METSÄHALLITUS
FORSTSTYRELSEN
MEAHCIRÁÐÐEHUS

Environmental Guidelines in Finnish State Forests

PHOTO: AINO JYLHÄNLEHTO

Forestry in Finland: A Basic Overview

Forestry plays a significant role in Finland's economy and culture. It involves the sustainable management and utilization of forests, which cover approximately 75% of Finland's land area. Finland's forests, like those of other Western European countries, are mainly (60%) owned by private individuals and families. The Finnish state owns approximately one third of the forests which are primarily located in Northern and Eastern Finland. Some 15% are jointly owned or owned by companies or estates.

Internationally, Finland's forest resources are well-known and highly regarded. The National Forest Inventory (NFI) carried out by Natural Resources Institute Finland has been providing reliable forest resource data since the 1920s. The results of the NFI are used to guide forest policy work at national and regional levels and utilised also in international reporting.

The Finnish Forest Centre 1) advises forest owners on the management, use, and protection of forests 2) collects forest resource data to guide forest management at forest stand level, and 3) monitors compliance with forest legislation. Certain aspects of the data are openly accessible to everyone.

Metsähallitus, Vantaa 2024

Table of Contents

PHOTO: MIKKO TÖRMÄNEN

Metsähallitus Forestry Ltd

Metsähallitus is a state-owned enterprise founded in 1859. It is responsible for managing state-owned land and water areas, including Finland's extensive network of national parks and wilderness areas. These protected areas contribute to the conservation of biodiversity and offer opportunities for outdoor recreation and nature tourism.

Metsähallitus' subsidiary, Metsähallitus Forestry Ltd, carries out sustainable forestry activities in state-owned forests. It collaborates with various stakeholders, including forest industry companies, local communities, and environmental organizations, to ensure that forestry activities are conducted responsibly while maintaining ecological balance, and preserving biodiversity.

PHOTO: KATRI LEHTOLA

PHOTO: KATRI LEHTOLA

Forestry Ltd's Environmental Guide

One of the strategic goals of Metsähallitus is to halt the decline in biodiversity on state-owned lands. Conservation efforts are one way of preserving forest biodiversity on state-owned land but the key issue lies in the sustainable management of multiple-use forests. The objective of the Metsähallitus Forestry Ltd's Environmental Guide is to ensure the multifaceted and ecologically sustainable management of state-owned multiple-use forests, as well as the continuous provision of ecosystem services, in an ever-changing operating environment.

The total area of land managed by Metsähallitus is almost 9.2 million hectares. Slightly over half of this , i.e. 4.9 million hectares, consists of multiple-use forests managed by Metsähallitus Forestry Ltd, with approximately 3.5 million hectares used for forestry purposes. All multiple-use forests under the economic management of Metsähallitus Forestry Ltd are certified according to the international PEFC system. The Environmental Guide, together with the Forest Management Guide, forms a comprehensive set of instructions for the management and use of state-owned multiple-use forests. Metsähallitus Forestry Ltd. also manages areas for the Natural Resources Institute Finland, the Finnish Defense Forces, the Finnish Border Guard, and educational institutions. Due to the specific nature of these areas, the guidelines in the Environmental Guide may not apply to them in all aspects.

PHOTO: LAURA KAMMONEN

Different Forms of Forest Use Are Harmonized in State-owned Multiple-use Forests

Multiple-use forestry refers to the practice of combining different activities in forests alongside timber production. These activities include recreation, hunting, berry picking, and economic activities such as reindeer herding and tourism services. Preserving biodiversity and other natural values of the forests is also an integral part of multiple-use forestry. The needs of these different uses are reconciled in the planning and management of forests.

