



Ministry of Agriculture  
and Forestry of Finland

# Management Plan for the Bear Population in Finland

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# Management Plan for the Bear Population in Finland

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## Management Plan for the Bear Population in Finland

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70

**Abstract**

The main objectives of the Management Plan for the Bear Population in Finland are to preserve the favourable conservation status of the bear population and to make sure that bears will not lose their fear of humans. The Management Plan for the Bear Population aims to reconcile the needs of the people living and working in or close to bear habitats and the needs related to the protection of the bear population.

Preserving the favourable conservation status of the bear population is concerned with safeguarding the viability of the bear population while taking into account the different needs and views of the people living in or close to bear habitats, and social sustainability. The Management Plan for the Bear Population describes the key measures that aim to preserve a viable bear population as part of the Finnish natural environment and ecosystems, enable sustainable hunting of bears for population management purposes, and address the economic and social challenges caused by bears, such as damages to reindeer and domestic animals. The plan also responds to international obligations concerning Finland.

The preparation of the process to update the Management Plan for the Bear Population started in 2016 in collaboration between the Finnish Wildlife Agency and Natural Resources Institute Finland. The preparations included an online survey of people's opinions on the bear and management of the bear population, a survey targeted to those issued with derogations for population management purposes, consultations with the regional wildlife councils, a survey targeted to the participants of the regional stakeholder events, an online discussion forum and workshops.

Besides the Management Plan for the Bear Population, a background document for the plan was drawn up in cooperation between the Finnish Wildlife Agency and Natural Resources Institute Finland. The draft Management Plan for the Bear Population was circulated for comment in 2017 and the plan and its background document were finalised by public officials working at the Ministry of Agriculture and Forestry. This final phase also included consultations with stakeholders.

**Keywords** bear, game, carnivores, game management, large carnivores**ISBN PDF** 978-952-366-751-8**ISSN PDF**

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## Suomen karhukannan hoitosuunnitelma

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70

### Tiivistelmä

Suomen karhukannan hoitosuunnitelman päätavoitteina on karhun suotuisan suojelutason säilyttäminen ja karhukannan ihmisarkuuden ylläpitäminen. Hoitosuunnitelmalla pyritään sovittamaan yhteen yhtäältä karhun elinalueilla asuvien ja toimivien kansalaisten tarpeet sekä toisaalta karhukannan suojelun tarpeet.

Karhukannan suotuisan suojelutason säilyttämisessä kyse on karhukannan elinvoimaisuuden turvaamisesta ja samalla siitä, että karhun elinalueilla asuvien kansalaisten eri tarpeet ja näkemykset ja sosiaalinen kestävyys huomioidaan. Karhukannan hoitosuunnitelmassa kuvataan keskeiset toimenpiteet, joiden tavoitteena on turvata elinvoimainen karhukanta osana suomalaista luontoa ja ekosysteemeitä, mahdollistaa karhukannan kestävä kannanhoidollinen metsästyksen sekä vastata karhun aiheuttamiin taloudellisiin ja sosiaalisiin haasteisiin kuten poro- ja kotieläinvahinkoihin. Suunnitelmalla vastataan myös Suomea koskeviin kansainvälisiin velvoitteisiin.

Karhukannan hoitosuunnitelman päivityksen valmistelu aloitettiin vuonna 2016 Suomen riistakeskuksen ja Luonnonvarakeskuksen yhteistyönä. Osana valmistelua esimerkiksi toteutettiin kansalaisyksityy koskien ihmisten mielipiteitä karhusta ja karhukannan hoidosta, laadittiin kysely kannanhoidollisten poikkeuslupien saajille, kuultiin alueellisia riistaneuvostoja, pidettiin kysely alueellisiin sidosryhmätalaisyksityy osallistuneille, järjestettiin keskustelufoorumi verkossa ja pidettiin työpajoja.

Karhukannan hoitosuunnitelman lisäksi samassa yhteydessä valmisteltiin Suomen riistakeskuksen ja Luonnonvarakeskuksen yhteistyönä hoitosuunnitelman taustasio. Hoitosuunnitelmaluonnos oli lausunnoilla vuonna 2017 ja varsinainen hoitosuunnitelma sekä taustasio viimeisteltiin virkатыönä maa- ja metsätalousministeriössä. Viimeistelyssä kuultiin myös sidosryhmiä.

