

FROM GOALS TO ACTION!

GUIDELINES FOR SEMI-NATURAL GRASSLANDS
UNTIL 2025 IN FINLAND'S PROTECTED AREAS



Photo: Maija Mussaari

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Traditional rural biotope management, or looking after semi-natural grasslands and natural pastures, is one of the key measures for preserving the biodiversity of Finnish nature. The area of traditional rural biotopes declined by over 99 per cent in the 20th century. However, they continue to be the most species-rich part of our living environment.

Metsähallitus Parks & Wildlife Finland is responsible for managing protected areas on state-owned land. It also manages the network of protected areas on private land together with the landowners and the regional ELY Centres (Centres for Economic Development, Transport and the Environment). In state-owned protected areas, the surface area of traditional rural biotopes under management has tripled in over 10 years, and in private protection areas, it has increased up to seven-fold. Regardless of this, many valuable sites remain unmanaged, or their management needs to be intensified.

The objective of this agenda is to formulate guidelines for Metsähallitus Parks & Wildlife Finland's work on semi-natural grasslands and natural pastures, and give a clear direction to these activities, aiming for goal-oriented improvement of traditional rural biotopes' ecological status. A considerably greater number of traditional rural biotopes are found on Metsähallitus' land and in private protected areas than was previously known. The target is that by 2025, 15,000 hectares of semi-natural grasslands and natural pastures in protected areas will be under high-quality

management, and that their connectivity will have improved. The status and representativeness of Natura 2000 habitats will have improved, and populations of endangered species living in traditional rural biotopes will have been secured.

In order to reach these goals, good cooperation with private landowners and livestock farmers as well as other central actors plays a key role. Joint goals enable ecologically smart and cost-effective targeting of management. Through geospatial data sets produced in connection with this agenda, an information system intended for shared use and an improved level of knowledge, the agenda's implementation can be monitored better, also addressing any changes in the operating environment flexibly. Without sufficient resources, management cannot be implemented to a high standard. Agri-environment payments are the most important source of financing for traditional rural biotope management, also in protected areas.

Metsähallitus is the largest landowner of areas with traditional rural biotopes in Finland. This agenda includes both protected areas and other state-owned lands administered by Metsähallitus, and also private protected areas. This way, a complete view has been obtained of the status of semi-natural grasslands and natural pastures in these areas, as well as of Metsähallitus' role as their manager. The policies of the agenda apply to traditional rural biotopes managed and administered by Metsähallitus Parks & Wildlife Finland and those in private protected areas.



Timo Tanninen
Executive Director, Parks & Wildlife Finland
Metsähallitus

Photo: Maija Mussaari





LOOKING TO THE FUTURE

Our goal is that in 2025, Metsähallitus will be the foremost expert and a national forerunner of traditional rural biotope management engaging in broad-based cooperation

FROM PRESSURED TO PRECIOUS

We will improve the status of the most endangered habitats in Finland

- Semi-natural grasslands and natural pastures are the most species-rich habitats
- Semi-natural grasslands and natural pastures are a safe haven for endangered species
- Habitat and species management go hand in hand
- Metsähallitus plays a crucial role in meeting international obligations



Photo: Maija Mussaari



Photo: Maija Mussaari

THE RESULTS OF OUR WORK ARE SEEN IN THE LIVING LANDSCAPE

Through the traditional rural biotope network, we maintain both ecological and cultural values

- Protected areas safeguard the most valuable landscapes and cultural heritage
- Traditional rural biotope management strengthens the relationship between humans and nature
- Managing traditional rural biotopes in protected areas is participatory and supports citizens' wellbeing



Photo: Katja Raatikainen



Photo: Katja Raatikainen



Photo: Maija Mussaari

MAKING THE MOST OF OUR RESOURCES

We manage traditional rural biotopes cost-effectively and responsibly

- Restoration and management are targeted based on conservation criteria and site values
- Agri-environment payments multiply the funding available for traditional rural biotope management in protected areas
- Valuable managed sites in protected areas set an encouraging example for others



Photo: Katja Raatikainen



Photo: Katja Raatikainen

COOPERATION IS THE KEY TO SUCCESS

We promote interaction, share expertise and support local economies

- Livestock farmers actively promote biodiversity
- Effective cooperation networks promote continuity and flexibility in management
- Use of contractors benefits local economies



Photo: Anna-Riikka Ihantola



Photo: Katja Raatikainen



THIS IS HOW WE WILL DO IT – OUR GOALS

INCREASE IN SURFACE AREA

- We will expand the area of protected areas under management by 4,000 ha. At minimum 15,000 ha will be under management in 2025*
- We will increase the area of Natura 2000 habitats in traditional rural biotopes
- We will launch traditional rural biotope projects; at least one major project will always be under way

TARGETED MANAGEMENT

- We will target restoration and management actions at sites important for the network of traditional rural biotope sites
- We will place sites of national and regional value under management
- We will manage all sites with traditional rural biotope species needing urgent protection
- We will manage at minimum 90% of the sites where endangered species (CR, EN, VU) occur
- On the most valuable sites, management will be secured by budget funding
- We will prepare ecological management master plans for entities consisting of many valuable sites and featuring extensive nature values
- We will collect up-to-date data on the sites and maintain it

* The achievement of this goal will depend on the available resources.

For the national goals regarding traditional rural biotopes in protected areas, see Appendix 1.

QUALITY IMPROVEMENT

- We will improve the quality of management by 80% on inadequately managed sites
- We will improve the status of Natura 2000 habitats with traditional rural biotopes by at minimum 30%

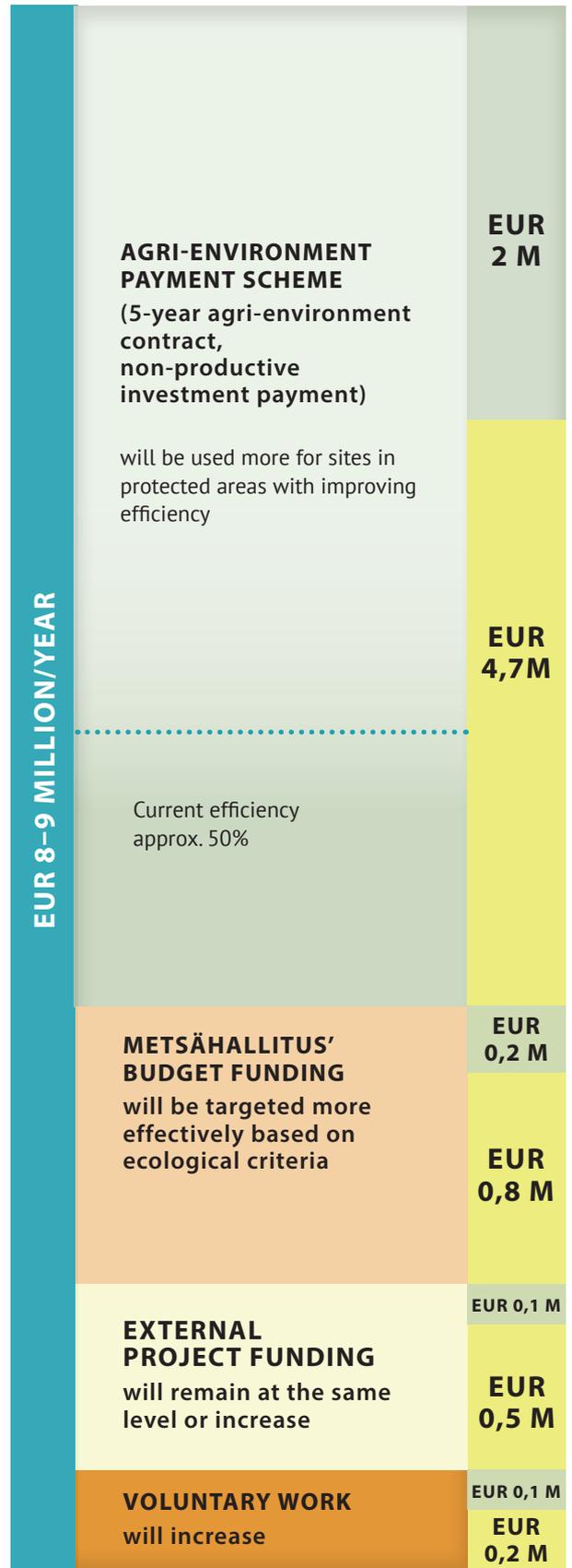
COOPERATION AND COMMUNICATIONS

- We will step up communications about traditional rural biotopes
- We will communicate about the importance of traditional rural biotopes for conservation and the ecological management work carried out by farmers with agri-environment contracts
- We will clarify the internal responsibilities in Metsähallitus
- We will strengthen stakeholder cooperation related to traditional rural biotopes between organisations
- We will provide volunteers with more opportunities to participate in traditional rural biotope management in protected areas

GUIDANCE

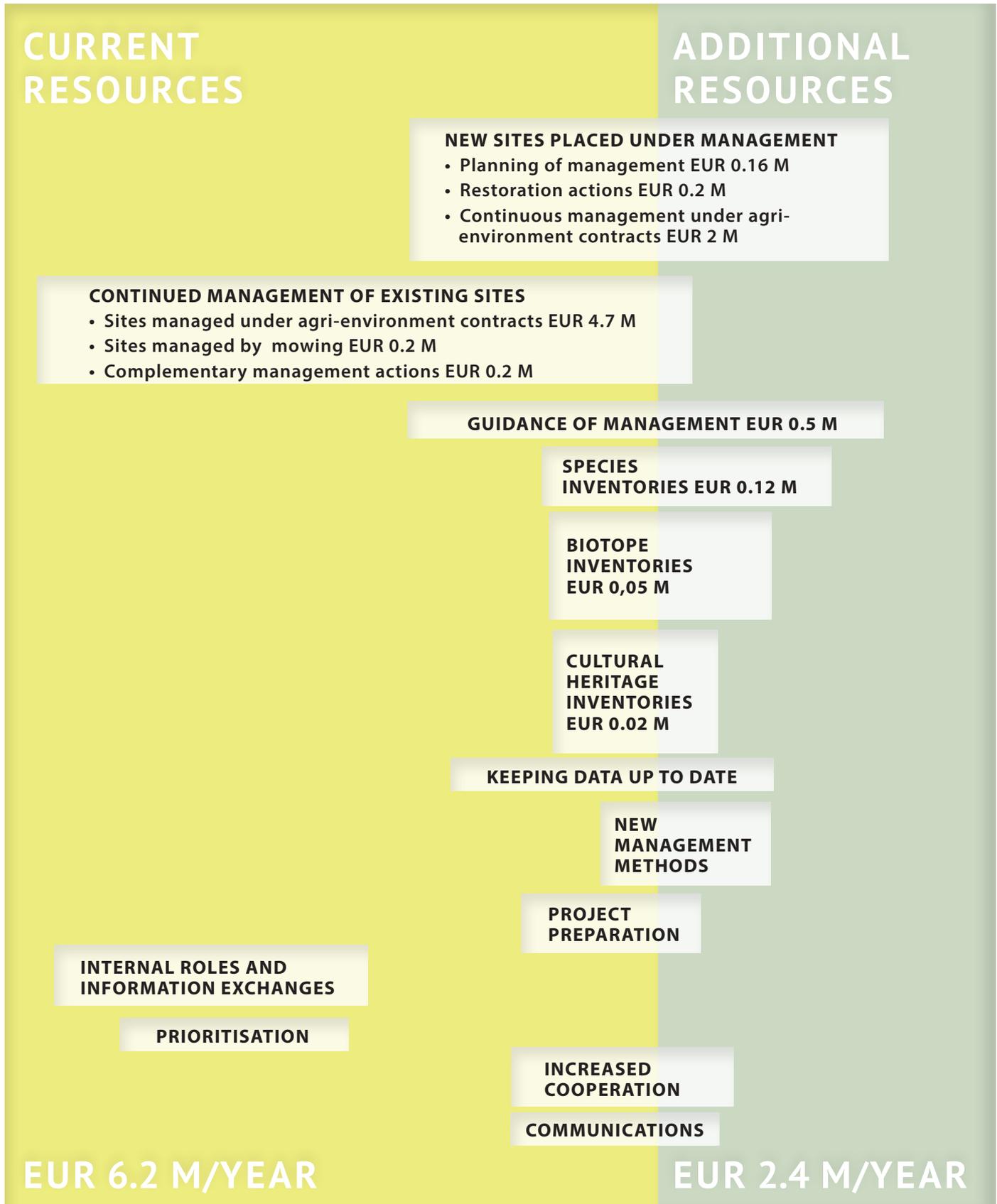
- Using budget funding, we will secure the continuous guidance of management and guide farmers with agri-environment contracts effectively
- Farmers with agri-environment contracts will manage their sites to a high standard, and grazing pressure will be correctly adjusted
- Farmers with agri-environment contracts will also carry out restoration actions

FINDING RESOURCES



Funding for traditional rural biotope management by source and action

The graph shows the current resources in yellow and the need for additional resources indicated by the agenda's goals in green. If the actions are targeted based on their ecological impacts and urgency, Metsähallitus Parks & Wildlife Finland can implement the plan with an increase of EUR 0.2 million in its budget funding. The continued management of the targeted additional areas will take place in cooperation with farmers under agri-environment contracts. On sites already covered by agri-environment contracts, management actions will be intensified and their ecological impact will be enhanced, increasing the efficiency of resources channelled through this scheme. Increased project funding and voluntary work will contribute to achieving the targets. ELY Centre funding for the management of protected areas is not included in the graph.



For more information about the current funding levels, see under 'Current funding'.

A CORNUCOPIA OF BIODIVERSITY

The resources Metsähallitus invests in traditional rural biotope management can be multiplied using the agri-environment payment scheme. Through cooperation between different parties and expert guidance, great biodiversity benefits can be achieved with even small inputs.

Traditional rural biotope management crosses boundaries, not only between conservation and farming but also between official and voluntary activities, efficiently promoting biodiversity.

Local cooperation is an exceptionally cost-effective method of nature conservation with a high social impact.

AGRI-ENVIRONMENT PAYMENT SCHEME

The agri-environment payment scheme contained in the Rural Development Programme can be used to promote biodiversity in agricultural environments and landscape management, the farming of indigenous livestock breeds, wetland management and crane, goose and swan fields under specific 5-year agri-environment contracts. Agri-environment payments may be granted to farmers or registered associations, and nowadays also to private individuals. Applications are submitted in connection with the main applications for agricultural support, and a management plan must be included in the applications.

In programming period 2014–2020, the payment rate for biodiversity management in agricultural environments and landscape management is EUR 450/ha. The increased payment for the management of traditional rural biotopes assessed to be nationally and regionally valuable is EUR 600/ha. In addition to an agri-environment contract, farmers and registered associations may be eligible for non-productive investment aid for the fencing and initial clearing of semi-natural grasslands and natural pastures. The maximum non-productive investment payment based on actual costs is EUR 1,862/ha (on sites smaller than 3 ha. The payment level is reduced as the site area increases.)

Funding for farm-specific advisory services has also been set aside in the Rural Development Programme. For instance, advice may be provided for discussing different aid forms, adding detail to environmental measures and promoting animal welfare.

As the first step towards managing traditional rural biotope sites in protected areas, Metsähallitus plans the site's management and negotiates with the party maintaining the site under contract. The site's manager may then apply to the ELY Centre for funding under the agri-environment payment scheme. Agri-environment contracts are the largest funding form for traditional rural biotope management. In total, over four million euros a year are channelled to the management of protected areas through the scheme. This way, the resources invested in traditional rural biotope management in protected areas may be multiplied by local cooperation.

Sufficient work guidance of a high quality provided by Parks & Wildlife Finland's conservation experts ensures that the resources gained under the agri-environment contracts are used efficiently. The different stages and elements of traditional rural biotope management will then progress smoothly, improving the status of habitats and species. Clearing, mowing and grazing will be correctly targeted and timed, and the quality of the management will be monitored. If necessary, more specific instructions will be provided, or the plan will be changed flexibly as the situation requires.

The end result will be a high-quality management outcome in which biodiversity values have improved significantly while many other aspects, including landscape values, have also increased.



Drawing: Ika Österblad

IN A NUTSHELL

THERE ARE SOME **45,000** HECTARES OF KNOWN SEMI-NATURAL GRASSLANDS AND NATURAL PASTURES IN FINLAND

Approx. **30,000** hectares are under management

OVERALL NATIONAL TARGET FOR TRADITIONAL RURAL BIOTOPE MANAGEMENT **60,000** HECTARES IN **2020**

ON METSÄHALLITUS' LAND AND IN PRIVATE PROTECTED AREAS:

A total of **21,458** hectares of traditional rural biotopes, 3,340 sites, 30% of the sites under management

11,404 hectares on Metsähallitus land, approx. 40% under management

Parks & Wildlife Finland **10,721** hectares, 59% under management

Metsähallitus' Forestry Ltd **662** hectares, 11% under management

Metsähallitus' Property Development unit **21** hectares, 1 hectare under management

10,054 hectares in private protected areas, approx. 65% under management

AVERAGE SITE SIZE **6.4** HECTARES

OVER **40 %** OF THE TOTAL AREA ON THE MOST PRECIOUS SITES OF NATIONAL OR REGIONAL VALUE

GOOD PROGRESS IN THE AREA UNDER MANAGEMENT

The area under management on Metsähallitus' land has **tripled** in over 10 years

The managed area in private protected areas has increased over **seven-fold** in less than 10 years

40 % OF THE SITES STILL UNMANAGED

More than **one out of four** of the most valuable sites are not managed

SCOPE FOR IMPROVEMENT IN MANAGEMENT QUALITY

The quality of management is known to be good on one **half** on the sites

NEED FOR COMPLEMENTARY INFORMATION

- Information on management status is missing for one site out of three
- No traditional rural biotope inventory has been carried out on one **half** of the sites

AN ENDANGERED OR NEAR THREATENED SPECIES HAS BEEN FOUND ON **32 %** OF THE SITES

Over **800** endangered or near threatened species in total

137 SPECIES NEEDING URGENT PROTECTION HAVE BEEN FOUND

ANCIENT MONUMENTS ON **149** SITES

One **half** under management

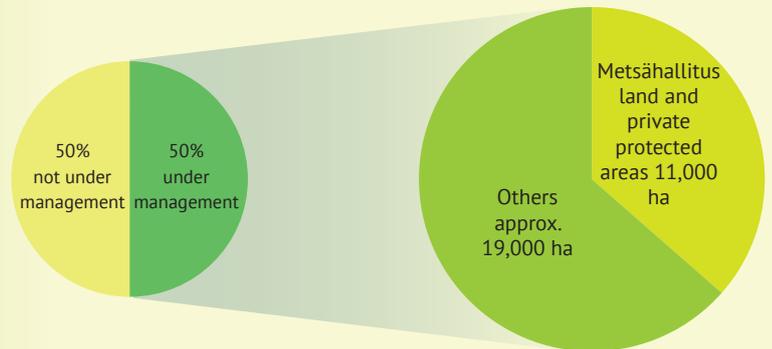


Quaking grass (*Briza media*) is a demanding grass species of the meadows. Photo: Saara Lavi

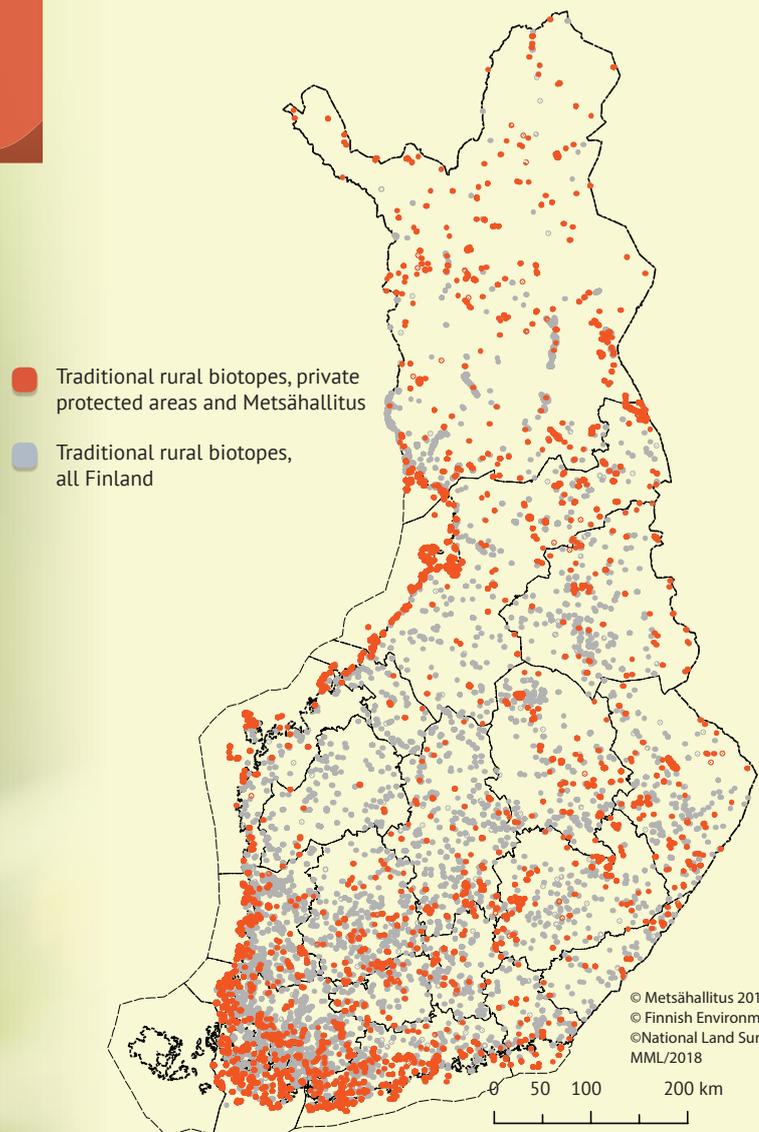
WHAT IS THE CONNECTION BETWEEN TRADITIONAL RURAL BIOTOPE MANAGEMENT AND CONSERVATION?