PHOTO: AKU AHLHOLM

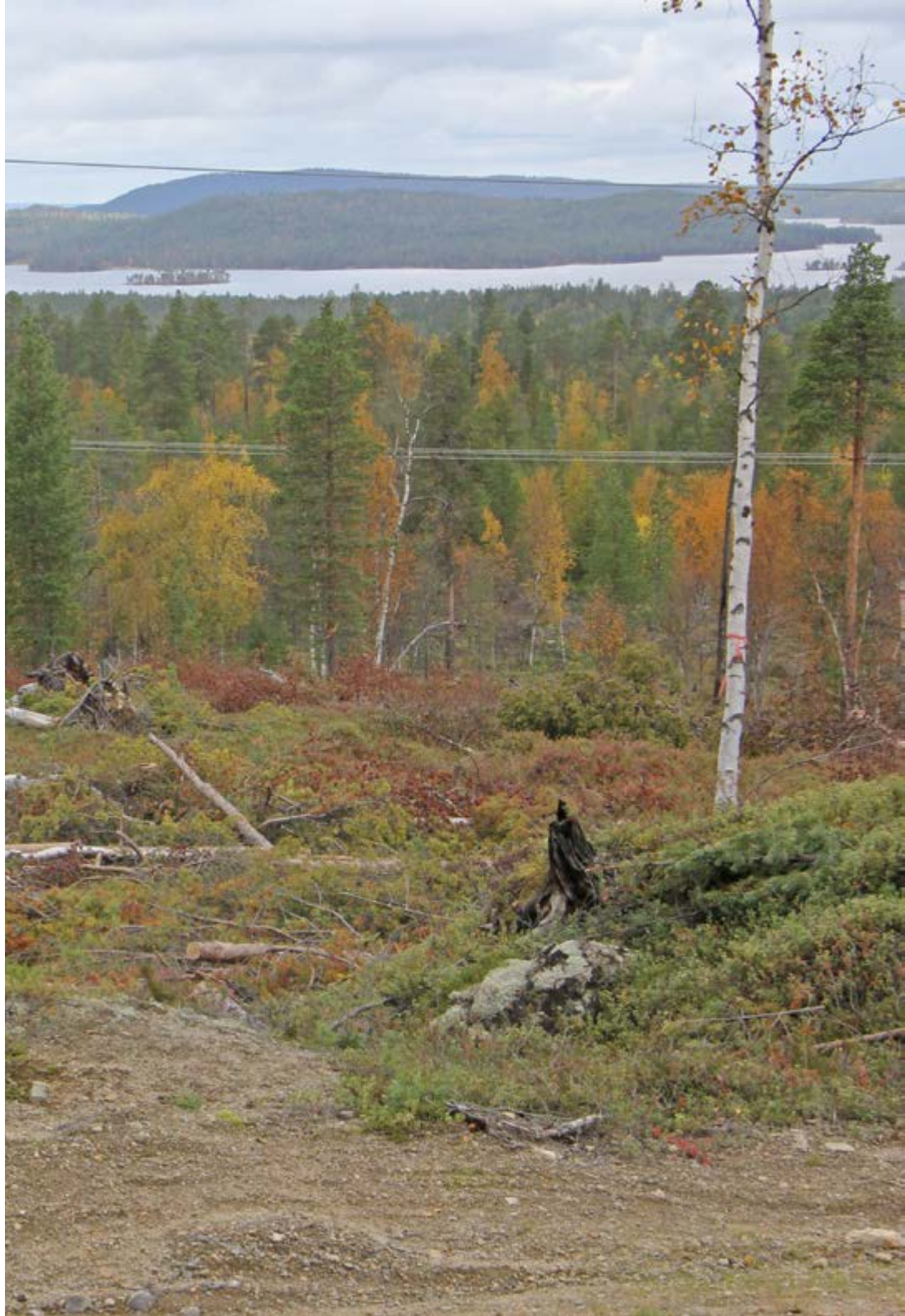
Soil preparation affects both nearby and distant landscapes, terrain accessibility, and conditions for versatile use. Soil preparation that exposes vast areas of mineral soil increases overgrowth and the need for tending the seedlings stands, while decreasing shrub vegetation such as bilberry which is an important food source for wildlife. Attention should be paid on the preparation method so that as much of the mineral soil and shrub vegetation is left intact as possible, and only just enough soil for successful forest regeneration is prepared.

PHOTO: MIKKO MÄNTY

Landscape and Recreation

The significance of forests in terms of landscape varies depending on the extent of recreational use, the purpose of the use, and the distinctiveness of the landscape values. The principles of sustainable management for different types of areas are defined on a case-by-case basis.

Valuable features within the forest landscape are identified and taken into account in forest management. Examples of valuable targets for landscape management include shoreline forests, ridge forests, rocky areas, various buffer and transition zones, as well as areas along roads, trails, and recreational structures. Notable individual structural features include large old living trees, deadwood, boulders, and various cultural heritage sites.



