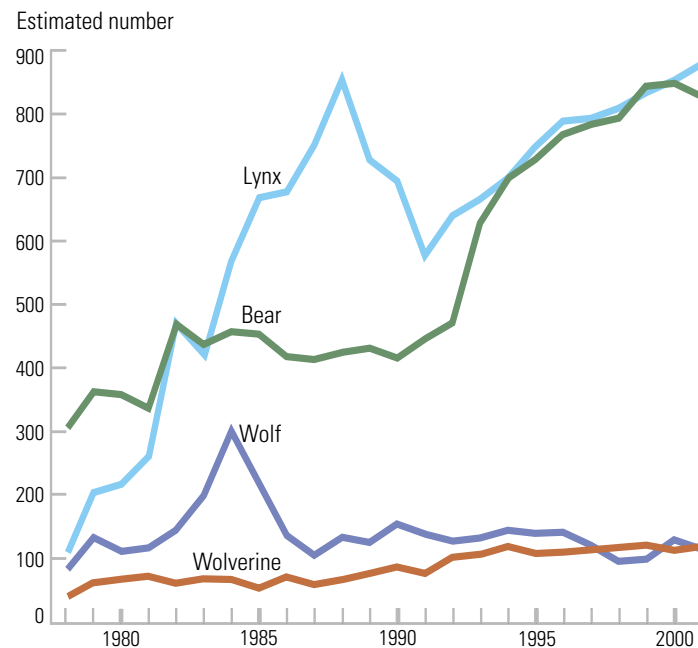
usually very small, between one and two hectares, and shelterwood trees are left to maintain the landscape and biodiversity. Seedlings of indigenous tree species are used in planting almost without exception.

THE NATURE VALUES OF THE FORESTS

The backbone of forestry is profitability. Good profitability also ensures that biodiversity and other nature values can be looked after. The economic forests in Finland include 1.1 million hectares (5 per cent) where timber production is restricted as a result of important nature values, landscape considerations or recreational use. Although most of the restrictions are prescribed by law, the forest owners are also protecting these nature values on a voluntary basis. In certain cases, the forest owner may also be entitled to compensation for economic losses.

DEVELOPMENT OF LARGE PREDATOR POPULATIONS IN FINLAND DURING 1978 - 2001

SOURCE: FINNISH GAME AND FISHERIES RESEARCH INSTITUTE

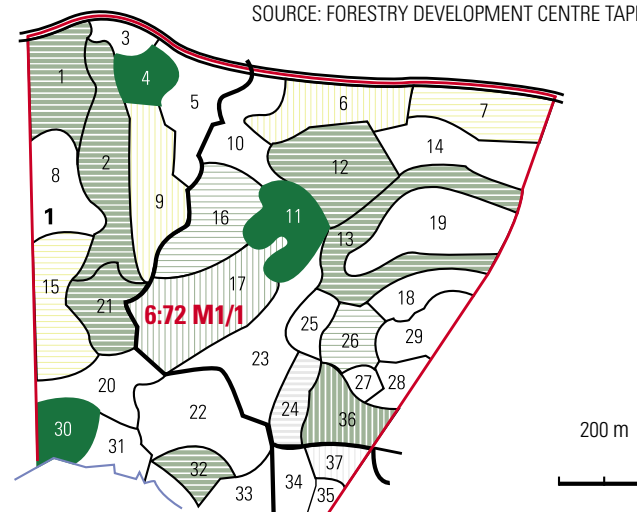




Decaying trees are important for maintaining forest biodiversity. Forest management aims at increasing the amount of decaying wood in forests.

EXAMPLE OF THE STAND MAP OF A FOREST MANAGEMENT PLAN

SOURCE: FORESTRY DEVELOPMENT CENTRE TAPIO



Conservation measures in the forests are supported through the advisory services, forest planning and forest certification. Every second Finnish forest owner has a forest management plan based on a field survey of his forest and important nature sites. The forest owners are encouraged to preserve the essential features of sites with a specific nature value.

95 per cent of the Finnish forests have been certified under the Finnish Forest Certification System. Certification means that the forest owners are committed to protecting valuable nature sites, monitoring the state of nature management in their forests, training professional foresters and forest workers, and retaining trees which are important for biodiversity, including decayed trees, during harvesting. The certification criteria are revised every five years and independent inspectors ensure that the criteria for certification are met. The system is part of the PEFC, and Finnish companies can use the brand in their marketing, if they so wish.



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Luze Oy / Tiina Salminen

EDITOR:
Ahti Kotisaari

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