Each protected area has been established to protect and care for specific species and habitats. Over the years, many of them have been used as semi-natural grasslands and natural pastures. Traditional uses and the disturbance dynamics caused by them have maintained low vegetation and favoured species requiring openness. Habitats similar to those we today call traditional rural biotopes already existed before livestock farming. Large plant eaters maintained low-growth steppes in the Ice Age and later meadow plants as forests gradually spread out. Many traditional rural biotope species date back to that era. Traditional rural biotope species also include other endangered open environment species, including those from sunlit habitats on esker slopes and shoreline species. Continued management and disturbance dynamics of semi-natural grasslands and natural pastures are a precondition for preserving and increasing nature values.

The overall national target of traditional rural biotope management is 60,000 ha, estimated management situation in 2016



Source: Working group on traditional rural biotopes 2000, Kemppainen & Lehtomaa 2009, Agency for Rural Affairs 4/2016, Metsähallitus 2016.



Sites on Metsähallitus land and in private protected areas are a key part of our national network of traditional rural biotope sites. This is where the most valuable sites, the rarest habitats and great numbers of endangered species are found.

Locations of traditional rural biotope sites in Finland.
Source SAKTI (Protected area information system) 1 October 2016

ECOLOGICAL FACTS

A PARADISE OF BIODIVERSITY

- Our most **species-rich** habitat with the highest biodiversity levels but also the **most endangered**
- **90 %** of the traditional rural biotopes have been classified as either critically endangered or endangered
- In reporting required under the EU Habitats Directive, the condition of traditional rural biotopes has been found to be far from a favourable conservation status both in Finland and elsewhere in Europe.
- Traditional rural biotopes include a group of **different** habitats which provide living environments for species of an exceptional diversity
- There are **12** main habitat categories: heaths, dry meadows, rock meadows, mesic meadows, moist meadows, freshwater meadows, seashore meadows, alluvial meadows, fen meadows, wooded pastures, grazed woodlands and pollard meadows

Biodiversity depends on many factors

- grazing or mowing favours meadow plants in competition
- no nutrients are added, the soil is not tilled or seeded
- low growth pattern of vegetation
- no litter
- little or no trees
- trampling and denudation
- decaying wood
- manure

HOTSPOTS OF ENDANGERED SPECIES

- **1/4** of endangered species in Finland are completely dependent on traditional rural biotopes
- In proportion to the remaining habitat area, **100 times more** endangered species live in traditional rural biotopes than in forests, and **500 times more** than in marshes
- While dry meadows boast an exceptional wealth of species, unfortunately many of them are endangered
- Overgrowth of shore meadows is one of the most important reasons for the decline of bird species
- For example, the populations of scare crow and small heath butterflies have dropped by more than **90 %**

LITTLE REMAINS

- Only **1 %** of the habitats are left compared to the situation in the late 19th century
- Currently known areas amount to approx. **45,000 hectares**, while approx. **30,000 hectares are under management**
- The most important factors driving this dramatic drop has been land clearing for cultivation and areas becoming overgrown once grazing and mowing have come to an end
- The species originated in steppes and other open meadows following the Ice Age
- Once a site falls into disuse, the number of plant species is reduced in as little as **10** years

RESCUED BY MANAGEMENT

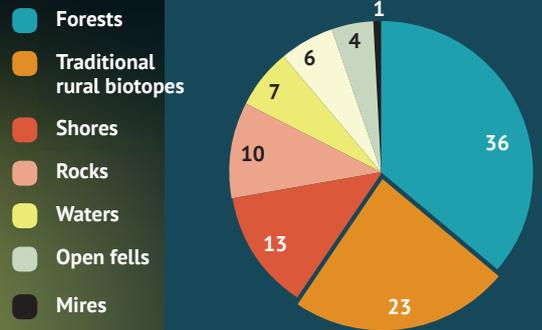
- Semi-natural grasslands and natural pastures cannot be preserved without continuous management by mowing or grazing
- To restore overgrown sites, clearing is usually needed
- In shore meadows, mowing reeds all the way to the water plays a key role in the recovery of wetland birds





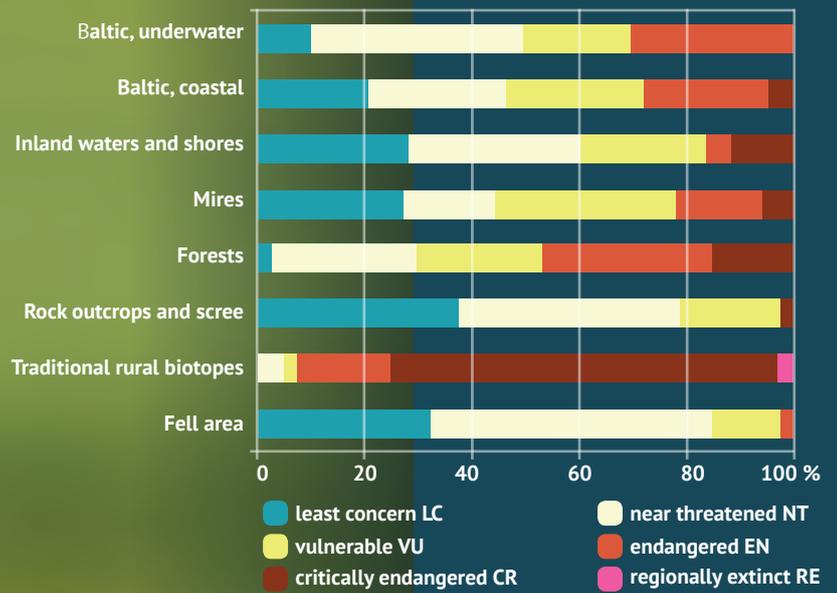
The black-tailed godwit (*Limosa limosa*) classified as endangered in Finland is an example of demanding birds of the shore meadows.
Photo: Jari Peltomäki

ENDANGERED SPECIES BY PRIMARY HABITAT (%)



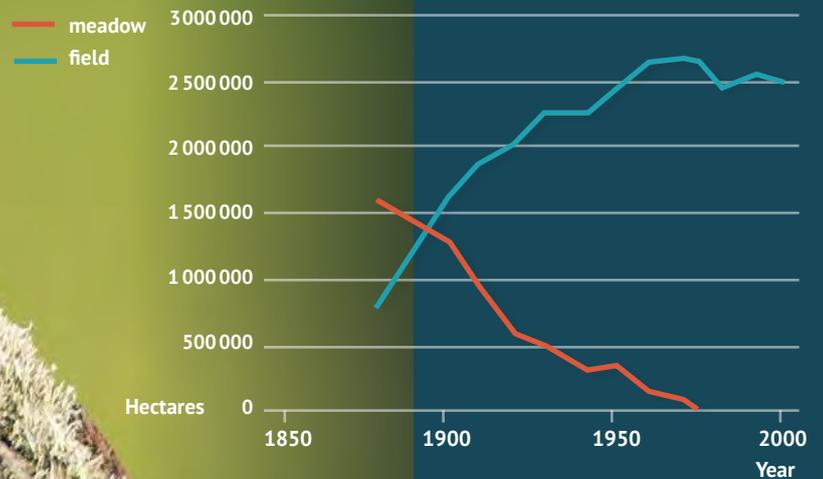
Source: Finnish Environment Institute

CLASSIFICATION OF ENDANGERED HABITATS BY STATUS



Source: Finnish Environment Institute

DEVELOPMENT IN MEADOW AND FIELD AREA



Source: Soininen A. M. 1974: Vanha maataloutemme



The scare cropper butterfly (*Lycaena virgaureae*) used to be common, but its population has declined by 90% in the 2000s. Photo: Teijo Heinänen



The *Calocoris roseomaculatus* bug (VU) is a demanding species of the dry sunlit meadows found in the Åland Islands, the southern coast and Southeast Finland. Photo: Teemu Rintala



The vermilion waxcap (*Hygrocybe cf. miniata*) is an example of the diverse fungus species of semi-natural grasslands and natural pastures. Photo: Katja Raatikainen



The field gentian (*Gentianella campestris*) (VU), which is found in semi-natural grasslands and natural pastures, has become increasingly rare. Photo: Katja Raatikainen

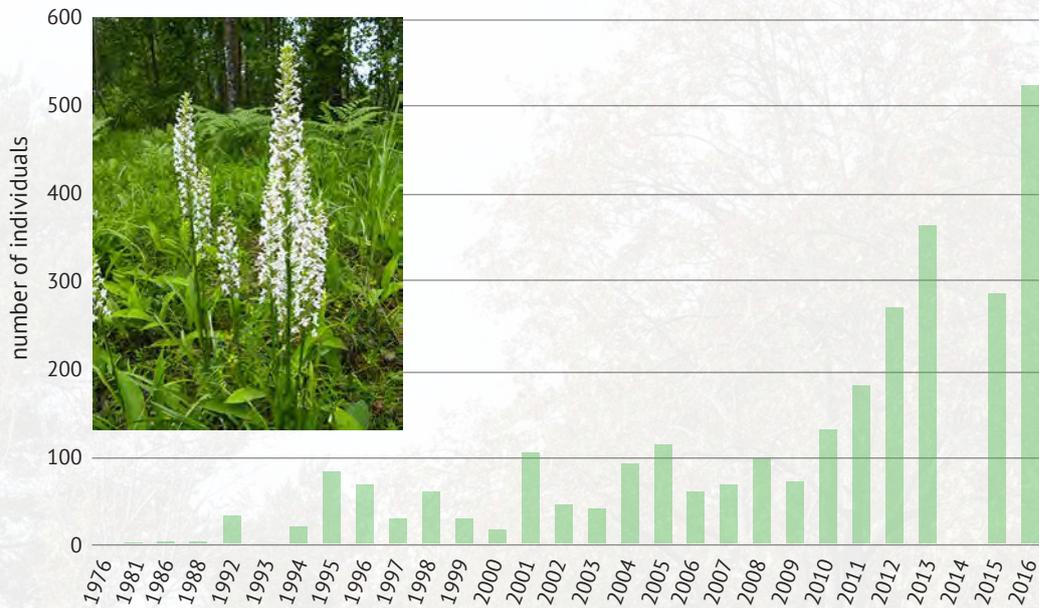


Mowing at the right time promotes the survival of species living in meadows. Photo: Mia Vuomajoki



**Biodiversity
creates
biodiversity**

DEVELOPMENT OF FRAGRANT ORCHID INDIVIDUALS IN 1976–2016 AT ONE TRADITIONAL RURAL BIOTOPE SITE IN THE ARCHIPELAGO NATIONAL PARK



Boosted by management that began in the early 1980s, the number of endangered fragrant orchid individuals (*Gymnadenia conopsea*) (VU) has increased spectacularly during the monitoring period in 1976–2016. The species has been monitored on an almost annual basis since 1992, and before that, at intervals of approximately five years. Source: Leif Lindgren 2016



At best, a meadow can feature 40 plant species in a square metre

Continuous disturbance by grazing maintains biodiversity

Photo: Maija Mussaari

MANY TYPES OF BENEFITS FROM SEMI-NATURAL GRASSLANDS

ECOSYSTEM SERVICES ARE MATERIAL AND INTANGIBLE BENEFITS PRODUCED FOR HUMANS BY NATURE AND BIODIVERSITY. THIS SECTION DESCRIBES KEY ECOSYSTEM SERVICES MAINTAINED BY SEMI-NATURAL GRASSLANDS AND NATURAL PASTURES WHICH ARE ADDITIONAL TO THEIR NATURE VALUES.



Photo: Päivi Leikas



Photo: Mia Vuomajoki

WATER AND NUTRIENT CIRCULATION

Untilled and unfertilised meadows are useful in many ways. With their year-round plant cover, meadows influence ground water accretion by binding moisture and filtering it into the ground. The meadow's ability to absorb runoff water prevents soil washout and nutrient leaching into water bodies. Grazing and mowing remove nutrients from shore meadows, reducing further nutrient leaching and eutrophication of water bodies. Reed biomass removed from shore meadows by mowing can be spread on fields to improve the soil, thus reducing the need for artificial fertilizers. Felled trees and clearing waste can be made into chips or firewood, or used for building or the manufacture of different wood products.

CONSERVATION OF GENETIC RESOURCES

Semi-natural grasslands and natural pastures are significant genetic resources. They provide habitat for many wild relatives of our cultivated plants, and indigenous livestock breeds make excellent ecological and landscape managers. In general, the vegetation in traditional rural biotopes goes back a long time: many of these species spread to Finland while a steppe climate prevailed after the Ice Age.

CONSERVATION OF LANDSCAPES AND CULTURAL HERITAGE

Traditional agricultural landscapes are an important part of the Finnish cultural landscape and history. Semi-natural grasslands and natural pastures are associated with old working methods, including scything, hay-making by working parties and pollarding of trees. In addition to rural areas, livestock grazing in meadows and woodlands animates the landscapes of national parks and urban areas. Cultural heritage also benefits from traditional rural biotope management, for instance when shrubs and dead grass covering ancient monuments are removed. Traditional rural



biotopes and farming have also inspired Finnish art and continue to play an important part in the Finnish cultural identity.

SAVING POLLINATORS AND PREDACIOUS INSECTS

Semi-natural grasslands and natural pastures are favoured by honey plants and pollinators. Pollinators and predacious insects benefit from the rich variety of plant species in meadows and suitable nesting sites in agricultural environments, which are otherwise becoming excessively homogeneous. Unlike in areas used for intensive farming, in traditional rural biotopes insects are not exposed to pesticides. The spread of pollinators and predacious insects from grasslands to nearby fields creates economic benefits for crop farming, as they improve crop growth and facilitate biological pest control by attacking agricultural pests.

BENEFITS FOR LOCAL ECONOMIES

Traditional rural biotope management has positive impacts on rural employment and local economies. The farming industry benefits from additional grazing areas and funding received through agri-environment contracts. For agritourism, semi-natural grasslands and natural pastures and their management offer many types of potential (including attractive landscapes, grazing livestock, heritage farms). Products based on grazing animals, including skins and wool, are an ecologically sustainable choice for consumers.

FOOD FROM THE MEADOWS

Meat production from animals grazing in natural pastures benefits the environment and promotes biodiversity, and traditional rural biotopes are also perfect for grazing organic livestock. Many edible wild plants and traditional herbs, which make great seasoning, may be gathered in meadows, while wooded pastures and grazed woodlands are ideal for collecting edible fungi.

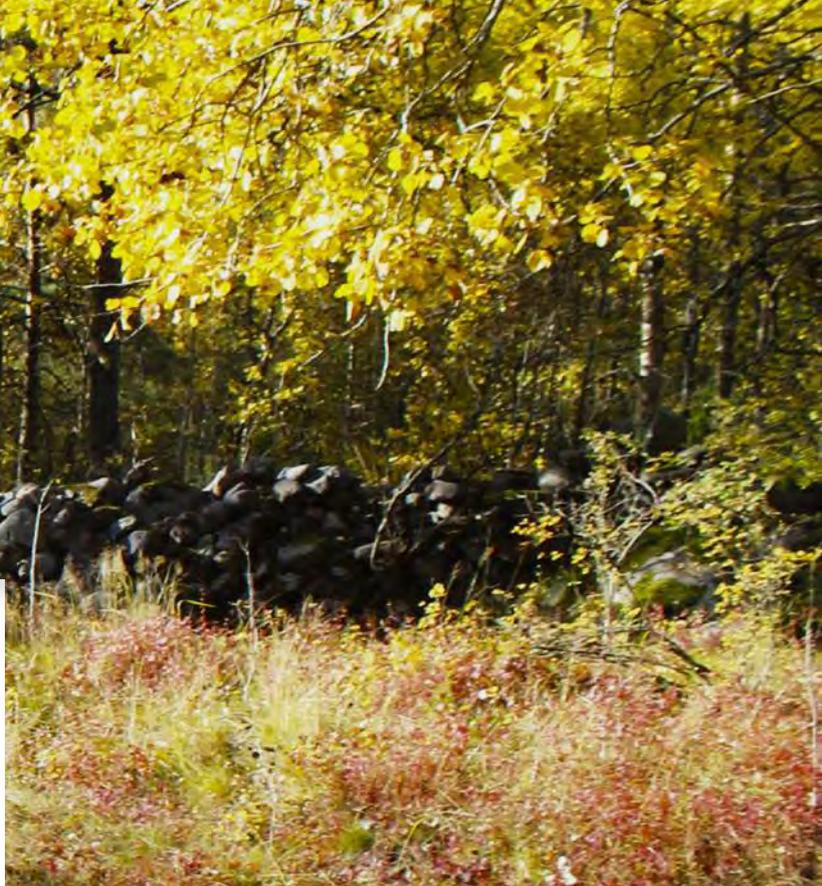


Photo: Maija Mussaari



Photo: Teijo Heinänen

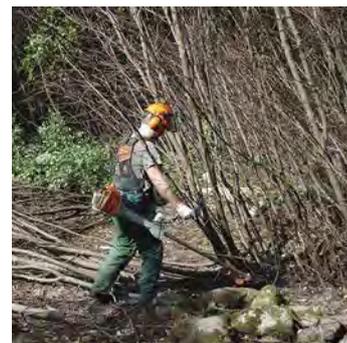


Photo: Katja Raatikainen

MORE OPPORTUNITIES FOR RECREATION

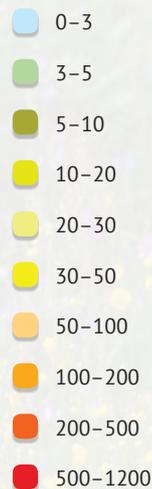
Traditional rural biotopes are significant for recreational use. Seashore meadows are highly popular bird-watching sites, and Laajalahti meadow in Espoo, for instance, is visited by up to 100,000 people annually. When visiting traditional rural biotopes, you can not only admire the richness of species but also immerse yourself in the landscape using all of your senses. Hiking routes take you through, or bring you close to, many sites in protected areas. Visitors of all ages enjoy beautiful landscapes, which has positive impacts on their health and wellbeing. Participating in traditional rural biotope management, for example by volunteering, is an experiential way of strengthening your personal relationship with nature.