Recreational areas, as well as large recreational and landscape entities, are important because they promote forest cover and the connectivity of areas. Regeneration fellings are carried out in a way that enables achieving the goals for landscape and recreation in these locations. PHOTO: MATTI MELA

Everyman's Rights

In Finland, "everyman's rights," also known as "freedom to roam" or "right of public access," refer to a unique legal concept that allows people to access and enjoy the country's natural environment and outdoor spaces, regardless of land ownership. It is important to note that while everyman's rights grant access to natural spaces, they also come with responsibilities. People are expected to follow the principles of "Do not disturb, do not destroy," meaning that they should leave no trace of their presence and avoid causing harm to the environment or other individuals.

PHOTO: KATRI LEHTOLA

Natural Products

In multiple-use forests, berry and mushroom picking are considered everyman's rights. Picking berries and mushrooms growing on trees is also allowed if it does not harm the tree. However, harvesting chaga mushroom requires the landowner's permission. Everyman's rights also allow the collection of non-protected flowers, fallen branches, cones, and seeds.

Taking products that are not covered by everyman's rights, such as chaga, resin, moss, and spruce tips, from Metsähallitus' multiple-use forests requires a personal natural product permit, which can be obtained by purchasing a permit from the Eräluvat.fi web shop.

The lingonberry thrives and produces berries in dry forests. Typically, the lingonberry shrubs strengthen, and the berry harvest increases after a regeneration felling. PHOTO: PIA-MARIA THOMSSEN

Reindeer Husbandry

Reindeer husbandry is a traditional livelihood protected by law in Northern Finland. Reindeer are allowed to graze freely in the reindeer herding area, which includes roughly one third of the northern-most Finland. State-owned lands within the Sámi homeland area are part of the area designated for reindeer husbandry under the Reindeer Husbandry Act. The Reindeer Husbandry Act requires that consultations take place with the representatives of the reindeer herding cooperatives whenever measures significantly affecting reindeer husbandry are planned on state-owned lands. Legislation regarding Metsähallitus states that the management, use, and conservation of natural resources within the Sámi homeland area must be coordinated to ensure the preservation of traditional livelihoods and Sámi culture.

To reconcile forest management, reindeer husbandry, and other land uses, Metsähallitus and the Reindeer Herders' Association have negotiated an extensive agreement that defines cooperation methods and special measures and restrictions necessary to consider reindeer husbandry on state-owned lands.

The conditions of reindeer husbandry are considered in various forestry measures. If forestry measures require changes e.g., in reindeer fence structures or if they would take place inside fenced areas, a field inspection is conducted if needed before the measures are initiated. PHOTO: JUHA HÄNNINEN

Notable areas for reindeer husbandry, where the significance of forestry methods is emphasized, include the following:

1. Winter grazing areas, especially areas where thin snow cover allows for lichen grazing, as well as grazing areas with hanging moss when the ground is frozen.
2. Calving areas, which are found particularly on quiet mountain, ridge, and hill slopes where the snow melts early in the spring.
3. The transportation route between grazing areas and sorting enclosures.
4. The vicinity of reindeer fences and sorting pens.

Game

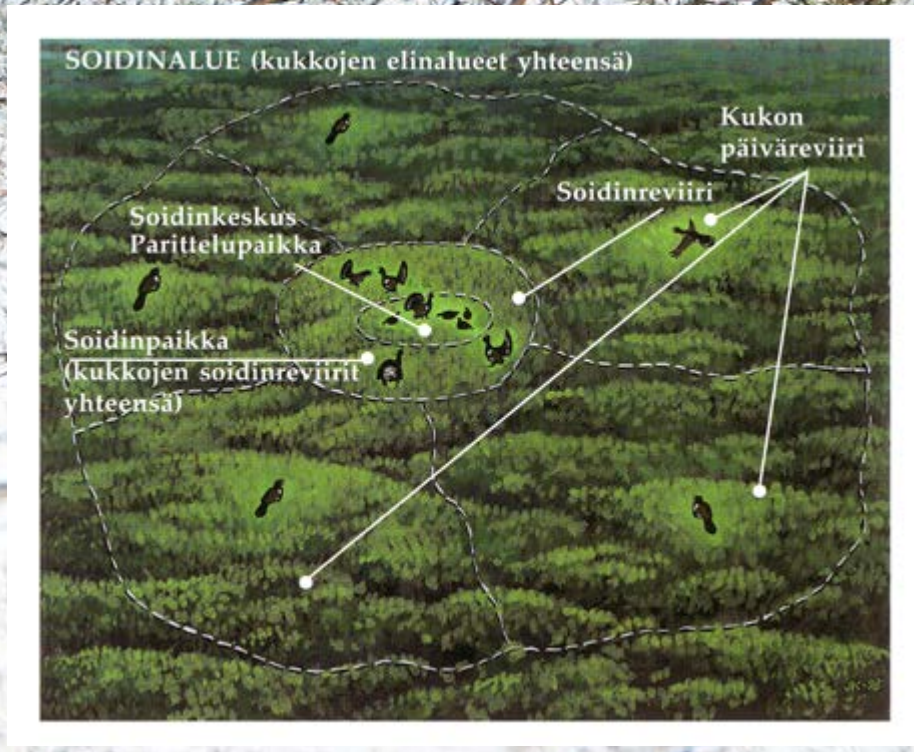
State-owned multiple-use forests are important hunting areas for both local residents and permit-holding hunters. In the management of wildlife habitats, the needs of both forestry and game management are balanced. The goal is to safeguard the living conditions of game animals and maintain viable game populations. Multiple-use forests are maintained and developed as wildlife habitats through forest management practices, such as leaving game thickets, at different stages of forest management. Managing wildlife habitats is a long-term endeavor, with effects stretching over several decades.