AREAS ON THE MAP

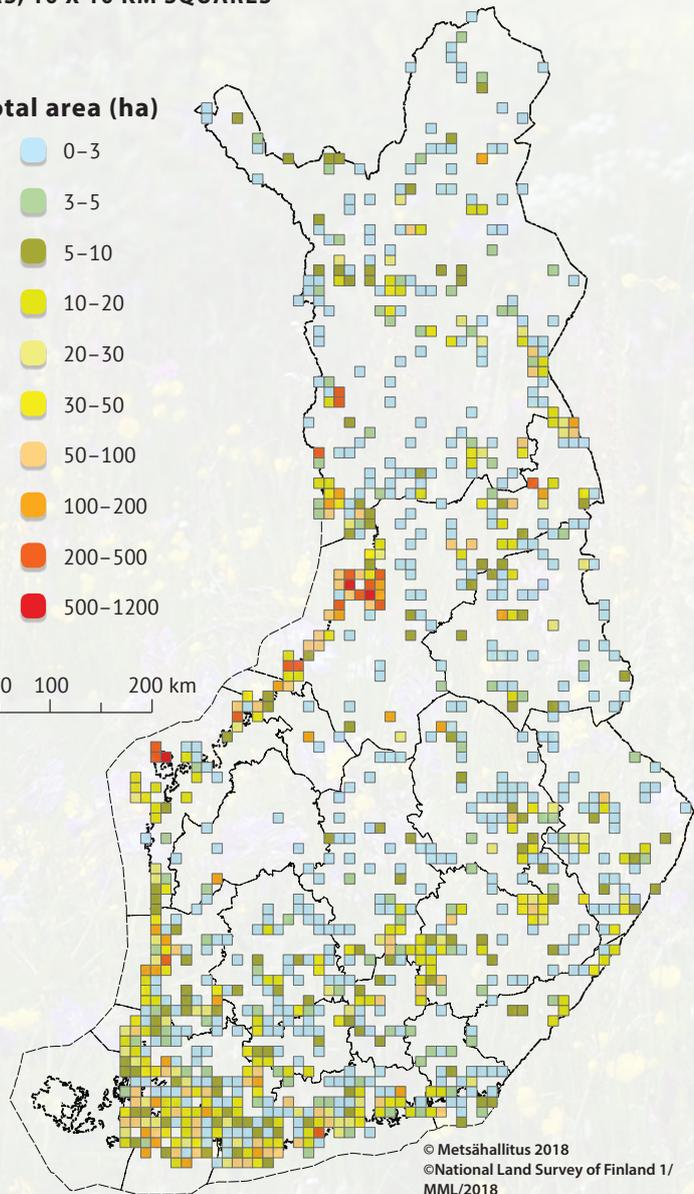
Hotspots are found in southern and southwestern Finland and in coastal areas, where the number of endangered species is also the greatest

LOCATIONS OF TRADITIONAL RURAL BIOTOPES ON METSÄHALLITUS LAND AND IN PRIVATE PROTECTED AREAS, 10 X 10 KM SQUARES

Total area (ha)



0 50 100 200 km



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MML/2018

Source: SAKTI 1 October 2016

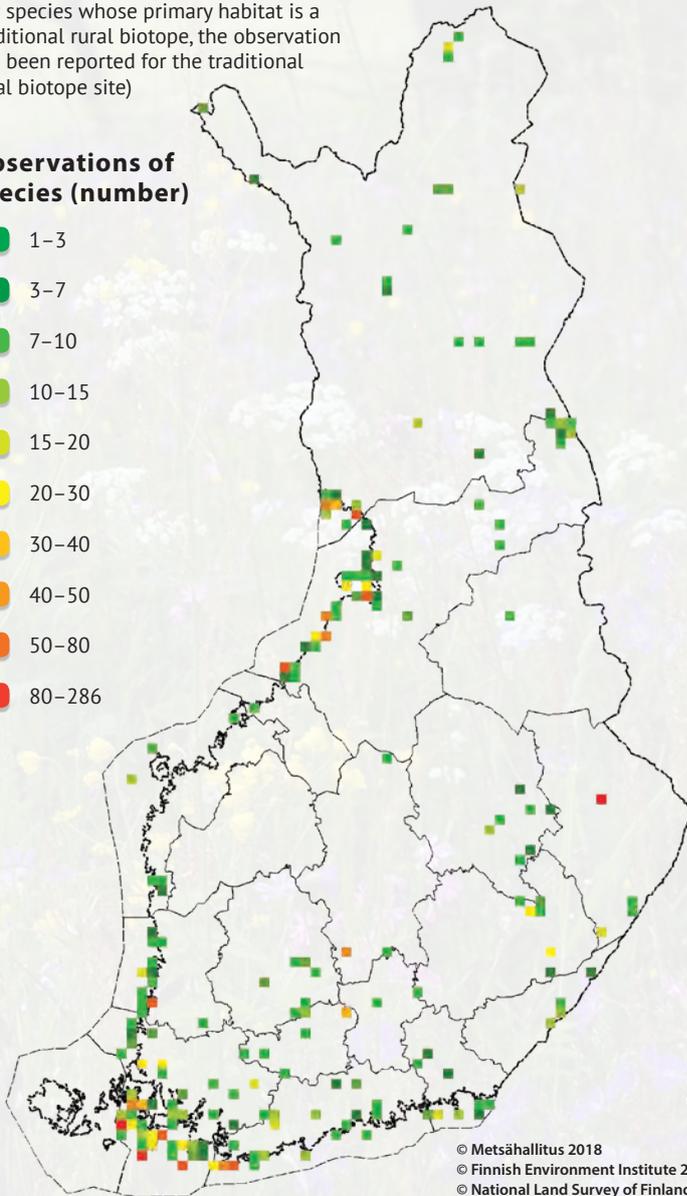


OBSERVATIONS OF ENDANGERED SPECIES (CR, EN, VU) IN 10 X 10 KM SQUARES ON METSÄHALLITUS LAND AND PRIVATE PROTECTED AREAS

(for species whose primary habitat is a traditional rural biotope, the observation has been reported for the traditional rural biotope site)

Observations of species (number)

- 1-3
- 3-7
- 7-10
- 10-15
- 15-20
- 20-30
- 30-40
- 40-50
- 50-80
- 80-286



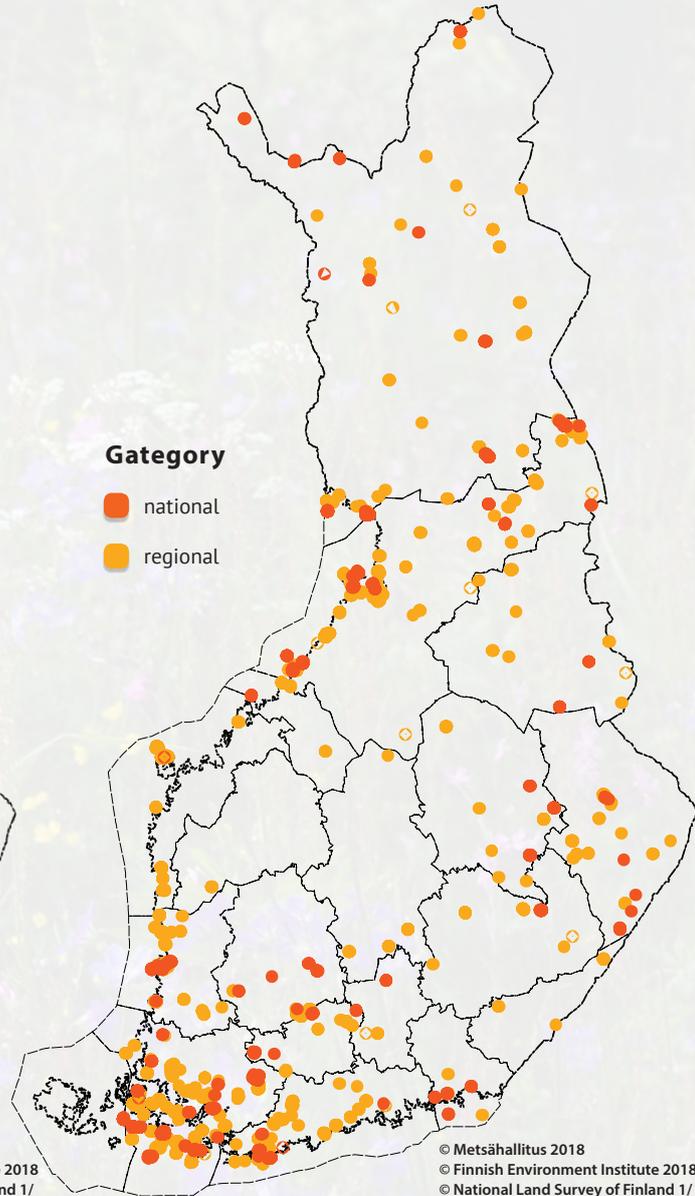
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Source: LajiGIS, observations recorded in the Finnish Environment Institute's species database on 1 October 2016

SITES OF NATIONAL AND REGIONAL VALUE ON METSÄHALLITUS LAND AND IN PRIVATE PROTECTED AREAS

Category

- national
- regional



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Source: SAKTI 1 October 2016

A MOSAIC OF HABITATS

Semi-natural grasslands and natural pastures in Finland are classified into twelve main types and further subtypes. Different meadows with little or no trees are classified based on their moisture levels, location, flooding or peat formation. The classification criteria for wooded types are the density and uses of trees. In most cases, different types occur in the same area with no clear boundaries. Where open areas have become completely overgrown once their traditional use has come to an end, traditional rural biotopes or sites that could be restored are often difficult to identify. The remaining species hint at the area's history, however, and give an indication of its potential for being restored. Each habitat has its typical species, which decline on unmanaged sites. Calcareous sites and soil properties also influence the typical species of each habitat. A traditional rural biotope is always managed as an entity made up from the habitats it contains.

**Without a mosaic of habitats
there can be no biodiversity**

HEATHS

The heaths on the western coast form a relatively well-connected network running from north to south, the management of which will be intensified in protected areas.



Photo: Maija Mussaari

DRY MEADOWS

Particular attention will be focused on managing dry meadows as part of the traditional rural biotope network in protected areas, as they provide habitats for an exceptional number of endangered species. The management of calcareous dry meadows, in particular, can significantly boost their species values.



Photo: Katja Raatikainen

ROCK MEADOWS

Rock meadows are usually managed in protected areas as part of more extensive sites. Rock meadows found on nutrient-rich bedrock, in particular, often feature significant species values.



Photo: Maija Mussaari

MESIC MEADOWS

Mesic meadows in protected areas often have the highest levels of biodiversity and provide habitats for many significant species maintained by grazing and mowing.



Photo: Maija Mussaari

MOIST MEADOWS

Moist meadows in protected areas are managed as part of more extensive sites.



Photo: Jukka Mattlar

SEASHORE MEADOWS

On the coast, seashore meadows form a well-connected network of managed sites, which will be further improved in protected areas, especially to improve habitats for birds. Management of seashore meadows also involves caring for bird wetlands.



Photo: Katja Raatikainen

FRESHWATER MEADOWS

Freshwater meadows are often important areas for birds, and their management in protected areas will also improve the status of bird wetlands.



Photo: Katja Raatikainen

ALLUVIAL MEADOWS

By managing alluvial meadows in protected areas, the network of valuable sites on private land can be supported on the great rivers and their tributaries in the north.



Photo: Mia Vuomajoki

FEN MEADOWS

Further studies are required concerning the ecological significance of managing fen meadows and rich fens. In protected areas, management actions will be carried out in fen meadows with endangered species where necessary. Examples of fen meadows and watered fen meadows will be preserved in the network of protected areas.



Photo: Mia Vuomajoki

POLLARD MEADOWS

Examples of pollard meadows will be preserved as part of the protected area network. Rather than increasing the area of pollard meadows with all of their traditional work phases, new sites will be managed as wooded meadows and pastures.



Photo: Maija Mussaari

GRAZED WOODLANDS

Grazed woodlands in protected areas are grazed mainly as part of site entities consisting of different traditional rural habitat types and to manage white-backed woodpecker habitats. Examples of slash-and-burn farming and the stages of areas created by this practice will be preserved. Old forests used for slash-and-burn farming with valuable species will be managed as grazed woodlands.



Photo: Katja Raatikainen

WOODED PASTURES

Wooded pastures often are species-rich and feature valuable trees. Rare wooded pastures dominated by hardwood trees are particularly valuable. In wooded pastures, particular attention will be paid to a representative tree structure and continued availability of decayed wood, especially on sites with endangered species. Wooded pastures established on old sites created by slash-and-burn farming practices often also are habitats favoured by the white-backed woodpecker.

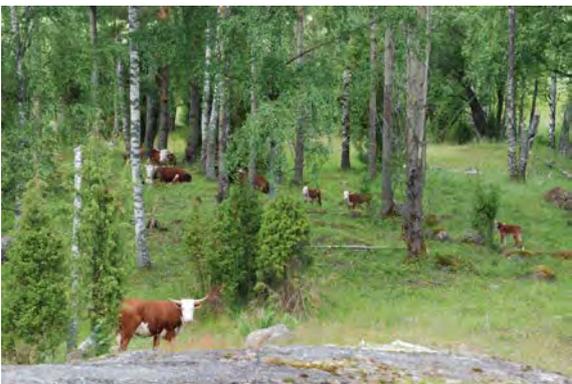


Photo: Katja Raatikainen

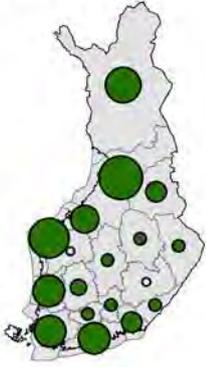
HERITAGE HOMESTEADS AND REINDEER HERDING STRUCTURES

While these are not a specific habitat type, they are a separate category for inventory purposes. Traditional homesteads with valuable species and cultural heritage in protected areas will be managed by mowing or grazing. Reindeer roundup structures will mainly be managed as examples of constructions used in reindeer herding rather than because of their traditional rural biotope values.

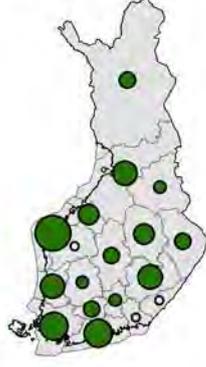


Photo: Mia Vuomajoki

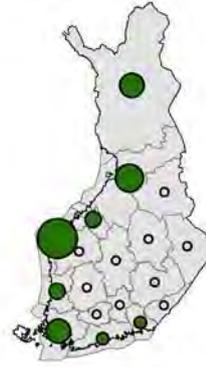
A) Moist meadows



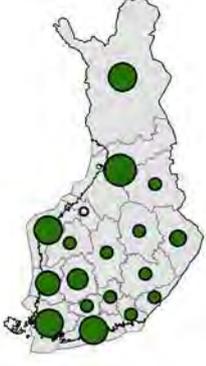
B) Grazed woodlands



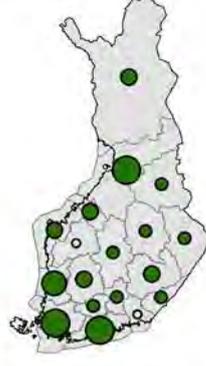
C) Heaths



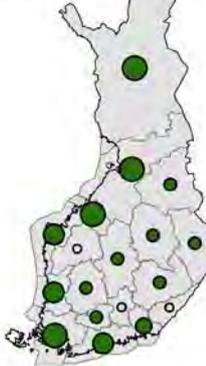
D) Mesic meadows



E) Wooded pastures



F) Dry meadows



G) Traditional homesteads



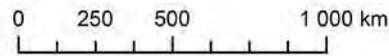
H) Current slash-and-burn areas



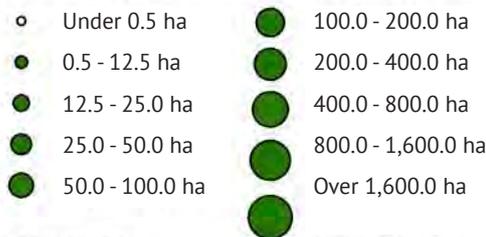
I) Old reindeer herding sites



J) Pollard meadows



Habitat area (ha) by region



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ASSESSMENT OF HABITAT REPRESENTATIVENESS

When determining the quality, or representativeness, of individual habitats in traditional rural biotopes, a habitat's status is examined from three different viewpoints. The aspects to be examined as part of each viewpoint vary between the habitats.

A. **STRUCTURE** of trees, shrubs and vegetation. For example the share of representative meadow vegetation, variation in the age structure and species of trees, openness or height of vegetation.

B. **SPECIES**. For example the number of notable and demanding plant species that are descriptive of the habitat, or the share of alien species or nitrophilous plants.

C. **ACTION**, or management. For example grazing pressure, mowing efficiency.

Based on the overall assessment, the most suitable representativeness category is selected on the four-step grade of EXCELLENT-GOOD-SIGNIFICANT-COLLAPSED.

*The definitions of habitat representativeness were prepared by Finnish Expert Group for Semi-natural Grasslands as part of efforts to assess the status of endangered habitats.

The proportion of traditional rural biotope types as inventory categories based on the habitat inventory on Metsähallitus land and in private protected areas. In this classification, moist meadows include seashore meadows, freshwater meadows and other moist meadows. Source: Metsähallitus 2014

A WEALTH OF REGIONAL FEATURES

1

SOUTHWEST FINLAND

Particular habitats: all calcareous types, wooded pastures with hardwood trees, heaths, dry meadows

Plenty of traditional rural biotopes remain, the most species-rich and valuable sites in the country

Many endangered species

Many unmanaged valuable traditional rural biotopes, especially in private protected areas

Good supply of farmers interested in grazing

Many of the sites are found in the archipelago, which sets challenges to transport and management arrangements

Finland's most extensive connected set of traditional rural biotopes is found in Rekijokilaakso

Pioneering work has continued for a long period, strong cooperation networks

Voluntary work has long traditions in the Archipelago Sea

Deep layers of cultural history



Photo: Maija Mussaari

2

OSTROBOTHNIAN COAST

Particular habitats: Seashore meadows and salt patches, heaths, wooded pastures of primary succession coasts, grazed woodlands of primary succession coasts, dwarf shrub dry meadows in the region's northern part

The largest seashore meadow areas in Finland are important bird sites, and in North Ostrobothnia, they feature many species referred to in the Birds Directive

Good supply of farmers interested in grazing large sites, in many places the demand exceeds the available pastures

Strong regional cooperation among actors

Many sites on islands



Photo: Jari Peltomäki

3

UUSIMAA—KYMENLAAKSO

Particular habitats: seashore meadows, calcareous habitats

Plenty of sites, many private protected areas

A good share of seashore meadows are under management

A relatively good supply of farmers interested in grazing, the number of grazing animals is increasing

The influence of the Helsinki region increases stakeholder cooperation, several important visitor sites

Many of the sites are found in the archipelago, which sets challenges to transport and management arrangements

Land ownership is fragmented, which hampers actions and formation of larger entities to be managed



Photo: Päivi Leikas

2

5

1

4

LAPLAND

Particular habitats: homesteads, dwarf shrub dry meadows, alluvial meadows

Special features of the Sámi area

Nature values together with the cultural history combine into outstanding sites

Sites are small and remote

Farmers interested in grazing are often difficult to find, and mowing thus plays an important role

Distances are long, which is a challenge to arranging management

Extensive state-owned land areas, many sites on land owned by Forestry Ltd



Photo: Mia Vuomajoki

6

KAINUU – KOILLISMAA

Particular habitats: alluvial meadows in Koillismaa, wooded pastures with grey alders on hill slopes, rich fens

Traditional management forms, including woodland grazing, have continued longer than elsewhere

Extensive state-owned land areas, many sites on land owned by Forestry Ltd

The sites are small and scattered around the region

Few farmers interested in grazing are available, and mowing is emphasised in the management

Volunteer shepherd activities have been developed for remote sites



Photo: Jukka Mattlar

4

6

7

3

5

CENTRAL FINLAND

Particular habitats: grazed woodlands and white-backed woodpecker forests

Most sites in protected areas are located on state-owned land, which makes their management straightforward

The sites are often small and remote, farmers interested in grazing are difficult to find

Volunteer shepherd activities have been developed for remote sites

Many important white-backed woodpecker habitats which can be managed by grazing

Management work is partly carried out by prisoners

Heritage farms Kovero and Korteniemi

Important ancient monument sites are found in Häme



Photo: Katja Raatikainen

7

EASTERN FINLAND

Particular habitats: All slash-and-burn habitats (especially meadows in Koli, slash-and-burn forests), grazed woodlands and white-backed woodpecker forests, calcareous meadows

The most valuable meadows generated as a result of slash-and-burn farming practices have been kept mowed continuously until today

The continuity of slash-and-burn areas is maintained in Koli, Telkkämäki and Linnansaari.