Willow Ptarmigan (*Lagopus lagopus*).
PHOTO: TIMO ESKOLA

Capercaillie – An Umbrella Species

The capercaillie (*Tetrao urogallus*) is considered one of the key species for natural conservation in multiple-use forests. Therefore, conserving the capercaillie's lekking areas holds a special position in Metsähallitus' wildlife habitat management. The objective is to maintain viable and huntable capercaillie populations on state-owned forest areas through forestry-related nature management and game management practices. The vitality of the capercaillie population reflects the good ecological condition of the forest, which is why the capercaillie is often referred to as an "umbrella species".

PHOTO: AKU AHLHOLM



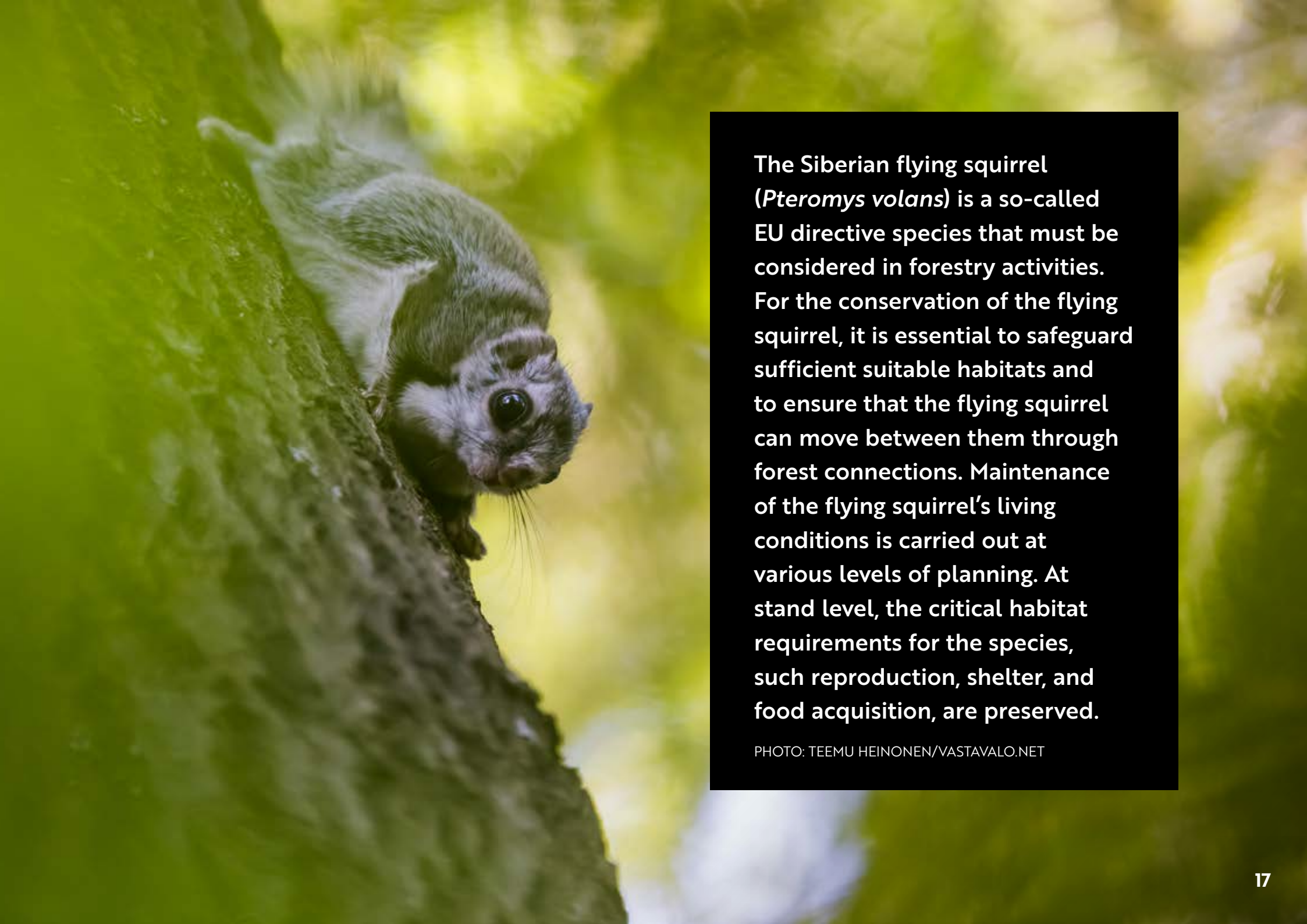
"Lekking" is specific mating behaviour. Male birds gather at specific sites to perform courtship displays and vocalizations to attract females during the mating season. Using the capercaillie-analysis tool the Metsähallitus' geographic information system, it is possible, to ensure the preservation of forest connections to the woods surrounding the capercaillie's lekking site. PHOTO: JARI KOSTET