Slash-and-burn heritage farm of Telkkämäki

Volunteer activities have a strong role in management, regional actors participate with enthusiasm

Volunteer shepherd activities started in Koli National Park

The sites are often small and remote, farmers interested in grazing are difficult to find



Photo: Katja Raatikainen

AREA UNDER MANAGEMENT

DEVELOPMENT OF AREA UNDER MANAGEMENT 2004–2015



Source: Kemppainen & Lehtomaa 2009, Metsähallitus 2016, Agency for Rural Affairs 2014, 2016

Brown moor clover (*Trifolium spadiceum*) has become rare as a result of shrinking meadow and headland areas. Photo: Saara Lavi

The area under management on Metsähallitus land and in private protected areas has multiplied over ten years, mainly thanks to the agri-environment payment scheme

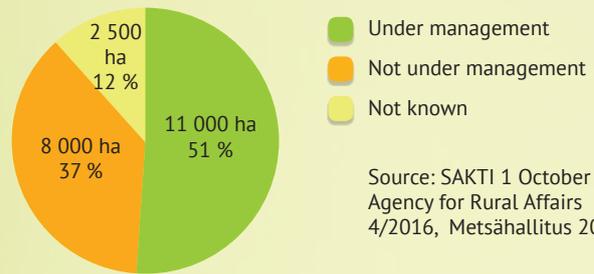
MANY SITES FEATURE ANCIENT MONUMENTS

Many traditional rural biotopes are important ancient monument sites. Their historical layers may go back thousands of years, which is reflected in the landscapes and species of the site, for example as the occurrence of archaeophytes, or species introduced in ancient times. The monuments come in many types regarding both their era and character. The oldest ones date back to 11,000 years, while the most recent sites are from 1917. The sites may be small, for example sacrificial stones. The largest site is the area of Rapola Hill Fort in Valkeakoski, which stretches across approx. 200 hectares and is also a traditional rural biotope site of national importance.

A known ancient monument or an archaeological site is found on 149 traditional rural biotope sites on state-owned land and in private protected areas, or on 4% of the sites in total (the ancient monument is located on the site or no further than within a 5-metre radius from its edge). About one half of the sites with ancient monuments are currently under management. One out of ten traditional rural

About one half of the areas are under management

STATUS OF TRADITIONAL RURAL BIOTOPE MANAGEMENT ON METSÄHALLITUS' LAND AND IN PRIVATE PROTECTED AREAS

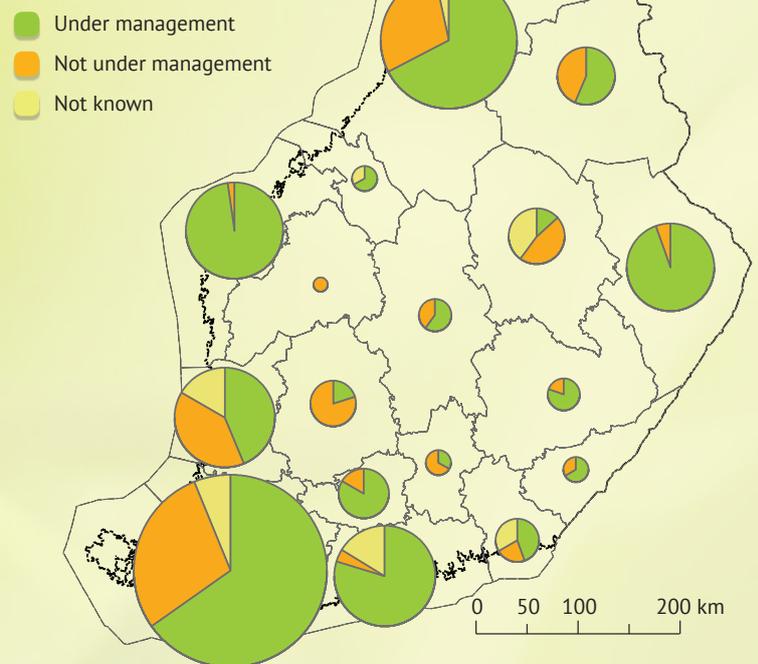


Source: SAKTI 1 October 2016, Agency for Rural Affairs 4/2016, Metsähallitus 2016

Many of the most valuable sites remain unmanaged

MANAGEMENT STATUS ON SITES OF NATIONAL AND REGIONAL VALUE ON METSÄHALLITUS LAND AND IN PRIVATE PROTECTED AREAS

The circle size is proportionate to the number of sites, ranging from 178 sites in Southwest Finland to 1 site in South Ostrobothnia. Source: SAKTI 1 October 2016



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The figures do not include the Åland Islands

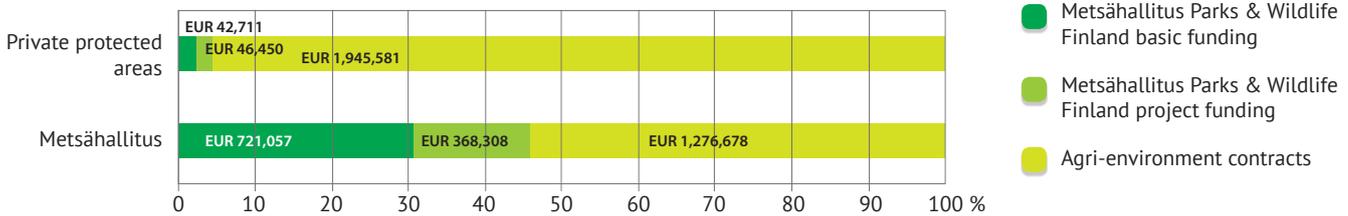
biotopes of national or regional value features an ancient monument. By far the greatest number of ancient monuments co-located with traditional rural biotope sites is found in Southwest Finland. (Source: Register of ancient monuments 2016, SAKTI 1 October 2016.)

Ancient monuments are protected under the Antiquities Act (295/1963). Any interference with, excavation in and covering of ancient monuments are prohibited under the act. The management of these sites is also subject to permission if land use on the site changes, or a form of land use has been discontinued and the site requires initial restoration before being placed under management. Archaeological expertise is often needed to interpret the structures and to select management methods.

For an up-to-date list of ancient monuments and their management register, see the cultural environment register portal on the National Board of Antiquities' website at <http://kulttuuriymparisto.nba.fi>

CURRENT FUNDING

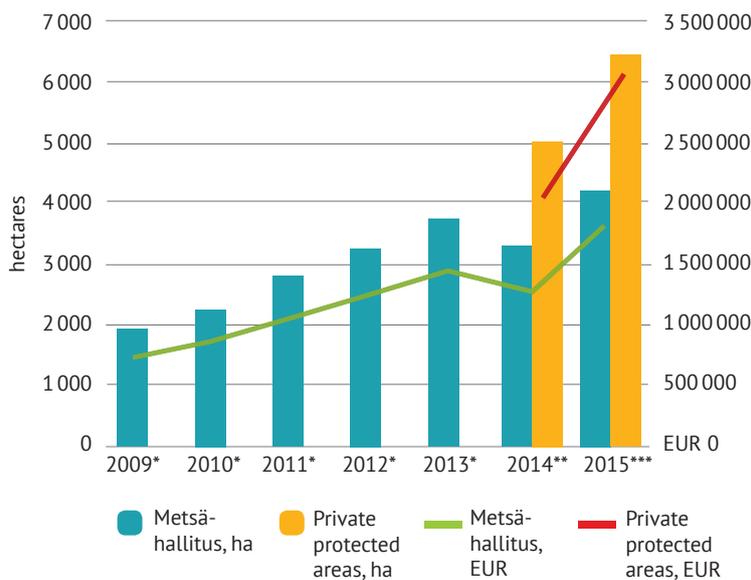
CO-FINANCING OF MANAGEMENT 2014



The figures do not include the resources channelled to the management of private protected areas by the ELY Centres or voluntary work. Funding under agri-environment contracts was calculated based on an average payment of EUR 385/ha. Source: Metsähallitus 2014, Agency for Rural Affairs 4/2014.

Management of protected areas relies strongly on agri-environment contracts

AREA COVERED BY AGRI-ENVIRONMENT CONTRACTS (HA) AND FINANCING CHANNELLED THROUGH THE CONTRACTS (EUR) ON METSÄHALLITUS' LAND AND IN PRIVATE PROTECTED AREAS



* Estimate of areas eligible for agri-environment contracts based on areas covered by leases. The calculations are based on average agri-environment contracts of EUR 385/ha. Source: Metsähallitus' annual reporting.

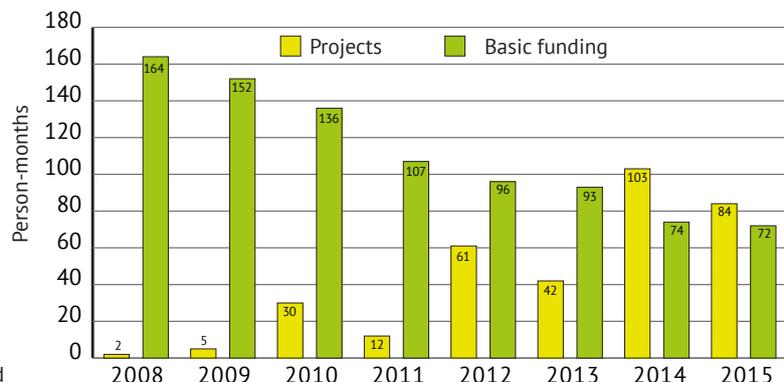
** The area under valid agri-environment contracts. The calculations are based on an average of EUR 385/ha. Source: Agency for Rural Affairs 4/2014.

*** Valid agri-environment contracts. Agri-environment payment rate of EUR 450/ha for ordinary sites and EUR 600/ha for sites of national and regional value have been used in the calculation. The division of value categories was estimated based on traditional rural biotope site data. Source: Agency for Rural Affairs 4/2016, SAKTI 1 October 2016

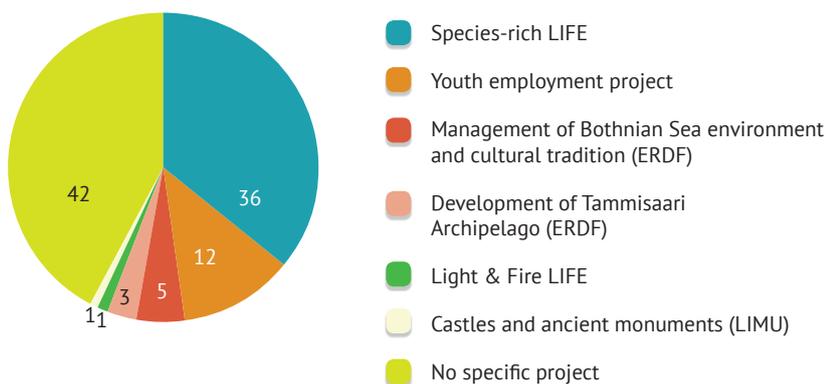
As the volume of resources channelled through agri-environment contracts increases, work guidance becomes more important than ever

Source: Metsähallitus Time use monitoring of Parks & Wildlife Finland

DIVISION OF TRADITIONAL RURAL BIOTOPE WORK IN METSÄHALLITUS



DIVISION OF TRADITIONAL RURAL BIOTOPE WORK IN METSÄHALLITUS' PROJECTS IN 2014 (PERSON-MONTHS)



Source: Time use monitoring of Metsähallitus

The share of project work carried out by Metsähallitus has increased strongly in recent years, for example due to large EU-funded LIFE projects

CAN CONTINUITY OF MANAGEMENT BE GUARANTEED BY THE AUTHORITIES?

As the management is mainly financed through EU funding for agriculture, its continuity on a large scale cannot be fully guaranteed. Traditional rural biotope management is participatory conservation work in which the local community makes a considerable input in the preservation of biodiversity. If the agri-environment payment scheme is dropped, this will cause problems, and the losers will include not only farmers but also nature. In forthcoming EU programming periods, Metsähallitus together with other actors will strive to exert influence to ensure that the payments for traditional rural biotope management will be preserved at sufficient levels.

REGIONAL ELY CENTRES PARTICIPATE IN MANAGING TRADITIONAL RURAL BIOTOPES IN PROTECTED AREAS

The Environment and natural resources divisions at the ELY Centres, and the environment centres that preceded them, have played an important part in the guidance and practical implementation of management in private protected areas. The ELY Centres' role in ecological management tasks in conservation areas has declined, and the responsibility has been shifted to Metsähallitus Parks & Wildlife Finland. The ELY Centres are in charge of broad guidelines, master planning and public administration tasks related to sites in private protected areas. While new sites to be placed under management are prepared by Metsähallitus together with the landowners, existing managed sites are going through a transition. Separate resources have not been allocated for management or guidance related to private protected areas.

The Environment and natural resources divisions at many ELY Centres continue to participate in the practical management of private protected areas with considerable inputs of work and funding. Many ELY Centres annually spend approx. EUR 10,000– 20,000 on preserving habitats and endangered species in protected areas. The ELY Centres' Environment and natural resources divisions direct the management of these sites by means of site visits and statements in the context of the agri-environment contracts and through inventories of traditional rural biotopes. The ELY Centres' Business and industry divisions grant payments to farmers under the agri-environment payment scheme, supervise contract fulfilment and thus direct the management measures.

These resources channelled by the ELY Centres to the management of traditional rural biotopes in protected areas were not included in this Metsähallitus agenda.

SITE SELECTION GUIDED BY NATIONAL OBJECTIVES

PLANNING GUIDED BY NATIONAL OBJECTIVES

The types of sites that are selected for management are determined by the national objectives of traditional rural biotope management together with the policies of Metsähallitus agenda on traditional rural biotope management. When the situation is examined at the national level, this also helps to identify regional concentrations of sites and nature values as well as their management status, which supports the geographic targeting of the management actions.

To underpin the work on the agenda, an analysis of decisions on the geographic targeting of traditional rural biotope management was run using the Zonation software. Based on known habitats and occurrences of endangered plants, the map produced as the result (see next page) shows where site concentrations of significant ecological value are found on the national scale. Together with the maps describing the locations of valuable sites in protected areas and endangered species (see under Areas on the map), we can pinpoint the geographic areas at which there is a particular



need to target new management actions. The national analysis reveals that the most obvious large concentration of these biotopes is found in Southwest Finland, where the highest number of valuable sites is not under management. Another major concentration is found in North Ostrobothnia. In this region, managed seashore meadows already add up to a relatively dense site network, thus reducing the need to put new sites under management. A national examination of the traditional rural biotope site network and its management status should be repeated during this agenda period, as more information is gathered

Site selection is based on national objectives

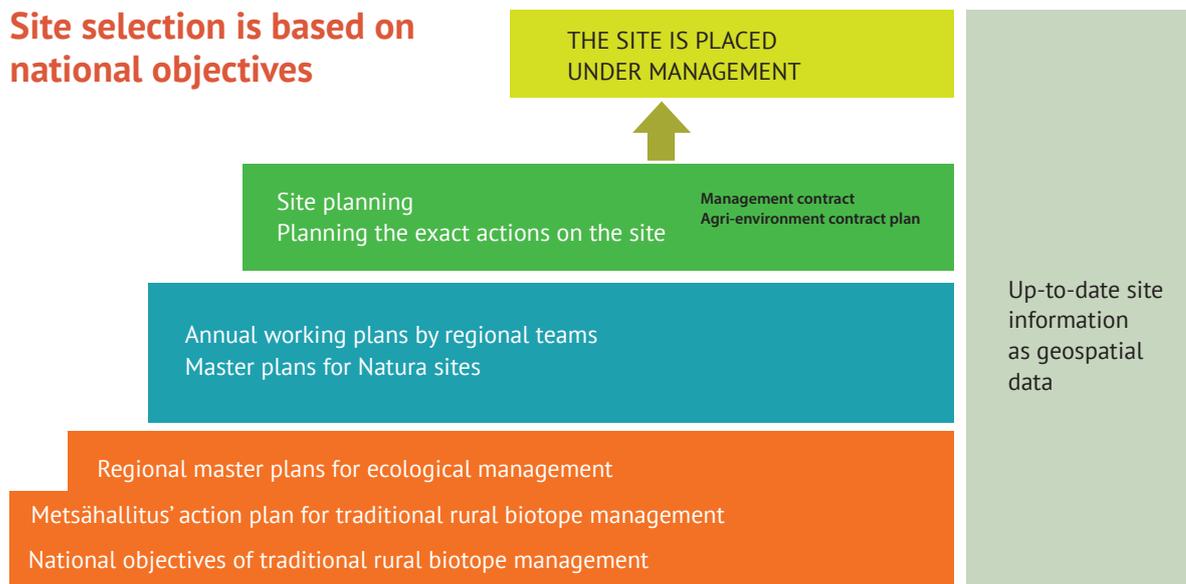




Photo: Katja Raatikainen

IS ALL THIS PLANNING REALLY NECESSARY?

Well planned is half done. Systematic selection of managed sites, high-quality planning of actions and clear instructions prepared for work sites help achieve the targeted outcomes and reach site-specific, regional or national goals. All stages and levels of planning must improve the status of the sites and species and promote the implementation of management. In different plans, the purpose of the planning and its links to practical management, site prioritisation and monitoring must always be kept in mind.

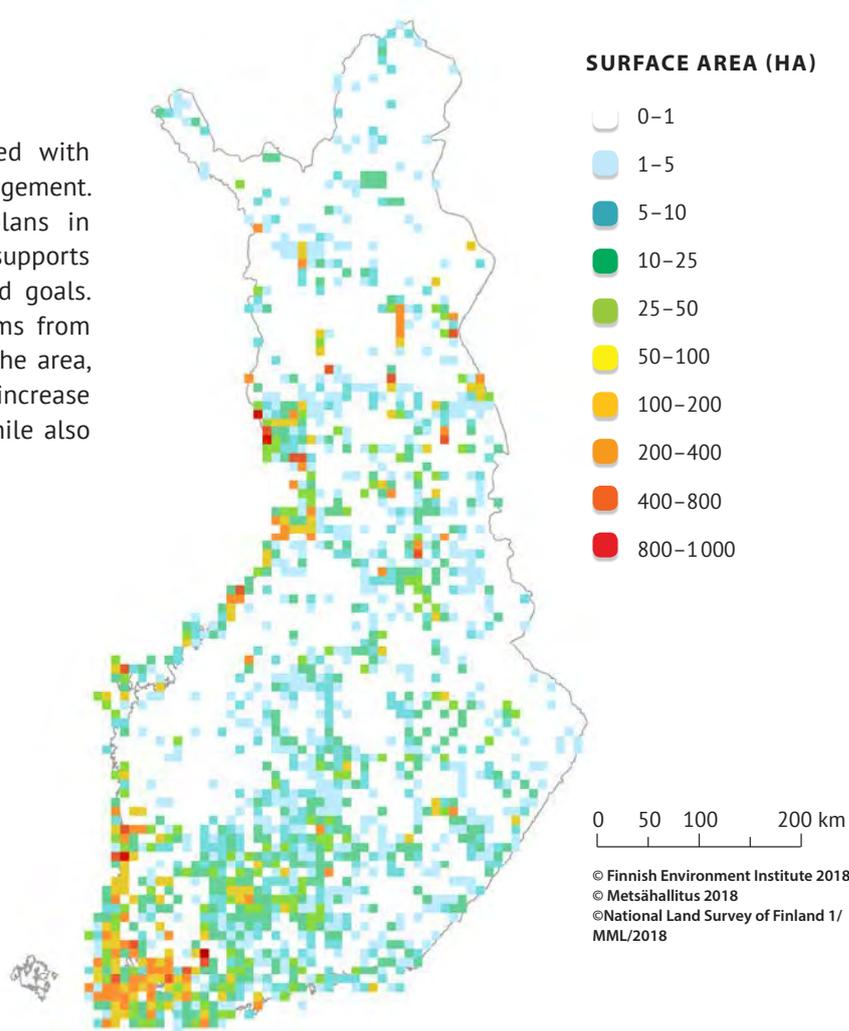
when progress is made with inventories and management.