Promoting Biodiversity in Multiple-use Forests

Safeguarding biodiversity in state-owned multiple-use forests relies on careful land use planning and continuously updated inforemation e.g., species occurrences. Essential tools for this purpose are natural resource and area-ecological planning, which are repeated regularly and aim to reconcile ecological goals for biodiversity conservation with the needs of different forest use activities.

Area-ecological planning considers the entire natural environment of a vast forest area, including both nature reserves and state-owned multiple-use forests with their ecological networks. Ecological networks refer to a network of sites left unmanaged or managed with caution to maintain valuable habitats and their associated species. Transition zones in multiple-use forests, buffer zones along water bodies, retention trees, small conservation sites – e.g. game thickets – and even logging residues and snags, create important habitats for various species.

Even individual tree stumps create important microhabitats in the forest for organisms that depend on decaying wood. PHOTO: PIA-MARIA THOMSSEN



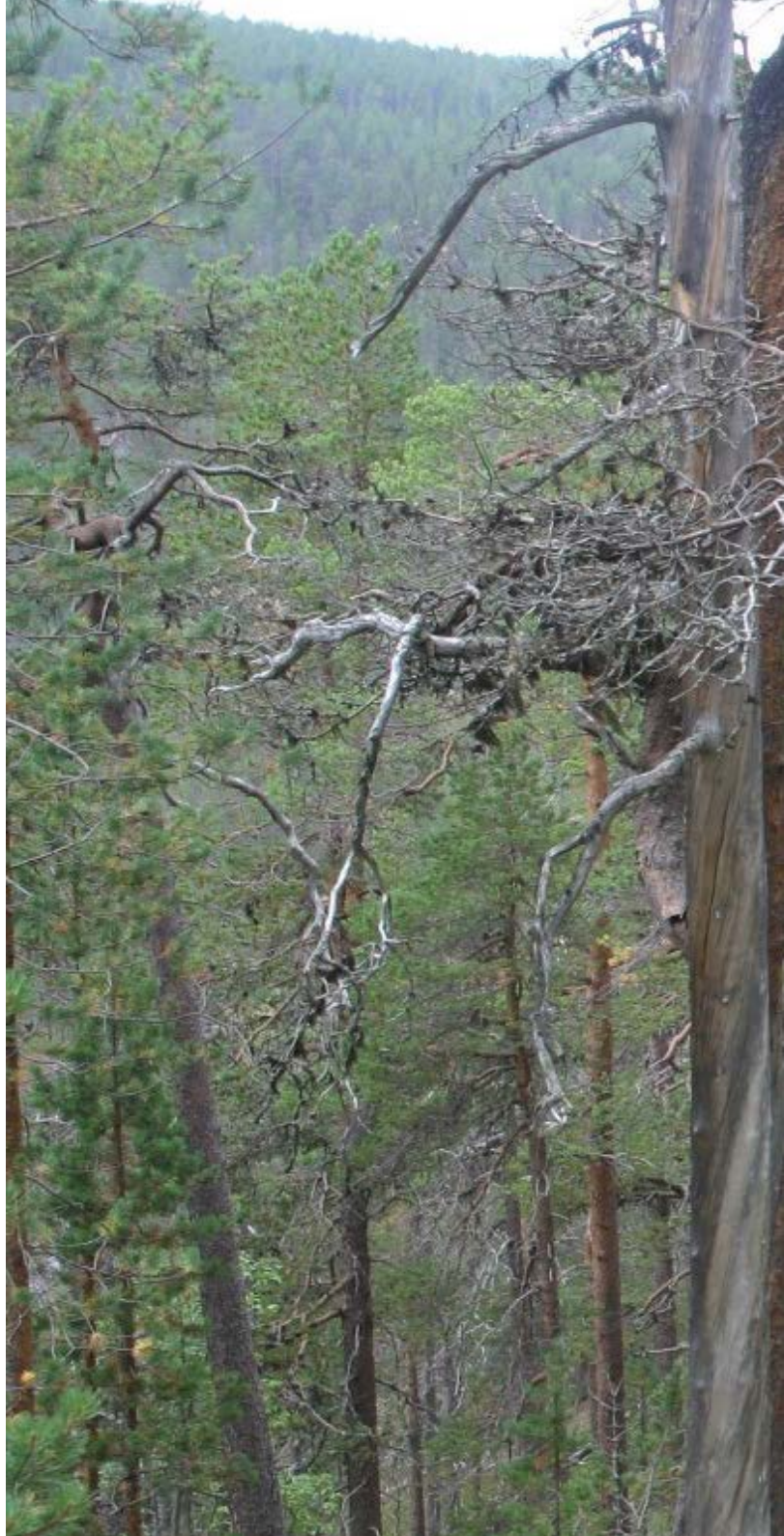
The Siberian flying squirrel (*Pteromys volans*) is a so-called EU directive species that must be considered in forestry activities. For the conservation of the flying squirrel, it is essential to safeguard sufficient suitable habitats and to ensure that the flying squirrel can move between them through forest connections. Maintenance of the flying squirrel's living conditions is carried out at various levels of planning. At stand level, the critical habitat requirements for the species, such reproduction, shelter, and food acquisition, are preserved.

PHOTO: TEEMU HEINONEN/VASTAVALO.NET

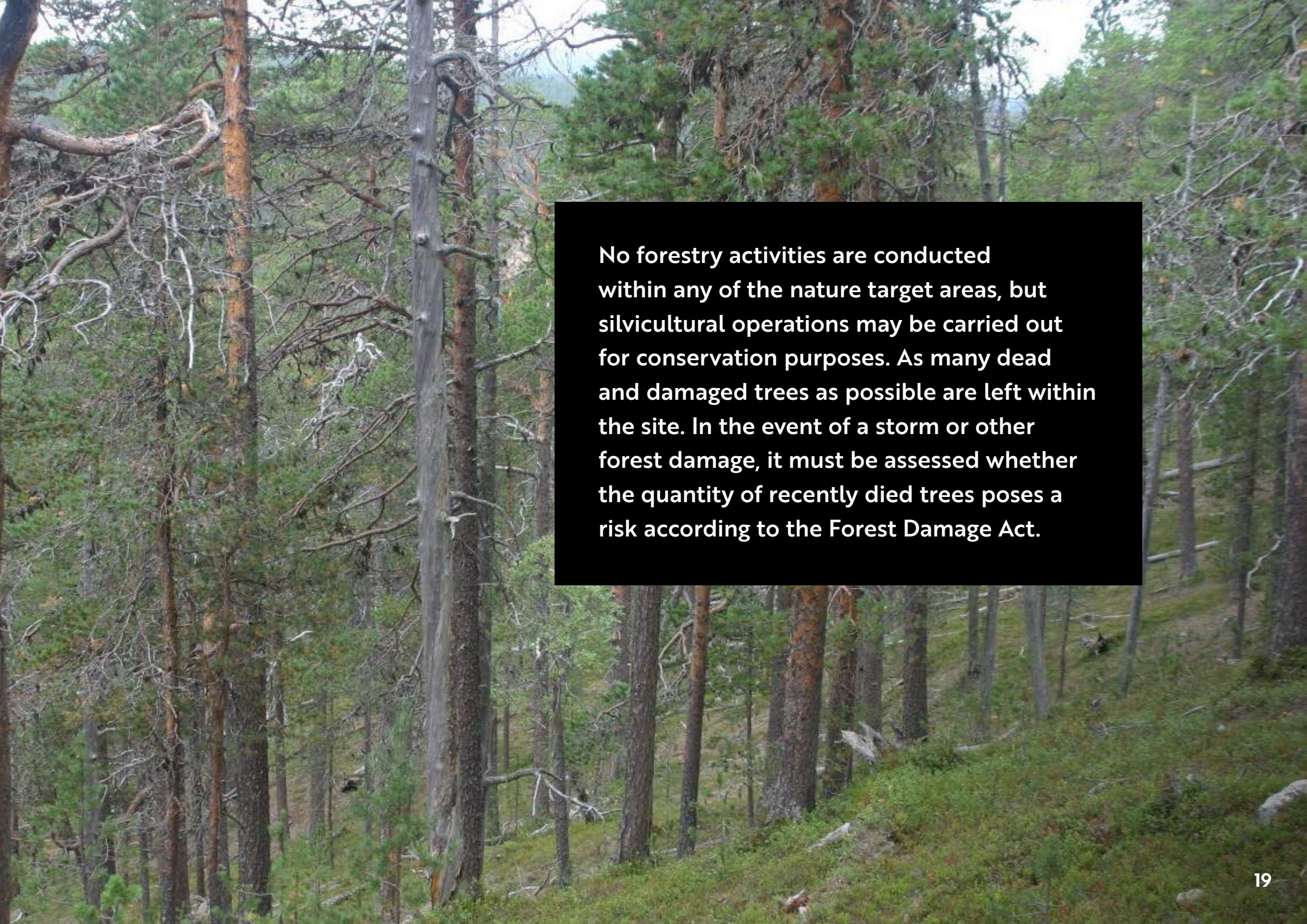
Valuable Habitats in Multiple-use Forests

Some valuable habitats in multiple-use forests are defined based on their significance either in forest or nature conservation acts. Valuable habitats in multiple-use forests are identified through area-ecological assessments, other inventories, or during management planning. For instance, area-ecological assessments may identify other sites that do not necessarily meet the criteria in the Environmental Guide yet hold ecological value.

As part of the implementation, the aim is to identify valuable habitats that have not previously been discovered and add them to the geographic information system. These nature targets are recorded in the geographic information system as either area or point features. Any changes to the boundaries a valuable habitat or ecological connection are planned in collaboration with Metsähallitus Parks & Wildlife Finland. During planning and implementation, small conservation areas, such as retention tree groups and game thickets may also be preserved and mapped even if they are not recorded as ecological sites.



The steep shaded ridge environments are one of the ecological site types that are ledt outside forestry actions. PHOTO: LAURI KARVONEN



No forestry activities are conducted within any of the nature target areas, but silvicultural operations may be carried out for conservation purposes. As many dead and damaged trees as possible are left within the site. In the event of a storm or other forest damage, it must be assessed whether the quantity of recently died trees poses a risk according to the Forest Damage Act.

A Valuable Habitat Type – Species Hotspot

Ongoing research continually provides new information on the endangered status of species in Finland, leading to an increased emphasis on species conservation in forestry. The status of certain groups of species still requires special attention and additional measures to reverse the trend of species endangerment in forests. The section of the Environmental Guide that deals with species occurrences and their consideration was completely revised in 2023. As a result, the available guidelines are now up to date and clearer on how to incorporate species occurence data into forest management. An additional criterion for a valuable habitat has been added to the toolkit, allowing for the identification of significant species hotspots using uniform requirements and excluding them from forest management activities.

The Cat's Paw Lichen (*Felipes leucopellaeus*, distinguished by the dark, hairy apothecia in the center of the image) is an endangered species found in shady and humid forests, primarily growing on the base of large spruce trunks. PHOTO: TUOMAS KALLIO

Small Scale Conservation Sites

In all forest management phases, live retention trees are left in place. Ecologically valuable live trees, such as significantly larger individuals or special tree forms, are given priority. If possible, retention trees are concentrated into large groups, preferably consisting of multiple tree species and different canopy layers, and are left permanently on the site.