REGIONAL MASTER PLANS

The national policies are complemented with regional master plans for ecological management. The preparation of regional master plans in geographic areas with key nature values supports the reconciliation of different values and goals. The need for a master plan usually stems from the endangered habitats and species of the area, in which case an effort will be made to increase the area of habitats suitable for them while also

The strongest concentration of values is found in Southwest Finland

A Zonation software analysis of national traditional rural biotope data, including all inventoried sites and sites in protected areas. The analysis was based on known habitats as well as occurrences of both endangered and near threatened traditional rural biotope plant species. Significant concentrations of biotope values can be seen on the map illustrating the results (10 x 10 km squares). The colours describe the size of prioritised areas inside the square in hectares. Source: Raatikainen K.J., Mussaari, M., Raatikainen, K. M. & Halme P. 2017: Systematic targeting of management actions as a tool to enhance conservation of traditional rural biotopes. *Biological Conservation* 207: 90–99.



accounting for other values. The master plan addresses the way the habitats are connected as well as the perspective of practical actions, striving to form entities that can be managed practically. Master planning can help reconcile goals that may even appear conflicting, especially in areas with many overlapping values. A good example of regional master planning is the preparation of a master plan for herb-rich forests and traditional rural biotopes in key areas with herb-rich forest and traditional rural biotope values. The conclusions of regional master plans can be incorporated in master plans for Natura 2000 sites, or their plans for management and use. Master plans for ecological management have been piloted in the Bothnian Sea National Park as well as in the Archipelago Sea.

Particular needs for regional master plans for ecological management emerge in areas with many traditional rural biotope sites of national and regional value as well as many endangered species needing urgent protection. A number of site entities in Southwest Finland are an example of this. With these concentrations of multiple values, the existing network of managed sites will be complemented by restoring not only the most valuable sites but also other restorable sites. In regional master plans, management goals or methods for individual sites can be specified as part of a larger whole. An example of this is maintaining the continuity of aspens: if forests with aspens of varying ages are well represented in the network of protected areas, there is no need to save young aspens in meadows when managing individual sites with semi-natural grasslands and natural pastures. On the other hand, if the network of protected sites in the area does not contain sufficient numbers of aspens, which are a precondition for the preservation of endangered species, maintaining the continuity of aspens may be addressed when restoring the traditional rural

biotope site.

SITE SELECTION AT LOCAL LEVEL

The selection of management sites is directed by national priorities and goals as well as those determined in the regional master plan. This results in well-organized site selection. Decisions on the selection of managed sites in protected areas at the local level are made by Metsähallitus' regional teams. Selections are made on a continuous basis as part of the teams' annual operative planning. The selection of sites included in the planning and management is influenced by the resources available for the teams, for example on-going projects. Sites selected for management on ecological grounds strengthen the site network, safeguarding traditional rural biotope values over the long term. In a strong site network, species can survive regardless of changes in their environment. The centralisation of management actions is also cost-effective in practical terms.

The action plan produced for a site or a site entity specifies the goals of management by habitat patch, determines the most suitable methods, and assesses the impacts of management. Detail is added to the action plan as necessary, for example on the basis of the results of monitoring endangered species, as ancient monuments are discovered, or when recreational use is being planned in the area. In the agreement on rights of use or the management contract for the area concluded with the party managing the site, more detail is added to the actions and division of responsibilities set out in the action plan. The action plan is complemented by a site plan with specific instructions for each party carrying out management actions and for each action, together with accurate cost estimates.

Site selection is based on national objectives

SUPPORTED BY UP-TO-DATE SITE INFORMATION

Up-to-date site information prepares the ground for the practical work aiming to reach the national and regional goals. Site information allows the regional teams to pick the most urgent management sites and incorporate them in the operative planning for the next year or, for instance, identify the locations and management statuses of the most valuable site entities for which the team is responsible. The sites can also be examined in relation to other habitats, as well as

habitats and species found in sections surrounding protected areas.

In connection with the preparation of this Metsähallitus agenda, a data set on traditional rural biotope sites in protected areas was collected, and a prioritisation of sites was produced using a geospatial information system. The assessment criteria used in site prioritisation were information on the sites' value category, management status and urgency. As more detailed inventories, including the value category or

management status, are not available for a significant proportion of sites on Metsähallitus' land and in private protected areas, assessing all sites was not possible. Site information will be updated as

more data is gathered and inventories and monitoring are carried out. Site data can be accessed in the SAKTI information system for planning, site selection and reporting purposes.

CORE COMPONENTS OF TRADITIONAL RURAL BIOTOPE SITE DATA: VALUE CLASSIFICATION, MANAGEMENT STATUS AND URGENCY OF MANAGEMENT

Value classification

National inventory of traditional rural biotopes uses a site-specific value classification system based on the site's value factors and their status. Key value factors are the occurrence of species and habitats characteristic of traditional rural biotopes and their current status. Endangered and rare species and occurrence of the most endangered habitats increase the value. The management status, quality of management and the achievement of management objectives on the sites are also assessed. The history of land use on the site and the continuity of its management affect its value. Uninterrupted traditional management is usually also directly reflected in the site's species and natural values. Landscape values and the site's significance in terms of cultural history also affect its value. Sites of national and regional value are the most valuable ones. Sites that can be restored are accounted for by assessing the potential for recovery of habitat and species values if the site can be placed under management. The value classification

V	Of national value
M+	Of regional value, close to national level
M	Of regional value
M-	Of regional value, close to local level
M*	uninventoried site, expected to meet the criteria for regional value
P+	Of local value, close to regional level
P	Of local value
P-	Of local value, just about meets some criteria for traditional landscape value
P*	uninventoried site, expected to meet the criteria for local value
PT	unknown and uninventoried site which is, however, known to comprise traditional rural biotope
K	capable of restoration (does not meet the criteria for the actual traditional rural biotope value categories but has potential for a higher category if restored)
U	a site which is important for species but not a traditional rural biotope (for example an old field, area under a power line, ski slope, fortification embankment etc.)
E	no traditional rural biotope value (an inventoried site which has no values or whose prior nature values have been completely lost)
L	a site on which some grassland habitat occurs naturally (for example natural seashore meadow)

also helps to locate new environments important for traditional rural biotope species, or natural occurrences of traditional rural biotope habitats.

For more information about the value classification, see the inventory guidelines for traditional landscapes by Kemppainen (2016).

Determination of management status

The management status is assessed using a classification indicating whether the site is under management or not. If the site is under management, an assessment is carried out to determine if the current management is adequate and of a high quality or if it should be improved, for example because of low grazing pressure, clearing needs or unmanaged sections. The management status may also be scrutinised together with the value classification in order to identify the most valuable unmanaged sites.

- under management, good management quality
- under management, but with shortcomings in management quality
- under management, no further information on management quality
- not under management
- not known

Assessment of the urgency of actions

The urgency of actions on specific sites is assessed using a classification that determines the urgency of measures needed to place new sites under management or carrying out complementary actions. An urgent need for management may be based on a decline of significant species or habitat values, or rapid loss of other particularly significant values. The assessment of urgency is influenced by prioritisations set out in the national objectives of traditional rural biotope management and needs emerging in regional master plans. Populations of species needing urgent protection and proposed as a national priority must be placed under management as soon as possible, and in this case, their urgency class is immediately. The assessments of urgency may be examined together with the value category and management status, for example to identify valuable unmanaged sites in the most urgent need for action. In addition, sites on which the management quality must be improved urgently can be pinpointed.

- immediately
- within 5 years
- within 10 years
- not urgent
- no need for change

BUILDING BLOCKS OF SUCCESSFUL MANAGEMENT

PRINCIPLES OF HIGH-QUALITY MANAGEMENT

High-quality management fosters biodiversity, safeguards habitats and species and improves the living conditions of endangered species. Conservation of biodiversity is the most important criterion for traditional rural biotope management. Additionally, management helps to preserve valuable cultural landscapes. Long-term management carried out to a high standard has its own rewards: on well-managed sites, less work will be needed in the future.

- The management must be systematic
- A negative nutrient balance maintains biodiversity
- Biodiversity is promoted by variations in management intensity during the growing season and from year to year
- The different requirements of endangered species are addressed in the management
- Grazing takes place separately from seeded and fertilized pastures



- The animals are not given additional fodder, with the exception of short periods of feeding associated with taming and catching the animals on a temporary basis. When a pasture has been depleted, the animals are moved on.
- Mineral licks and shelter for the animals are placed away from the most valuable areas vulnerable to erosion, such as dry meadows or shores
- Fences and other structures are kept in a good condition
- Grazing pressure is monitored and adjusted if necessary during the grazing season. A great number of denuded patches in the pasture is a sign of overgrazing. High vegetation and numerous patches that the livestock do not like to use indicate undergrazing
- Parcelling the pasture into separate parts and rotational grazing are used to regulate grazing pressure over large areas
- Problem species that the livestock do not like to use are mown
- On sites where mowing is required, the vegetation is mowed at the right time
- Vegetation is mowed using a tool with a cutting blade
- The mowed plant mass is removed and used as fodder, stacked outside the meadow, composted or burnt
- Clearing needs are identified in time, and the area is cleared regularly. The earlier action is taken, the less work will be needed
- Heterogeneous tree species, deciduous trees, variation in tree age structure and species, and decaying wood are noted when clearing. Decayed wood is left in areas where it does not hamper practical management actions
- Landscape values are taken into account when clearing, including views of water bodies and roads and the margins of open and wooded areas
- Piles of cleared materials and waste for burning are placed in areas of lesser value on the site
- Alien species are removed and controlled
- Elements important in terms of cultural history are taken into account in the management actions
- The management is monitored and the yearly management actions are documented in a diary. This information will support the further planning of management

MANAGING SITES WITH ANCIENT MONUMENTS

Traditional rural biotope management actions are rarely harmful for ancient monuments.

Ancient monuments are structures built by humans or created through human work and action that cannot be preserved without the touch of the human hand. However, the special features of an ancient monument should be taken into account when selecting and scaling the management actions.

An effort is made to manage the sites as part of their wider setting in the landscape whenever possible. Permissions for managing ancient monuments are granted by the National Board of Antiquities. An ancient monument sets certain specific restrictions on widely used traditional rural biotope management actions:

- Clearing waste may not be burned at an ancient monument site
 - An exception is made for ancient monuments which were managed by burning (e.g. fortifications) or whose creation was associated with burning (cairns of rocks cleared from areas cultivated by slash-and-burn practices)
- No clearing or mowing waste may be stacked on ancient monuments
 - Mowing waste may not be placed in such relics as earth cellars
- No excavation is allowed
 - Before erecting fence posts, for example, planning and possibly supervision by an archaeologist is required
- Trees and shrubs covering ancient monument structures are primarily removed
 - The work should be carried out carefully and cautiously to avoid breaking the soil surface and the structures
 - In pastures, trees or shrubs may in some cases prevent structures from being damaged or eroded
- Not all grazing animals are suitable for all ancient monument sites
 - Horse trails, for instance, may cause erosion
- Grazing pressure must be monitored
 - While slight overgrazing brings the optimal outcome for an ancient monument, excessive grazing results in erosion
- Ancient monument structures may not be repaired or altered
 - However, some structures may need to be repaired before being maintained by management, with earth fortifications as an example

FACTORS INFLUENCING THE PLANNING AND IMPLEMENTATION OF MANAGEMENT

The main objective in protected areas is high-quality management that helps endangered species and habitats to recover. An optimal outcome depends on the skills and motivation of the site's manager and the availability of adequate guidance for the work. The costs of management are also influenced by many site-specific factors.

The following factors play a key role for the costs of planning and carrying out management actions:

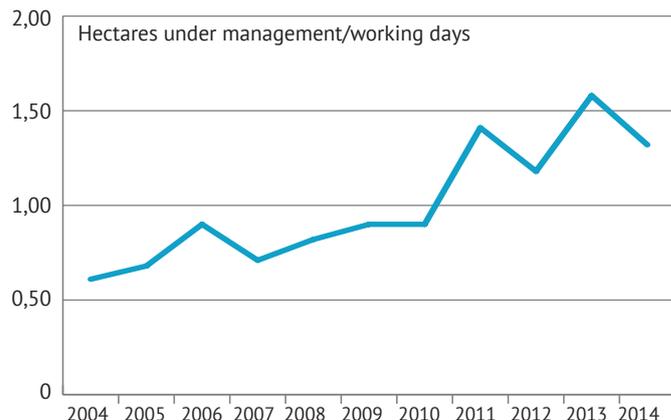
- number of endangered species
- number of endangered habitats
- size of the site
- degree of overgrowth
- needs for recreational use
- ancient monuments
- management techniques to be used
- site location
- accessibility from public roads
- involvement of a private landowner and the number of landowners
- manager's professional skills
- professional skills of Metsähallitus' coordinator and work instructor
- any income from timber

For example, the costs may be worked out as EUR/hectare or EUR/endangered species. A site that is expensive in the light of its per hectare costs may often turn out to be cost-effective when the costs are calculated in terms of the achieved biodiversity and per endangered species. For example, as high-quality management safeguards several endangered species per hectare under management, the costs per species are low. In addition to habitat management, traditional rural biotope management always involves management of species, and on the most valuable

and species-rich sites, management is tailored to the requirements of the species.

The costs and resource efficiency of Metsähallitus Parks & Wildlife Finland are measured as annual total costs and costs per hectare. The number of hectares under management has increased, while the cost per hectare has gone down. In the meantime, it has not been possible to invest in sufficient guidance, and the quality of management has remained poor in many places.

RESOURCE EFFICIENCY OF TRADITIONAL RURAL BIOTOPE MANAGEMENT BY METSÄHALLITUS



Working days in proportion to traditional rural biotope management area on Metsähallitus' land by Parks & Wildlife Finland in 2004–2014. Source: Monitoring of activities and time use by Parks & Wildlife Finland 2014

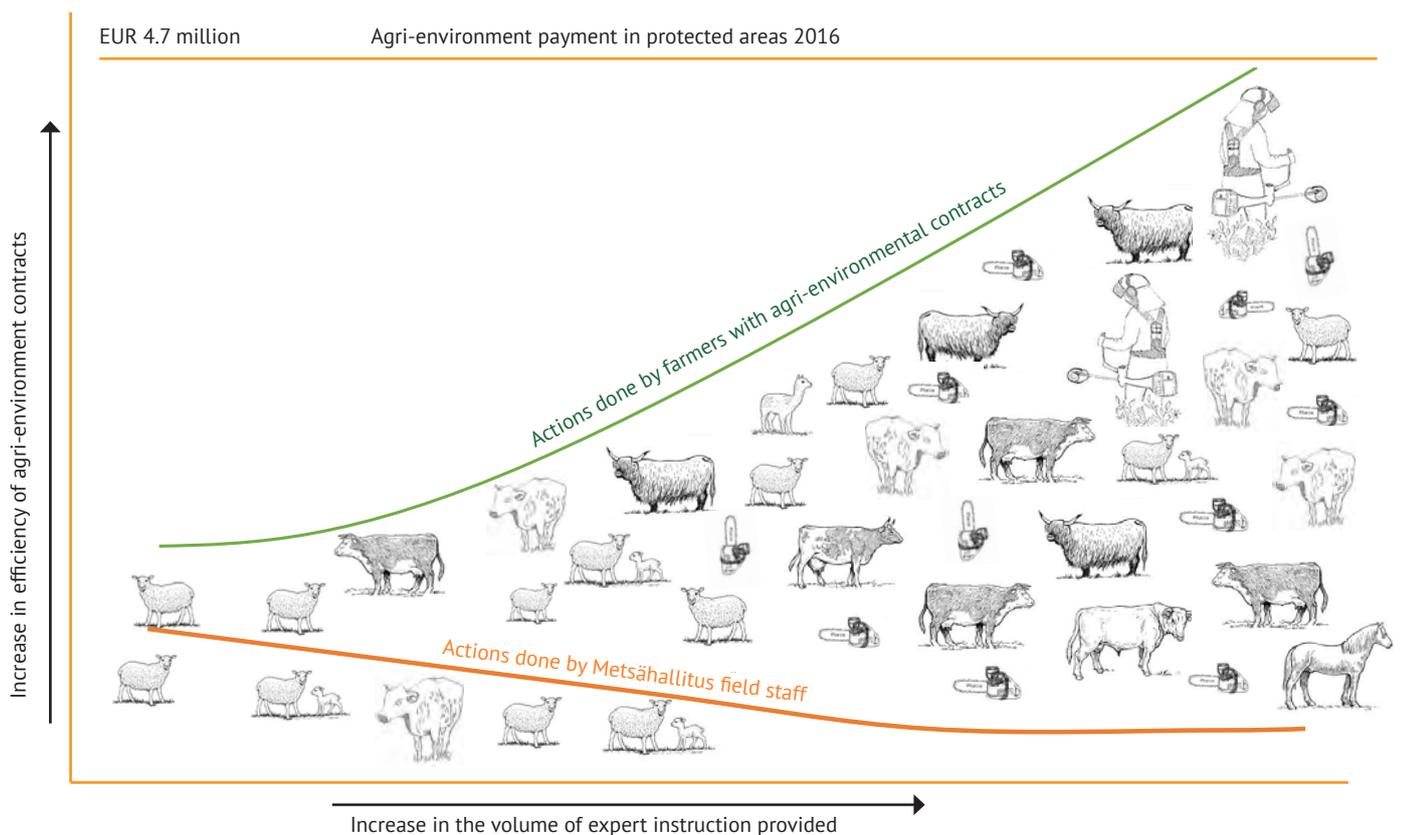
The efficiency of concrete management actions carried out in protected areas under agri-environment contracts has in many cases remained poor due to lack of sufficient guidance

SUFFICIENT INSTRUCTIONS – SUCCESSFUL MANAGEMENT

Work instruction provided for management actions is the most crucial element of Metsähallitus' work on traditional rural biotopes. Without sufficient work instruction delivered with expertise, it is impossible to reach the objectives set for protected areas regarding high-quality management which has an ecological impact and which promotes many different values. The management actions may be carried out by farmers with agri-environment contracts, associations, volunteers, contractors or Metsähallitus' field staff. Timely investments

in work instruction at a managed site mean that the guidance costs will gradually go down.

A system where funding for the management is channelled through the agri-environment contract scheme while work instruction is provided by Metsähallitus is challenging for the person in charge of guidance. In order to reach a good outcome, not only expertise in restoration and management techniques but also knowledge of the agri-environment payment scheme, the basics of livestock farming and regional conditions as



Impacts of work instruction on the volume and quality of work on agri-environment contract sites. As the volume of expert guidance provided by Metsähallitus increases, the impact of management implemented under agri-environment contracts is enhanced, while the need for concrete management actions undertaken by Metsähallitus' field staff is reduced. Drawings: Jari Kostet, Maija Mussaari, Roland Vösa.



Photo: Katja Raatikainen

Well-established cooperation and growing expertise and trust bring significant cost savings when long-term work instruction is provided by permanent Metsähallitus staff members

well as familiarity with the regional cooperation parties and good social skills are necessary. This requires continuous maintenance of know-how and participation in training. As cooperation with a farmer with an agri-environment contract or other manager continues over a longer period, the practices become established, professional skill is acquired, and the costs of work instruction decrease.

Sufficient resources must be set aside to provide high-quality and long-term work instruction. Particular professional skill and experience are required to provide work instruction. As the actors get to know each other at a personal level and more knowledge of the site is acquired, the

cost-effectiveness improves, which is why the guidance should be provided on Metsähallitus budget funding by permanent staff as part of the conservation process or by a field team. Annual working time taken up by the guidance and documentation of continuous management currently varies from eight days for large, hemiboreal, species-rich island sites to two days for the most straightforward sites. On average, providing guidance for management takes 4 days/year/site. As the cooperation and practices become established, the workload is reduced to an average of 3 days/year/site. This is the expected trend in the costs of continuous management until 2025.