Artificial snags, or high biodiversity stumps, are made by cutting a live tree at a hight of two to five meters. They are created in every logging site at a rate of two to five snags per hectare. Artificial snags are preferably made from girthy trees and left permanently on the site to stand alone or in retention tree groups.

In clearing and logging operations, a minimum of three game thickets ranging from 10 to 100 square meters each are left per hectare, unless they have been retained in previous treatments. In addition, the underlays of retention tree groups are left uncleared, to act as thickets for wildlife.

Creating artificial snags in birches is recommended, beacause birch snags are vital nesting sites for the Willow tit (*Poecile montanus*). PHOTO: PIA-MARIA THOMSSEN

Dead wood is not harvested, and driving over coarse woody debris is avoided.

Active Habitat Management

The primary objectives of active habitat management are related to reasons other than timber production, such as conserving biodiversity or securing habitats for various species.

Suitable sites for wetland restoration can be found, for example, in the immediate vicinity of protected wetlands or wetland nature targets, or in marsh areas where endangered wetland types are present. PHOTO: KEIJO KALLUNKI

Restoration has a positive long-term impact on both peatland ecosystems and water conservation. As the water systems and vegetation of the restored area return to a more natural state, nutrients and suspended solids are captured in the peat. Additionally, the restored area can help mitigate flood peaks. However, depending on the size of the area and its watershed, as well as its vulnerability to erosion, restoration can initially lead to a significant increase in the leaching of phosphorus and organic matter. The leaching tends to stabilize and can decrease to levels lower than those of drainage within just five years after restoration.

In **wetland restoration**, the goal is to promote the preservation and recovery of wetland nature values by adjusting the water regime and forest structure to resemble natural conditions as closely as possible.

There are almost no forest fires in Finland. Hence, **controlled burning** is needed to produce burnt wood for species dependent on it for habitat. Fire management practices in multiple-use forests include **prescribed burns** and **controlled burning of retention tree groups**.

The objective of managing **sunny dry habitats on eskers** is to increase the openness and sun exposure by removing some trees and exposing mineral soil patches. This promotes a suitable environment for specific flora and fauna.

Stream restoration projects are carried out as separate funding initiatives or as joint projects according to the goals set in regional water management plans.

Ensuring **stream connectivity** for all aquatic organisms is a requirement for water management. The removal of barriers to fish migration is prioritized in collaboration with Metsähallitus Wildlife Services.

In the **management of grove forests/herb-rich forests**, preference is given to valuable broadleaved trees when available, and efforts are made to maintain the multi-layered structure of the forest. A primary management measure involves partial removal of spruce trees, and logging residues from coniferous trees are aimed to be removed from the broadleaved forests.

Prescribed burns and controlled burning of retention tree groups produce burnt wood for species that rely on such habitats.

PHOTO: OLLI SALO

Water Protection in Forestry

Because of forestry activities, both nutrients and suspended solids can be leached into water bodies. However, with careful planning, the adverse effects on water bodies from drainage and soil preparation can be significantly reduced. Watershed planning focuses on one drainage basin (water body or its section) at a time. Watershed planning is carried out in conjunction with the placement planning of logging activities. Water clarification measures include well-functioning and adequately sized surface drainage areas and sufficiently wide watercourse buffer zones as well as combinations of these different methods, including for example submerged timber.

In watercourse buffer zones of varying widths, the topography and erosion-prone areas are considered. A wider buffer zone is appropriate when there is a high risk of nutrient leaching for example, due to the slope of the terrain towards the watercourse. PHOTO: ARI RAUTIO

Continuous Improvement

The Environmental Guide has been published since 1993. Due to the rapidly changing operating environment, a decision was made in 2022 to update the guide annually to serve users as efficiently as possible and to support Metsähallitus' strategy and derived actions. Its annual update also contributes to our commitment to continuous improvement. Continuous improvement is an essential part of our operations, and we are committed to it through the ISO 14001 Environmental Management System standard.

The guide is now published exclusively in digital format, allowing it to be integrated into both Metsähallitus' digital learning environment and additional information sources. The digital publishing platform facilitates the annual updates of the guidelines and ensures the utilization of the latest information in forest management action planning.

Metsähallitus Forestry Ltd's Environmental Guide is available for reading and downloading on Metsähallitus' website (in Finnish).

Lung lichen (*Lobaria pulmonaria*). PHOTO: PIA-MARIA THOMSSEN