MANAGEMENT METHODS

Traditional rural biotope management in protected areas may be divided between the initial restoration and continuous management of the sites. Decisions on the more detailed implementation method and the party carrying out the work are always made on a case-by-case basis.

INITIAL RESTORATION

The most common restoration techniques are the clearing of trees and shrubs including the burning of clearing waste, restoration mowing, or controlled burning. This work also includes fencing pastures. Restoration jobs are mainly carried out by contractors, farmers with an agri-environment contract, and Metsähallitus Parks & Wildlife Finland's field staff. As a rule, clearing and mowing of shore meadows overgrown with reeds in Metsähallitus' projects are carried out as outsourced services. Controlled burning is a demanding action, which is usually carried out under the direct guidance of Metsähallitus.

Farmers with agri-environment contracts carry out restoration clearing, especially in private protected areas but to some extent also on Metsähallitus' land. Clearing work by farmers with agri-environment contracts should and could be increased in the future, but precise guidance is needed for this. Fencing is usually put up by farmers grazing their livestock under a contract. In some cases, Metsähallitus may also build fences on project sites or sites that are particularly significant for such purposes as recreational use. Some restoration work is done by volunteers, including small-scale clearing and, in particular, the collection and disposal of clearing waste. Careful supervision of voluntary work is also necessary.

CONTINUOUS MANAGEMENT

Continuous management refers to annually repeated actions. The principal management method is grazing, which is today used to care for over 95% of the sites under management in protected areas. Grazing is mainly carried out by farmers under an agri-environment contract. When done correctly, grazing is a good management method. Sufficient grazing pressure and its timing, parcelling of the pasture into separate parts and



The Apollo butterfly (*Parnassius apollo*) is an endangered species of open environments, which is today almost exclusively found on patches of open dry meadows on small islands in the outer archipelago. It has been observed that these patches are gradually becoming overgrown with junipers. Photo: Jaakko Ruola

multi-species grazing are the most important and cost-effective ways of improving the management quality. Insufficient grazing pressure does little to promote biodiversity. Grazing by sheep without adequate pressure may even result in a decline of vegetation and endangered species. Maintaining fences is part of grazing, the responsibility for which is assumed by the livestock owner.

Mowing takes place on sites where high-quality grazing is not possible, or where mowing is a more cost-effective method. Mowing is also used on valuable sites which have been managed by mowing for an extended continuous period and where mowing is required to preserve ecological values. Mowing may be outsourced to farmers with agri-environment contracts or other managers working under a contract, which is almost always the most cost-effective method, or by volunteers and Metsähallitus field staff.

Continuous management measures also include maintenance clearing, the need for which depends on the quality of management, especially the outcome of grazing. Maintenance clearing is labour-intensive and results in high costs on individual sites. Consequently, it is important to ensure that the need for maintenance clearing is eliminated by good grazing pressure or mowing. To achieve this, the manager should constantly monitor the site's status. Maintenance clearing is usually included in the duties of a contracted manager.



The white-backed woodpecker (*Dendrocopos leucotos*) is at home in light, open forests dominated by deciduous trees with plenty of decaying wood. It benefits from forest grazing. Old slash-and-burn forests are ideal habitats for the woodpecker. Photo: Antti Below

Work packages for mowing contractors or associations – a solution for managing small sites with no takers for grazing?

HISTORICAL WORKING METHODS

The history of land use in semi-natural grasslands and natural pastures is associated with many old working methods. Of these, the management of pollard meadows and fen meadows as well as slashing and burning require extensive personnel resources. For this reason, only examples of these practices are preserved in the conservation area network, and more cost-effective modern methods are used to maintain the nature values and other values of the sites.

Examples of mowing in fen meadows and damming, or temporarily raising the water level in a fen meadow in order to encourage fodder production, will be preserved in Lapland, Koillismaa and Kainuu. Examples of traditional slashing and burning will be preserved in Eastern Finland in the National Parks of Koli and Linnansaari and in Telkkämäki. Pollarding, or cutting tree shoots and drying them for winter feed, as well as other traditional management methods of pollard meadows, are kept up in the managed pollard meadows of the Archipelago National Park.

METHODS THAT ALSO BENEFIT OTHER HABITATS AND SPECIES

The methods used to manage traditional rural biotopes can be applied to the management of different species dependent on semi-open or open environments. By combining traditional rural biotope management with managing white-backed woodpecker habitat, dry sun-exposed environments or bird wetlands, the biodiversity benefits may be multiplied in proportion

to the costs.

The living conditions of endangered species dependent on decayed wood can be improved in connection with traditional rural biotope management. Decaying wood of deciduous trees is always preserved on all sites. On wooded sites, action is taken to increase the availability of decaying deciduous wood. Only in meadows managed by mowing, trees lying on the ground that hamper the work are removed or placed on the edges of the area.

Many naturally open environments may need management and benefit from traditional rural biotope management methods. These include natural heaths and seashore meadows in the outer archipelago, nutrient-rich rocks and rich fens. The habitat status on naturally open sites and in areas where significant habitats and species are found is monitored, and management actions are taken as necessary to preserve and restore open conditions. Natural areas occurring in connection with traditional rural biotope sites may be incorporated in pastures if this is justified in terms of their species.

TESTING NEW MANAGEMENT TECHNIQUES ATTRACTS INTEREST

Testing various new management techniques or machines in practice is important for developing the management of traditional rural biotopes and improving its cost-effectiveness. The following are examples of techniques that could provide means for traditional rural biotope management and deliver high quality while keeping the costs down:

- extending the grazing period
- more efficient parcelling of pastures into separate parts
- year-round grazing
- game animals as grazers
- management and contracting packages for small sites
- acquiring and protecting fellings in calcareous areas and in the vicinity of valuable sites and grazing them
- restoration of deteriorated areas near valuable sites in significant site concentrations
- new forms of voluntary work
- translocations of endangered and demanding species
- new types of equipment
- possibilities for mechanical raking

SELECTION OF MANAGER

GRAZING AND MOWING UNDER CONTRACT

Metsähallitus Parks & Wildlife Finland concludes right of use contracts with livestock farmers regarding its traditional rural biotope sites, and management by mowing is also possible. The farmer managing the site under a contract may apply to the agri-environment payment scheme to cover the management costs. Agri-environment contracts are available for farmers, registered associations and today also private individuals. In most cases, the contract period with Metsähallitus is the same as the agri-environment contract period, or five years, but contracts of a shorter or longer duration are also possible. In private protected areas, grazing and other measures are agreed upon with the landowner. Leased lands in private protected areas are also eligible for agri-environment payments.

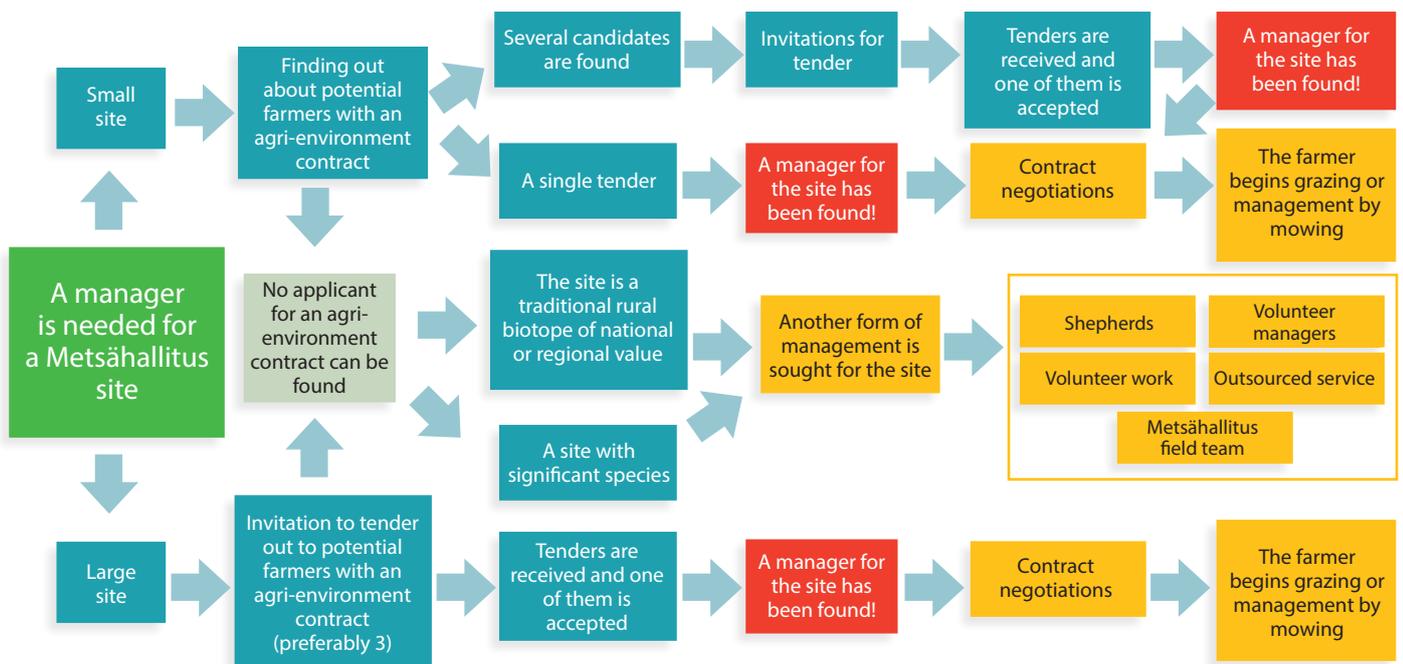
The initial restoration of the area, including thinning out trees and fencing the area, is subject to agreement with Metsähallitus and, in private areas, also the landowner. As a rule, the farmer grazing their livestock in the area under a contract is responsible for building and repairing fences, including any special fences

used for parcelling the pasture into separate parts to regulate grazing pressure or to safeguard endangered species. Maintenance clearing is one of the tasks belonging to the contracted manager, and its details are subject to agreement on each individual site. The agreed division of responsibilities for site management is set down in the contract and any application for an agri-environment contract. Managers are expected to comply with management plans prepared for the protected area. A contracted manager who applies for an agri-environment contract also undertakes to comply with the terms of this contract and the plan prepared in connection with it.

Grazing or mowing carried out by a contracted manager in protected areas is cost-effective if the management quality is sufficiently good and, for example, the grazing pressure has been adjusted correctly for the site.

METSÄHALLITUS' FIELD WORK AND WORK PERFORMED BY LANDOWNERS IN PRIVATE PROTECTED AREAS

Metsähallitus field staff participate in the management of the most valuable and demanding



Simplified graph illustrating the selection of a manager to take charge of continuous management on a Metsähallitus Parks & Wildlife Finland site. An effort is initially made to find a farmer with an agri-environment contract for the site. If this is not possible, other potential managers are investigated.



sites and in specific work phases, and look after the sites placed under management where no contracted manager can be found. Among other things, the field staff participate in restoration clearing, mowing and controlled burning. They may also assist a manager if necessary, for example by providing transport equipment. In particular, the long experience and know-how of the field staff are invaluable in the management of diverse and inaccessible sites in the hemiboreal Archipelago Sea and Lapland. The field staff also play an important role in preserving historical working methods and passing on know-how. The sites managed by the field staff are often cared for as

entities that combine the maintenance of cultural heritage and structures for recreational use with traditional rural biotope management.

Management carried out by others besides contracted managers is cost-effective if its quality is adequate and its costs are lower than the costs of work performed by Metsähallitus' field staff.

In private protected areas management actions may be carried out by landowners themselves if the regulations of the protected area allow management and an approved management plan exists for it. The landowners may carry out both initial restoration and actions related to continuous management themselves.

OUTSOURCED SERVICES

Metsähallitus mainly uses outsourced services for clearing trees on sites requiring initial restoration. Services are outsourced under any existing framework agreements. In some projects, other services may also be outsourced, including fencing. Mowing on the most valuable sites may in rare cases be outsourced if no other manager can be found. Should they wish, landowners in private protected areas may use a contractor to carry out management actions as long as this is permitted under the protection regulations and



Crushing and shredding of reeds facilitate the recovery of species on shore meadows.
Photo: Katja Raatikainen



Photo: Maija Mussaari

the management plan.

The feasibility of using a contractor depends on the contractor's professional skills. Professional skills are particularly important in the initial restoration of valuable sites with a high level of biodiversity and many endangered species. The use of an unskilled contractor may result in fateful losses of species, or directing and supervising the work may take up unreasonable amounts of the work instructor's time. Using Metsähallitus' skilled ecological managers and field staff often is a more cost-effective alternative than contractors on valuable sites. On sites of lower value where the work to be carried out is straightforward,

using contractors is safe. Even in this case, the contractor must have sufficient professional skills to complete the actions to a high standard. At the most valuable sites, the degree of overgrowth is the most crucial factor determining the cost of initial restoration, as removing trees requires precision forestry work. On less valuable sites, the income from trees to be removed mechanically often covers some of the restoration costs.

SITES MANAGED BY VOLUNTEERS

Volunteer shepherd activities have been developed for semi-natural grassland and

Photo: Päivi Leikas



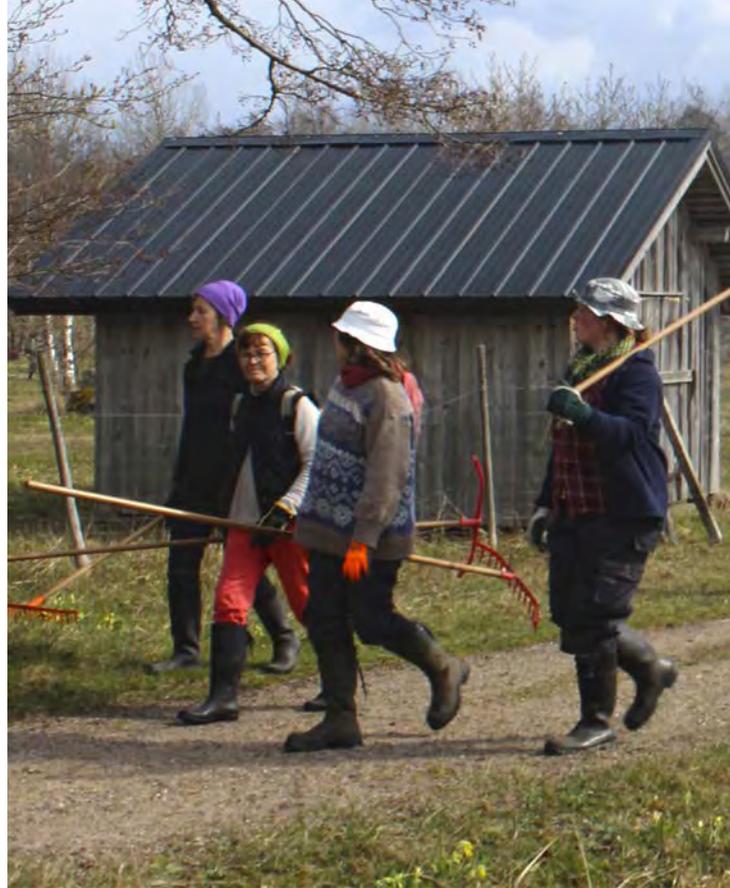
PRINCIPLES OF SELECTING FARMERS FOR PROTECTED AREAS

Metsähallitus announces its sites suitable for grazing or mowing on the Grazing Bank web service (Laidunpankki.fi) web service or sends an invitation to tender concerning large sites to at least three potential contractors (sites of over 10 hectares). New sites connected to existing areas under management or situated in their immediate vicinity are often assigned to the same livestock farmer to achieve more extensive and cost-effective units and to facilitate their management. In the case of small sites and areas with few contractors, potential managers may also be contacted directly.

The following factors are considered to assess whether or not a farmer with an agri-environment contract is in position to provide the management required by a site:

- realistic possibilities of managing the site and animal welfare
- number of animals on the farm
- location of the farm's operations in relation to the site
- preparedness to manage the site to a high standard
- willingness to undertake initial restoration measures
- willingness to undertake any special measures necessitated by the site, including actions required by endangered species
- multi-species grazing
- experience of grazing under contract
- experience of traditional rural biotope management
- experience of prior cooperation in protected areas
- local cooperation
- location of the farm in relation to the site to be managed

Metsähallitus concludes management contracts with farmers eligible for agri-environment payments. These are right of use contracts containing standard terms and a site-specific description of how each management action should be carried out and who is responsible for it. The requirements concerning the work input of a farmer with an agri-environment contract are determined following the same principles on all Metsähallitus' sites. A farmer with an agri-environment contract is required to comply with the protected area's management plan and use methods suitable for the site as well as ensure adequate grazing pressure and/or correctly timed mowing. The farmer also undertakes to comply with the agri-environment contract and conditions relevant to animal welfare. Pasture or management reviews are conducted to monitor the fulfilment of the management contract. The contract may be cancelled if the contractor fails to comply with its terms.



natural pasture sites where grazing is a suitable management method and existing buildings can be used for accommodation. Anyone can apply for a shepherd's post for a week at a time. The weekly price paid by the shepherd includes accommodation, and the volunteer's tasks include assisting a livestock farmer with caring for their sheep. Cost-effectiveness must be a factor in the selection of sites where volunteer shepherds are used, as the income received must balance out the working time spent on work instruction. If the volunteer shepherd activities were extended to other than the most valuable sites (nationally and regionally), they should cover the costs of organising the grazing. A grazing contract is always concluded with a livestock farmer on sites used for volunteer shepherd activities (see the section on Grazing and mowing under contract).

WORKING PARTIES

More than 75 working parties for volunteers are organised every year in national parks and other protected areas. Some of these take place in valuable semi-natural grasslands and natural pastures, where the volunteers join their forces to clear overgrown sites, collect and burn clearing waste, mow, control alien species, repair structures and sometimes also conduct inventories. The duration of these events varies from one day to volunteer camps of up to two weeks. Working parties are organised by Metsähallitus and in



Photo: Maija Mussaari



Photo: Eveliina Nygren

cooperation with different partners, the most important ones of which are environmental organisations. The working parties also offer an opportunity for companies to organise staff recreation days and similar.

Working parties are organised both on continuously managed sites and those requiring initial restoration. Particularly suitable sites are those where historical working methods are preserved, including slash-and-burn farming and pollard meadows. For example, the volunteers may participate in building a traditional roundpole fence. Organising a working party is a major cost factor, and the cost-efficiency of volunteer work should always be examined in proportion to the benefits gained. The greatest factor affecting Metsähallitus' costs are logistics solutions, the number of persons directing the work, and the hours of weekend work needed. Apart from special sites, carrying out annual mowing by a working party of volunteers only makes sense if it is possible to minimise the work input of Metsähallitus' staff and the partner has extended experience of managing the site. Working parties organised through projects and associations that are long-standing partners of Metsähallitus on initial restoration sites are the most effective scenario.

A LIVESTOCK FARMER'S HEADACHES

Managing protected areas often is a new work form for farmers with an agri-environment contract.

Learning about ecological management work is a challenge amidst the farmer's busy daily life.

From the livestock farmer's perspective, the problem areas are primarily associated with meeting agri-environment scheme conditions and obligations and organising the logistics. The following are some of the most important viewpoints of the livestock farmer:

- Instructions on managing the site are often inadequate or unclear
- Availability of vehicles needed to transport the animals is often poor. The vehicles should also be available in situations requiring a fast response
- The process of learning about ecological management on farms takes time, and farms often have a shortage of competent workers
- The agri-environment contract plan is often inconsistent with the action plan for the protected area
- Incorporating the requirements of managing endangered species and habitats in the annual cycles of a livestock farm is often a challenge
- In protected areas, it is necessary to move the animals around more often than usual during the grazing season. Inadvertently neglecting the obligation to register animal movements may result in penalties and dire consequences for the farm's finances
- The animal's condition and weight gain affect the farm's profits. On the other hand, lean meat of a good quality from animals grazed in natural pastures is in high demand
- The pasture size affects the payment amount but also the suitability of the pasture for different species and production lines
- Monitoring the animals is often difficult to organise on remote sites

PARTNERS AND TARGET GROUPS

The management of semi-natural grasslands and natural pastures is based on cooperation. Many of those who do not participate in their practical management also get to enjoy its results in protected areas. This section provides information about Metsähallitus' key partners and target groups and communications directed at them.

• Farmer with an agri-environment contract

- Grazing and mowing are highly valuable ecological management work
- We at Metsähallitus will continue our activities as a reliable contracting partner
- Protected areas provide possibilities for obtaining additional pastures and mowing contracts
- Contractual partnerships in protected areas support farmers' activities and economy

• Association

- We offer opportunities for cooperation on sites managed by volunteers and under contracts
- By working in protected areas, you can participate and influence the status of your local environment
- Traditional rural biotope management is valuable work for the preservation of not only the most endangered habitats and species but also landscapes and cultural heritage

• Contractor

- We offer work for skilled ecological managers and support local entrepreneurship
- Innovative development of methods and equipment may generate completely new opportunities
- Keep an eye on our invitations to tender on Metsähallitus' website

• Farming advisory organisation

- Local cooperation and smooth information exchange are of primary importance when placing sites under management and improving management quality
- We are a reliable partner and offer possibilities for grazing and contracting for farmers and other rural entrepreneurs
- Project cooperation offers many opportunities

• Regional conservation authority

- We target management actions at the most valuable sites in terms of conservation and the protection of cultural landscapes
- Cooperation and smooth information exchange are crucial when placing sites under management and improving management quality



- Through shared practices, we can streamline the division of labour in private protected areas

• Regional processor of payment contracts

- Smooth information exchange is important in terms of site management under agri-environment contracts and its quality
- Equal treatment of applicants at the national level lays a reliable foundation for traditional rural biotope management
- Agri-environment contract sites in protected areas are some of the most valuable sites and the quality of their management is monitored
- Contact us at Metsähallitus for more information about sites located in protected areas

• Landowner in a private protected area

- You may own a rough diamond whose nature and landscape values could be significantly improved by management
- We at Metsähallitus together with the regional conservation authority will support you in organising the site's management

• Owner of a valuable site outside protected areas

- In the protected areas, we offer examples of well-managed traditional rural biotope sites which you can visit and learn from

• Visitor

- Stop right there, you are standing on a valuable site. Enjoy your nature experience and the landscape, and grasp this opportunity to learn more about nature, grazing animals and cultural heritage
- We at Metsähallitus foster Finnish biodiversity while also addressing the viewpoints of protecting cultural heritage



Photo: Maija Mussaari

- **Volunteer**

- We offer you an opportunity to gain experiences and take action for nature and cultural heritage
- Participating in our events gives you possibilities for visiting some of the country's most beautiful sites and landscapes
- Traditional rural biotope management provides a great form of outdoor exercise while you perform valuable ecological management work.

- **Finnish Environment Institute**

- We work actively to improve the status of habitats and manage endangered species
- The information collected by us can be used to assess the status of the environment (incl. assessments of threatened habitats and species and meeting reporting requirements under EU directives)
- Sites in protected areas can be used for research purposes

- **Researcher**

- The information we collect can be used for research purposes
- Protected areas are available for conducting research
- Research is necessary: to support our practical work, we need information about the impacts of traditional rural biotope management, species, cost-effective new management methods, multi-species grazing and impacts on local economies

- **National Board of Antiquities, regional museums, Ministry of Education and Culture**

- Ancient monuments located in the managed traditional rural biotopes of protected areas are the only relics under systematic management

- **Ministry of the Environment**

- While traditional rural biotope management is a cost-effective way of protecting species and habitats across sectoral boundaries, more effective means and guidance for it are required
- We work to halt development that endangers our most vulnerable habitats and their species
- We meet a number of EU objectives, manage Natura 2000 habitats and species and implement the European Landscape Convention
- The protected areas encompass our most valuable sites, where the continuity of management must be safeguarded
- Funding must be put in place for managing private protected areas

- **Ministry of Agriculture and Forestry**

- The biodiversity of Finnish nature cannot be preserved without grazing livestock
- Protected areas offer good pastures for livestock farms and improve the farms' viability
- The agri-environment payment scheme is the most important funding channel for traditional rural biotopes. In Rural Development Programmes, resources for managing agricultural environments and traditional rural biotopes must also be secured in the future. We will be happy to contribute our experience to the development work
- Traditional rural biotopes in protected areas are vital for the conservation of genetic resources. They are habitats for the wild relatives of cultivated plants and offer possibilities for farmers raising our indigenous animal breeds
- Meadows and natural pastures safeguard pollination services



Photo: Kaisa Raatikainen

A BROADER PERSPECTIVE FROM INTERNATIONAL COOPERATION

Traditional rural biotopes are some of the most species-rich but also the most endangered habitat groups across Europe. European countries share many concerns and challenges. Habitats and species do not respect national boundaries, and it is thus necessary to also examine their occurrence in the international context, taking habitat networks into account.

Metsähallitus is involved in Nordic and Baltic cooperation, for instance through the common Biogeographical Process of the EU Member States aiming to improve the status of habitats and species in the boreal region. The purpose of this process is to improve the status of Natura 2000 habitats and sites in the Nordic and Baltic countries and to promote networking and the exchange of good practices and information. The immediate goals of international cooperation include harmonising the definition of Natura habitats in the boreal region as well as examining and coordinating international priorities and national networks. A particular problem affecting the northern countries is the poor compatibility of the current classification of meadows with northern regions, and the Nordic countries are working together to find a solution. Support for joint projects between adjoining regions in EU countries can be applied through the Interreg programmes, among other things.

PERINNE-ELO – YHTEISTYÖSSÄ PERINNEBIOTOoppiEN HYVÄKSI

The Finnish Expert Group for Semi-natural Grasslands (FBER Grassland Group) is part of the Finnish Board on Ecological Restoration (FBER). The task of the FBER and its four expert groups (on forests, peatlands, grassland, and freshwater habitats) is to assess, develop and promote the restoration of natural and semi-natural environments and the quality of their management as well as to enhance their societal impact. The working group members represent both extensive scientific expertise and competence in practical work. The groups meet regularly and organise seminars and training events.

Since 2008, the FBER Grassland Group has had a strong involvement in developing traditional rural biotope management and building up cooperation between different actors. For instance, the group has participated in developing the agri-environment payment scheme and preparing instructions for inventories and monitoring exercises as well as engaged in international cooperation. By the group's support, national information on semi-natural grasslands and natural pastures has been collected, and the first geospatial database in common use by the environmental administration has been developed. FBER Grassland Group works in co-operation with the group on assessing the threatened habitats in Finland.

For more information about the FBER groups, visit:
<http://www.metsa.fi/web/en/finnishboardonecologicalrestoration>



PARTICIPATION IN INTERNATIONAL AND NATIONAL CONSERVATION EFFORTS



INTERNATIONAL STRATEGIES:

The Convention on Biological Diversity
<https://www.cbd.int/>



The EU Biodiversity Strategy 2020
http://ec.europa.eu/environment/nature/biodiversity/strategy/index_en.htm



The European Landscape Convention
<https://www.coe.int/en/web/landscape>

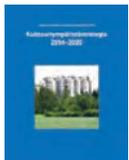


NATIONAL STRATEGIES:

Saving Nature for Humans - Conservation and Sustainable Use of Biodiversity in Finland 2013-2020
http://www.ym.fi/en-US/Nature/Biodiversity/Strategy_and_action_plan_for_biodiversity



Prioritized Action Framework for Natura 2000, PAF
http://ec.europa.eu/environment/nature/natura2000/financing/index_en.htm



The Cultural Environment Strategy in Finland
https://helda.helsinki.fi/bitstream/handle/10138/43197/Kulttuuriymp%C3%A4rist%C3%B6strategia_2014.pdf?sequence=1



Forest Biodiversity Programme for Southern Finland (METSO)
http://www.metsonpolku.fi/en-US/METSO_Programme



Rural Development Programme for Mainland Finland 2014-2020
<https://www.maaseutu.fi/en/>



Action plan for protection of threatened species 2020
http://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/79398/Sy_2_17.pdf?sequence=1&isAllowed=y



Finland's Ramsar Wetlands Action Plan 2016-2020
https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/75329/YMr_21_2016.pdf?sequence=1

The management of agricultural heritage habitats in Finland. Report by the Heritage Landscapes Working Group 2000

Management of traditional rural biotopes in Finland - Situation and Goals' <http://www.doria.fi/handle/10024/134006>

Concerns over the status of traditional rural biotopes are shared. Many international, national and Metsähallitus' internal strategies make reference to the strong decline of traditional rural biotopes and species that are becoming endangered. The biological and cultural history values associated with land use in traditional rural biotopes are well known at the general level, and they are often referred to either directly or indirectly as part of the farming environment or cultural landscape. However, the position of traditional rural biotopes as environments with links to a number of policy areas and administrative branches, divided responsibility and lack of up-to-date information and coordination have hampered efforts to improve their status.



” Loss of biodiversity will be halted by 2020”

” We are pioneers of responsible action and will halt biodiversity loss on state-owned land”

” Advisory services and information activities will be stepped up”

” Endangered species in traditional rural biotopes will be safeguarded”

” Biodiversity of rural landscapes as well as species and habitats of agricultural environments will be preserved and promoted”

” 60,000 ha of traditional rural biotopes will be placed under management”



Photo: Maija Mussaari

GRAZING BANK

Grazing Bank (Laidunpankki) is an online tool maintained by ProAgria, which can be used to seek additional pastures for animals, or find animals to help with ecological and landscape management. The objective is to step up contract-based cooperation that benefits both the livestock farmer and the landowner. Metsähallitus works together with Grazing Bank. The web service has helped to find farmers to graze the pastures on many sites in protected areas. New management sites offered by Metsähallitus are advertised on this service, and livestock farmers interested in managing the site within a set period.

<http://www.laidunpankki.fi/>



Photo: Helena Lundén



METSÄHALLITUS
FORSTSTYRELSEN

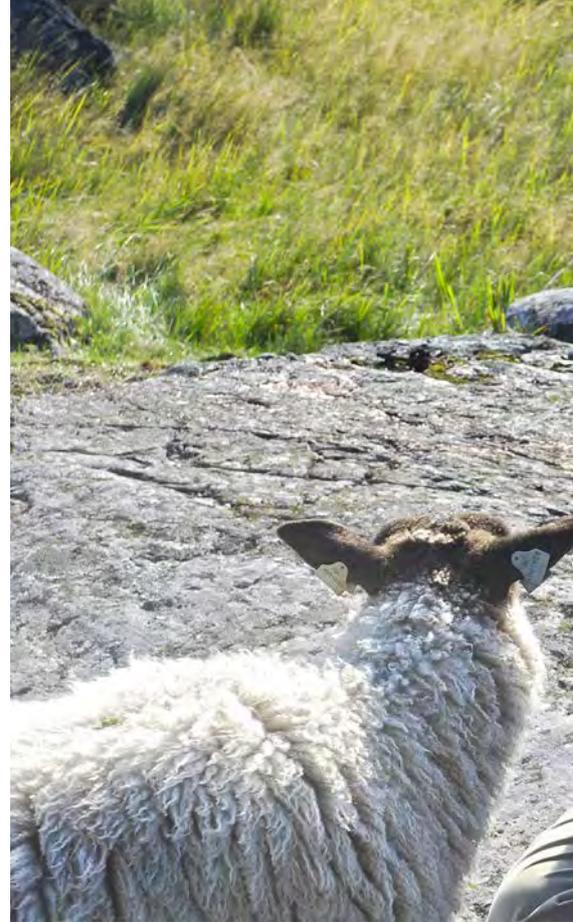


INFORMATION FOR FARMERS GRAZING IN PROTECTED AREAS



GRAZING ANIMALS AS AGENTS OF ECOLOGICAL MANAGEMENT

- The biodiversity of Finnish nature cannot be preserved without grazing livestock.
- An estimated 20,000 animals are already grazing in protected areas, managing almost 11,000 hectares.
- Grazing animals are the best ecological managers, and the biodiversity benefits created by them are invaluable.



GRASP THE OPPORTUNITIES

- Protected areas provide good summer pastures.
- Natural pastures are suitable for all grazing animals: cattle, sheep, horses and goats.
- Animals enjoy grazing in a natural pasture. Their health improves, and their social life is active. For example, the muscles of sheep grow stronger and the wool quality improves.
- By using natural pastures, arable land can be spared for crop farming. Natural pastures diversify the farm's crop rotation.
- Meat and other products from animals grazing in natural pastures are in high demand. Do not miss this opportunity for your farm's marketing.
- Grazing maintains an open and scenic landscape.
- You may be entitled to agri-environment payments for grazing natural pastures: five-year contract on the management of biodiversity and landscape in farming environments and Non-productive investment support.

THE AIM IS AT A HIGH-QUALITY MANAGEMENT OUTCOME

- Correct grazing pressure is crucial in protected areas. The management objectives of protected areas cannot be achieved with an excessively small number of animals and too few grazing days. The grazing pressure also affects the need for maintenance clearing.
- To exploit the lush growth and high nutritional value of the early season, it is important to take the animals to the pasture early enough (with the exception of special sites, where grazing should start later to protect their species). When young and juicy, such plants as the common reed are ideal feed with an excellent nutritional value for the livestock. When the vegetation is consumed at an early stage, it regenerates itself more vigorously, providing tasty feed throughout the grazing season and eliminating the appearance of dried vegetation which the animals cannot use.
- Problem plant species that the livestock cannot feed on should be mowed regularly. After mowing, the animals will eat the young shoots, and gradually the problem species will decline and the condition of the pasture will improve.



Photo: Katja Raatikainen

- In shore meadows, the common reed should be mowed mechanically down to a low level in the first years of management. This will give the livestock free access to all parts of the pasture and improve the outcome of grazing. Additionally, it will attract birds back to the shore meadows sooner. The reed mass can, for example, be spread on fields.
- Pasture rotation and parcelling of pastures into separate parts will enhance the impacts of grazing and help to regulate feed production during the growing season. The animals can also feed on new growth longer into the grazing season.
- Taking care of timely clearing will reduce the workload. Regular maintenance clearing will help to maintain the pasture, give the animals better access and enhance meadow vegetation recovery.
- Each livestock species grazes in its own way. Multi-species grazing often is a good way of ensuring efficient use of the pasture. Varying the species in different years also improves the grazing outcome.

HOW TO INITIATE COOPERATION

1. Find out about the availability of natural pastures at Grazing Bank (Laidunpankki.fi) or from regional Metsähallitus contact persons, landscape management advisers or landowners in private protected areas.
2. Familiarise yourself with the pasture together with a Metsähallitus coordinator, an adviser and/or the landowner.
3. Conclude a lease agreement on the pasture with Metsähallitus or the owner of a private protected area. The agreement is usually made out for five years at a time.
4. The management of the area should be planned in cooperation between Metsähallitus, the farmer grazing under contract, the landowner and an adviser: this would include specifying the goals of management and management methods, delimiting the pasture and determining the number of animals and the duration of the grazing season.
5. Submit an application for non-productive investment support or an agri-environment contract to the regional authority in charge of processing these contracts (the ELY Centre).
6. Once a decision on an agri-environment contract has been made or the contract period starts, the management actions can begin. The restoration of an area that has been abandoned for a long period usually starts with clearing and fencing. For this work, non-productive investment support can be applied for. To some extent, Metsähallitus also carries out initial restoration clearing as part of different projects.
7. If you have initially applied for non-productive investment support, you can apply for an agri-environment contract once the actions for which the support was granted have been completed and the support has been paid.
8. Put the animals out to the pasture. Monitor the grazing pressure and look after maintenance management.
9. You will liaison with Metsähallitus each year. As a farmer with a grazing contract, you will report on the annual management actions, the duration of the grazing season and animal numbers, among other things. The site's management will be directed by Metsähallitus.

BASIC CONCEPTS

- **Cultural landscape**

Cultural landscapes have come to existence through the joint impact of human action and natural processes. A higher-level concept which includes traditional rural biotopes, valuable building heritage and ancient monuments.

- **Cultural environment**

The entire physical environment whose characteristics reflect cultural phases and interaction between humans and nature. The cultural environment is also associated with humans' intangible relationship with their living environment, in the past and present: meanings, interpretations and nomenclature attributed to the environment.

- **Traditional landscapes**

A landscape entity that includes not only traditional rural biotopes but also buildings and other structures associated with historical land use in the area.

- **Traditional rural biotopes**

Species-rich habitats consisting of semi-natural grasslands and natural pastures maintained and shaped by traditional livestock farming which, in order to be preserved, require permanent management, in most cases grazing or mowing as well as the clearing of trees and the shrub layer. Forms of traditional rural biotope usages which have become rare also include slashing and burning, pollarding, coppicing and watering fen meadows by damming.

- **Traditional rural biotope management**

Concrete actions aiming to preserve habitats classified as traditional rural biotopes and their species and to improve their biological status, including fencing, grazing or mowing. In this definition, traditional rural biotope management does not include restoration of old buildings or roundpole fences, for instance, which

could be classified as preservation of cultural values included in the management of traditional landscapes or cultural heritage.

- **Conservation of traditional rural biotopes**

Actions aiming to preserve traditional rural biotopes both in protected areas and outside them, which include planning the management of individual sites, selection of sites to be managed, monitoring the impacts of management and/or establishing the site as a protected area.

- **ULJAS information system**

Information system package in the Finnish environmental administration's shared use, which comprises several separate applications. SAKTI, or the protected area information system, contains data on habitat inventories and the geometry of habitats. SAKTI is used for planning and guiding actions and work sites and for administrating data on actions. Additionally, the data and geometries of traditional rural biotope sites are maintained in this system. LAJIGIS is intended for administrating data on species in protected areas. SASS, or the planning and monitoring system for protected areas, serves master planning and reporting. SATJ contains information on the establishment and administration of protected areas. In PAVE, information on buildings, structures, trails and archaeological sites is maintained.

- **Farmer with an agri-environment contract**

In this agenda, a farmer with an agri-environment contract means a farmer who manages a site in cooperation with Metsähallitus and with whom a grazing or mowing contract for a traditional rural biotope site has been concluded. The farmer receives compensation for the costs of the management work through the agri-environment payment scheme.





Photo: Katja Raatikainen



Photo: Katja Raatikainen



Photo: Katja Raatikainen

FROM NATURAL TO MAINTAINED

Traditional rural biotope species require regular disturbance of their environment in order to be able to survive and spread to new sites. Repeated mowing and removal of vegetation as well as grazing remove nutrients and litter and thus reduce shading and competition between plants. In traditional rural biotopes, this disturbance is caused by grazing livestock, fire, a mowing blade and a saw.

Traditional livestock farming left its mark on our environment over millennia, initially across small areas but with a steadily increasing impact, up till the first decades of the 20th century with a subsequent dramatic decline. Traditional rural biotopes were created by traditional forms of land use, but their species have existed for millennia before the introduction of livestock farming.

During the most recent Ice Age, the majority of Europe was covered by open grasslands, or steppe, grazed by a diverse herd of large ruminants. Wisents, woolly rhinoceroses, mammoths, musk-oxen, aurochs and tarpans together with forest reindeer, roe deer and other ungulates kept the steppes open. The end of the Ice Age also marked the end for many large ruminants, apparently due to the combined effect of advanced hunting methods and climate change. Some ruminants survived, however, and continued living in the wild as humans spread ever wider. Ruminants survived in the European environment almost up till the modern era. The auroch, for instance, only became extinct in the 17th century, and the tarpan in the 19th century. Thanks to conservation measures, the wisent and the wild forest reindeer have survived.

Species dependent on grazing have lived not only on the migration routes, along the trails and on the summer pastures of ruminants but also in other changing disturbance environments. In these environments, tree growth has also been prevented because of conditions subject to extreme variations, including varying temperatures or water levels. Many traditional rural biotope species thus originated on shores or the sunny slopes of eskers and in rock meadows.

Efforts to re-introduce large nutrients to their natural pastures have been initiated in Europe as an ecological management method. Once the pasture has been established, grazing by wild animals is a cost-effective method of increasing the surface area of endangered meadows and preserving endangered species.



In Northern America, bison maintain extensive open and semi-open areas. Photo: Maija Mussaari

EXAMPLES OF SITES

PITKÄNOKKA

The large pasture areas of Pitkänokka are found on the Gulf of Bothnia coast on the western shores of Liminganlahti Bay. The area belongs to a bird wetland protection programme, the Natura 2000 network as well as the nationally valuable landscape area of Liminka.

The area has been inhabited since the 14th century, and as livestock farming took great strides in the 18th century, natural meadows were extensively used for mowing hay for fodder. The meadow economy continued until the 1950s, after which the extensive seashore meadows of Liminganlahti Bay started becoming overgrown.

In a national inventory of traditional rural biotopes in the 1990s, a 72-hectare area was set aside in Pitkänokka, which was at the time used for grazing beef cattle. A large tract of land overgrown with reeds was left outside this area. In the mid-1990s, the area under management was enlarged stepwise to 254 hectares. At that time, the site was grazed by the suckler cows of three different farmers. Funded by the Liminganlahti LIFE project, restoration measures were carried out across a 250-hectare area, and since 1986, farmers have received compensation for the costs of grazing and other continuous management under the EU's special environmental scheme (today the agri-environment payment scheme). The area of grazed meadows has since been expanded several times, and today Pitkänokka comprises over 600 hectares of interconnected low-growth seashore meadows managed by three livestock farmers and their suckler cows. In total, more than 1,300 hectares of seashore meadows are currently under management on Liminganlahti Bay.

Liminganlahti as a whole is highly important for birds, especially as a nesting site and a resting area during migrations. In Pitkänokka, bird values are addressed in the management by parcelling the pastures into separate parts and only grazing the cattle in some of the parcels after the birds' nesting season. An indication of Pitkänokka's value for birds is the fact that

the area is one of the most important nesting sites of the critically endangered dunlin in the Baltic Sea.

The ELY Centre for Northern Ostrobothnia (previously the environment centre) has been involved in developing the coastal network of managed sites from the beginning, also in Pitkänokka. The management plans were prepared, birds and plants were inventoried, and restoration trials were devised and monitored as part of the LIFE project.

"Thanks to long-term management efforts, we have successfully placed extensive areas under management. We now have a network of managed sites of unique proportions in Northern Ostrobothnia, which is significant for birds even on the European scale", rejoices Senior Inspector Jorma Pessa from the ELY Centre for Northern Ostrobothnia. "The network has now reached the targeted surface area, and our particular focus is on ensuring high-quality management both in Pitkänokka and on other sites" he continues.

Conservation in Pitkänokka has mainly taken the form of establishing private protected areas. 15 separate protection decisions have been issued, in addition to which approx. 186 hectares are managed by Metsähallitus Parks & Wildlife Finland. Coordination of the management is thus quite a jigsaw, as the viewpoints of three livestock farmers, at least 15 landowners, Metsähallitus and the ELY Centre need to be reconciled. Not forgetting that Liminganlahti Bay is a crucial recreation area for birdwatchers, hunters and other users.



Liminganlahti provides nesting sites for such species as the critically endangered dunlin (*Calidris alpina* ssp. *schintzii*).
Photos: Jari Peltomäki



Photo: Mia Vuomajoki

RAJA-JOOSEPPI

Raja-Jooseppi homestead is located on Luttojoki River in Inari, in the northeast corner of Urho Kekkonen National Park close to the Russian border. This settlement is part of the park's Sompio–Kemihaara Natura 2000 site. The site is about one hectare in size.

Raja-Jooseppi is a built cultural environment and tourist destination of national importance. As a traditional rural biotope, the site has been classified as regionally valuable. It is a well-preserved example of a small-scale wilderness settlement supported by hunting and livestock farming in the fell area of Forest Lapland. Originally, the settlement was a rest area for reindeer herders, until Raja-Jooseppi (Josef Sallila) and his partner Tilta made it their home around 1910–1915. They made their living out of gold-digging, pearl hunting, fishing and hunting as well as reindeer herding. They also kept a few cows and sheep, for which hay was mowed around the homestead and on a nearby island. In addition to living accommodation and different outbuildings, the homestead features a trench dating back to the Second World War in the yard. Jooseppi lived on the homestead for around thirty years until his death in 1946, after which the settlement has been uninhabited. The National Board of Antiquities and Metsähallitus have renovated the buildings in the 1980s and in the last few years.

The homestead consists of dwarf shrub dry meadow, graminoid mesic meadow, and mesic and low herb

alluvial meadow. Four species of moonwort ferns are found on the site: common moonwort, leathery moonwort, northern moonwort and triangle moonwort. Other vascular plants include Arctic raspberry, alpine bistort, yarrow, woundwort, yellow rattle, crowberry, harebell and mountain everlasting. What used to be the potato batch now almost exclusively grows sweet grass.

After Raja-Jooseppi's death the homestead remained unmanaged, apart from occasional controlled burning carried out by the Border Guard. In 1999, Metsähallitus set up monitoring lines for vascular plants on the site and, a few years later, prepared a traditional rural biotope management plan. The goal of the management is to care for the traditional rural biotope, landscape, cultural heritage and old buildings alike. Since 1999, the homestead has been mowed annually by Metsähallitus staff. The mowing was earlier carried out by scythe, whereas today a push mower or a quad mower is used. The large volumes of hay mowed in earlier years were used as reindeer feed. The island off the homestead was cleared once in 2000 and is again in need of clearing. As a result of the current management actions, meadow vegetation has become lower, the grasses are smaller, the proportion of dry meadows has increased, and moonworts have made an appearance on the homestead.



Photo: Katja Raatikainen



Photo: Päivi Leikas

DÅVITSIN PASTURE

Dåvits pasture in Kirkkonummi is part of Medvastö–Stormossen Natura 2000 site, and sections of it belong to conservation programmes for bird wetlands and herb-rich forests. Ancient monuments are also found in the area. Grazing in Dåvits was discontinued after the Second World War, as the site was part of a zone occupied by the Soviet Union. Overgrowth that continued for decades left the seashore meadows covered in reeds, wooded pastures dominated by spruces and old field parcels overgrown with trees, resulting in species impoverishment.

The Species-rich LIFE project led by Metsähallitus made it possible to put Dåvits under management. Metsähallitus advertised the site on the Grazing Bank web service (Laidunpankki.fi), and a livestock farmer interested in grazing it was found. A five-year grazing contract was concluded between Metsähallitus and the farmer. Metsähallitus began planning the site's management, while the farmer started preparing an agri-environment contract application. As part of the planning work, the species of Dåvits were examined, and the site's habitat, landscape and cultural heritage values were inventoried. In the ecological management plan, the site's values and management needs were reconciled, and perspectives related to the practical arrangement of grazing were addressed.

As part of the LIFE project, a forest machine was used to restore a 15-hectare area into patches of wooded pasture and meadow in the winter season of 2012–2013. After large-scale clearing, removing all the branches was a major job, and a local contractor, volunteers, persons in an employment scheme and prisoners participated in collecting and burning the clearing waste. An excavator contractor assisted in erecting the fence posts, digging a water hole, building a road and setting up power supply.

"The woods of the pasture are mainly in their natural state, and they were not cleared. These woods provide shelter for not only forest birds but also flying squirrels, whose movements were taken into account when clearing the wooded pastures. Cultural heritage was taken into consideration by opening out old meadows and fields shown on an 18th-century map and removing trees from cairns that tell the tale of the site's history",

explains Planner Päivi Leikas from Metsähallitus Parks & Wildlife Finland, who was responsible for planning and implementing management in Dåvits.

The shores overgrown with reeds attracted few wetland birds. While some of the reeds were left on the site to provide habitat for reed birds, in the greater part of the site reeds are declining as grazing progresses, and low seashore meadow plant species and shore birds can return. Reeds have been mowed over small areas to extend grazing deeper into these parts of the site.

Grazing in Dåvits started in June 2013 as 96 sheep and eight cows from Herrakunta sheep farm were released in the 62-hectare pasture. "Multi-species grazing works well on a high biodiversity site like this with not only soft-soiled, moist seashore meadows but also mesic meadows and wooded pastures on harder soil", explains Päivi Leikas.

"Grazing on Natura sites and in protected areas is highly compatible with our farm's production cycles and philosophy. It is an essential part of our production, and customers who buy meat directly from our farm also appreciate this practice", note Sari Jaakkola and Jaakko Jussila from Herrakunta sheep farm.

The development in Dåvits is constantly monitored. "The number of animals is adjusted to the productivity of the pasture as the vegetation develops under management", says Jussila. The number of sheep has since been reduced and the share of cattle increased to ensure that the moister parts of the shore are used more efficiently. The flying squirrel habitat has been monitored annually, and it appears that the sites attract even more squirrels than before. Vascular plants are also monitored, and delightfully, such plants as the maiden pink have already appeared in the area. As the management had got off to a good start, the ELY Centre for Uusimaa found that even after a couple of years, the site had improved to the point of becoming a traditional rural biotope of regional value.

"The biologists with whom we work have great expertise, and in their hands, the planning and implementation of the sites are really versatile. All the agreed actions have been completed, and this also encourages us farmers", Sari Jaakkola and Jaakko Jussila praise the cooperation.

SITES IN THE ARCHIPELAGO NATIONAL PARK

The Archipelago National Park is located in the municipalities of Parainen and Kemiönsaari in southwest Finland. It is delimited by the Åland Archipelago in the west, the open expanse of the Baltic Sea in the south and east, and large inhabited islands in the north. The Archipelago National Park is the most species-rich of all Finnish national parks, and its nature has been shaped by both the unique conditions of the archipelago and strong cultural history. In the archipelago, nutrient-rich meadows and grazed woodlands were spared from the intensive economic use which sealed the fate of many valuable sites on the mainland. Exceptionally high biodiversity and great numbers of endangered species together with the challenging archipelago conditions set stringent demands on the site's manager. The sites belong to the Natura 2000 site of the Archipelago Sea.

In the Archipelago National Park, traditional rural biotope management started as early as the 1980s, and thanks to the long-standing cooperation, contract grazing has been put on a permanent footing among local livestock farmers. Long-term management has increased the number of individuals in endangered species. Such plants as the English cinquefoil, which occurs on many pastures, has clearly benefitted from the combination of mowing and grazing, and as orchids on Jungfrukär island in Parainen have been monitored, a 100-fold increase in the number of individuals over 30 years of management has been observed.

Westankärr mansion on Kemiönsaari island manages an extensive entity consisting of five separate islands in the Archipelago National Park: Örö, Långholm, Apelholm, Hamnholm and Högländ. The grazing sites extending across several islands facilitate the work of both Metsähallitus and the farmer with the agri-environment contract. Important recreational activities of the park are located on two of the islands. Högländ, which is located close to the continent, hosts a marina, which gives access to a popular nature trail leading to the top of the highest island in the Archipelago Sea. Örö is one of the latest attractions of the national park and provides marina, hotel and hostel services. On this island, too, a nature trail leads visitors across the pastures.

All these five sites were restored in the 2000s. Grazing on some of the islands already began before this period. The last one to be put under management by grazing was the island of Örö, where pastures were set up under the auspices of the

Light and Fire LIFE project led by Metsähallitus in 2015–2016. Before the establishment of the pasture, the grazed woodlands and wooded pastures as well as the seashore meadows were restored by removing trees. In the first year of grazing following the restoration work, the English cinquefoil populations already multiplied clearly.

Regarding their natural conditions, the islands are diverse combinations of herb-rich forests high in nutrients, old-growth forests, maritime heaths and different meadows. As to their endangered species, Örö heaths and dry meadows are some of the most valuable entities in the Archipelago Sea, as around two hundred endangered and near threatened species are known there. Such species as the European crab apple, the English cinquefoil and the pyramidal bugle are found on the island of Apelholm, and the European cinquefoil and the meadow saxifrage grow in the hazel meadows of Långholm. Hamnholm is a large wilderness area with well-preserved old grazed woodlands with such species as strawberry clover growing on its seashore meadows. Högländ is a rugged crofter's island of meadows and wooded pastures.

Caroline and Mårten Forss from Westankärr mansion, who are managing the sites under an agri-environment contract, started their collaboration with Metsähallitus on Hamnholmen island in 2006. The managed surface area has been increased gradually. Caroline and Mårten together with Filip Forss, who will take over the farm, are friends of the archipelago nature and motivated by their challenging work with traditional rural biotopes and biodiversity.

The specific aim of the farm is to specialise in landscape management. "This entity of multiple sites enables professional management of traditional rural biotopes and the investments it requires", Mårten says. The most important investment is transport equipment that works in maritime conditions, as regulating grazing pressure is particularly vital on valuable sites. Achieving the desired grazing outcome is a challenging task, which is supported by multi-species grazing. Another significant investment and a new competence area in the farm's daily life is a herd of highland cattle, which the farm acquired in 2016 for the specific purpose of managing traditional rural biotopes.

In challenging conditions, flexible logistics solutions play a key role for guaranteeing high-quality maintenance. In this respect, Metsähallitus' field team has provided crucial assistance for the farmers grazing the area. "A fleet of boats could be more practical, whether owned by us or managed by Metsähallitus", Mårten reflects on development areas.

Photo: Maija Mussaari



APPENDIX 1 NATIONAL POLICIES ON THE MANAGEMENT OF TRADITIONAL RURAL BIOTOPES IN PROTECTED AREAS IN FINLAND

Objective 2025	Details
HABITATS AND SPECIES	
At minimum 15,000 ha of traditional rural biotopes will be under management in protected areas in 2025	<ul style="list-style-type: none"> • Today approx. 11,000 ha are under management in protected areas, whereas there are 3,500 ha of unmanaged sites found valuable in a national inventory of traditional rural biotopes, and 6,000 ha of other unmanaged areas (for the value classification, see the section Site selection is based on national objectives) • The targeted area is based on the article by Raatikainen Kaisa et al 2017 Biological Conservation 207: 90-99.
The most valuable sites will be placed under high-quality management	<ul style="list-style-type: none"> • By 2025, 100% of the nationally valuable sites and 80% of the regionally valuable sites will be under management • As part of managing site entities, the special requirements of the most endangered species and the habitats with the smallest total area will be addressed
Restoration and management will be targeted to support the ecological network of species and habitats	<ul style="list-style-type: none"> • Locally valuable and restorable sites which flank valuable sites or which otherwise support the valuable site network will be placed under management • When looking at connectivity, traditional rural biotopes and other habitat groups outside protected areas will also be taken into consideration • Site entities, potential for restoration and cost-effectiveness of management will be accounted for
Sites with species needing particular and urgent protection will be prioritised	<ul style="list-style-type: none"> • Traditional rural biotope species benefiting from management and their occurrences will be known and accounted for in the activities
Sites with habitats and species referred to in the Habitats Directive (Natura 2000) will be prioritised	<ul style="list-style-type: none"> • While sites with prioritised Natura 2000 habitats or species will be emphasised when targeting the management, management is always based on site entities.
Management actions will be targeted at the most valuable sites in terms of their species	<ul style="list-style-type: none"> • Sites and entities with species of key value will be identified • The total area under management and the volume of habitats suitable for the species will be increased • The quality of management will be improved
Endangered species will be accounted for when planning the management and managing the sites	<ul style="list-style-type: none"> • Populations of endangered species in traditional rural biotopes will be known, and the special requirements of the species will be addressed in management actions
RECREATION, CULTURAL HERITAGE, LANDSCAPE	
Examples of working methods and traditional rural biotope sites in protected areas most typical of the region will be conserved	<ul style="list-style-type: none"> • Examples of working methods associated with traditional meadow economy that are difficult to preserve outside protected areas will be maintained: pollarding, heath burning, mowing, controlled burning, slashing and burning, and watering of fen meadows
Ancient monuments on traditional rural biotope sites will be kept safe, and examples of buildings and structures associated with traditional livestock farming will be preserved	<ul style="list-style-type: none"> • Ancient monuments on traditional rural biotope sites will be identified and, at minimum on sites of national value, inventoried • On managed traditional rural biotope sites, the management also extends to any ancient monuments and the archaeophytes and plemochores found on them • The preservation of buildings and structures associated with traditional livestock farming will be secured, especially on sites of national value and sites in national parks • New uses of old buildings will be considered on important sites
The most important sites in terms of recreational use will be accounted for, and the general public's participation will be enabled as part of promoting living cultural heritage and citizens' wellbeing	<ul style="list-style-type: none"> • In the management of the sites, accessibility and information activities will be provided for on sites important for the public, including the national parks • The wellbeing and health impacts produced by nature in protected areas will be enhanced
Key sites located in landscape areas of national value will be put under management	<ul style="list-style-type: none"> • In protected areas, traditional rural biotope sites located in landscape areas as well as their values and management status will be examined, and the placement of new sites under management will be promoted

Objective 2025	Details
INFORMATION AND COMMUNICATION	
By 2020, traditional rural biotope inventories will have been carried out on 90% of the sites, with the remainder inventoried at the latest by 2025	<ul style="list-style-type: none"> • As part of the update of the national traditional rural biotope inventory • Inventory information is currently missing for more than one half of the sites in protected areas (6,464 ha)
Species surveys will be conducted, also for other groups besides vascular plants	<ul style="list-style-type: none"> • Inventories of key species groups on each site will be carried out on at least one half of new nationally and regionally important sites placed under management • The gaps in information on traditional rural biotope species will be accounted for in the projects
The data content of all inventories and monitoring exercises carried out will be saved in the ULJAS information system	<ul style="list-style-type: none"> • Inventory data will be saved in the traditional rural biotope module of the SAKTI system • Data on species will be saved in the LajiGIS system
The management status and quality and the impacts of management on habitats and species will be monitored on the sites	<ul style="list-style-type: none"> • The habitat and traditional rural biotope inventory data will be kept up to date • Site management data will be collected annually • Management planning will be supported by species surveys and a monitoring network
Active efforts will be made to inform the general public about the significance and management of traditional rural biotopes	<ul style="list-style-type: none"> • Traditional rural biotope work carried out by farmers, Metsähallitus, the ELY Centres, NGOs, advisory organisations and volunteers will be visible and well known
RESOURCES	
The potential of cooperation and the agri-environment payment scheme will be used efficiently	<ul style="list-style-type: none"> • The aim is that 95% of the total surface area under management will be covered by agri-environment contracts • The aim is that sufficient earmarked appropriations will be reserved for agri-environment contracts for maintaining biodiversity
More opportunities for voluntary work will be provided, and the general public's participation in traditional rural biotope management will be promoted	<ul style="list-style-type: none"> • Working parties and sites managed by volunteers • Volunteer shepherd activities • New forms of participation will be developed
Resources for traditional rural biotope management will be secured in Metsähallitus' budget financing	<ul style="list-style-type: none"> • The continuity and quality of management will be safeguarded in Metsähallitus' budget financing. Continuous high quality of the guidance for management and the sufficiency of competent employees for providing guidance will be ensured • The continuity of management on important sites managed by mowing will be secured
Project activities will be actively used for inventorying, planning, managing and monitoring sites	<ul style="list-style-type: none"> • Work on traditional rural biotopes will be accounted for in national, regional and local projects, also those in which the main focus is not directly on traditional rural biotopes
Cooperation between Metsähallitus, advisory organisations and regional authorities will be intensified, and overlaps in management planning will be avoided	<ul style="list-style-type: none"> • The objective is high-quality management plans based on background data collected in the field that address the perspectives of the agri-environment payment scheme and the special requirements of protected areas • Cooperation related to sites managed under agri-environment contracts will be smooth

These national policies on the management of traditional rural biotopes in protected areas were compiled by the Finnish Expert Group for Semi-natural Grasslands, which directed Metsähallitus Parks & Wildlife Finland's work on the agenda for traditional rural biotope management. The Ministry of the Environment also participated in drafting the policies.

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**RURAL DEVELOPMENT PROGRAMME FOR
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http://www.ymparisto.fi/en-US/Nature/Natural_habitats/Assessment_of_threatened_habitat_types_in_Finland

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Management of semi-natural grasslands and natural pastures is among the most vital actions for maintaining the biodiversity in Finnish nature. Strictly protected private and state-owned areas have a key role in preserving of the habitats and species, as well as the cultural and landscape values involved. This agenda specifies the outlines of the work for semi-natural grasslands done by Metsähallitus Parks and Wildlife until 2025. The aim is a clear improvement of the status of semi-natural grasslands by directing additional management actions to most valuable locations and improving the quality of management. This agenda also presents an overview of the activities by Metsähallitus Parks and Wildlife in maintaining semi-natural grasslands.

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