**Asiasanat** karhu, riista, petoeläimet, riistanhoito, suurpedot

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## Förvaltningsplan för björnstammen i Finland

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### Referat

De huvudsakliga målen för förvaltningsplanen för Finlands björnstam är att behålla en gynnsam bevarandestatus för björn och bevara björnstammens människoskygghet. Syftet med förvaltningsplanen är att å ena sidan anpassa de behoven som medborgare som bor och verkar i björnens levnadsområden har och å andra sidan de behov som gäller skydd av björnstammen.

Vid behållandet av en gynnsam bevarandestatus för björnstammen är det fråga om att trygga björnstammens vitalitet och samtidigt om att beakta de behov och synpunkter som medborgare som bor i björnens levnadsområden har samt social hållbarhet. I förvaltningsplanen för björnstammen beskrivs centrala åtgärder, vars mål är att trygga en livskraftig björnstam som en del av den finländska naturen och ekosystem, möjliggöra en hållbar stamvårdande jakt av björnstammen samt att svara mot de ekonomiska och sociala utmaningar som björnen orsakar, såsom ren- och husdjursskador. Med planen uppfylls även internationella skyldigheter som gäller Finland.

Uppdateringen av förvaltningsplanen för björnstammen inleddes 2016 i samarbete mellan Finlands viltcentral och Naturresursinstitutet. Som en del av beredningen genomfördes till exempel en medborgarenkät som gällde människors åsikter om björnen och förvaltning av björnstammen, togs fram en enkät för dem som beviljats stamvårdande dispenser, hördes regionala viltråd, genomfördes en enkät för personer som deltog i regionala intressentmöten samt ordnades ett diskussionsforum på nätet och workshoppar.

Utöver förvaltningsplanen för björnstammen bereddes samtidigt en bakgrundsdel för förvaltningsplanen i samarbete mellan viltcentralen och Naturresursinstitutet. Utkastet till förvaltningsplan var ute på remiss under 2017 och den faktiska förvaltningsplanen samt bakgrundsdelens utarbetades som tjänsteuppdrag på jord- och skogsbruksministeriet. Vid avslutningsskedet hördes även intressentgrupper.

**Nyckelord** björn, vilt, rovdjur, viltvård, stora rovdjur

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## Introduction

The main objective of the Management Plan for the Bear Population in Finland is to maintain the favourable conservation status of the brown bear (*Ursus arctos*) and maintain the bear population's wariness of humans. The management plan aims to reconcile the needs of the people living and working in or close to bear habitats and the needs related to the protection of the bear population. The sets of measures in the management plan are 1) profound and expanding knowledge on the bear population, 2) management-based measures, and 3) acceptability of the bear and its population management, and they support the goals of maintaining a favourable conservation status and maintaining the bear population's wariness of humans.

The management of the bear population, like that of other large carnivores and game species, must take into account the interaction of these wild animals with humans and, more broadly, human activities. That is why the Management Plan for the Bear Population describes the various effects and interdependencies between the bear population and human activities, and vice versa. A new approach introduced to the plan is the multi-species approach, i.e. interaction between different species in relation to each other.

The retention of the favourable conservation status of the bear refers to safeguarding the viability of the bear population while taking into account social sustainability and the different needs and views of citizens living in or near bear habitats. The measures according to the Habitats Directive to be carried out will take into consideration financial social and cultural demands, as well as special regional and local features. The second key objective in the management of the bear population has been identified as maintaining the bear population's wariness of humans, which will help to ensure that the public's attitude towards the bear remains positive. The Management Plan for the Bear Population in Finland describes the key measures aimed at securing a viable bear population as part of Finnish nature and ecosystems, enabling sustainable hunting of the bear for population management purposes and addressing the financial and social challenges posed by the bear, such as damage to reindeer and domestic animals. The plan also responds to Finland's international obligations.

In general, it can be said that the bear, as a large carnivore, is a respected and highly regarded animal as part of Finnish nature and a respected game species. It is also the most abundant large carnivore, along with the lynx.



## Update of the Management Plan for the Bear Population

An update of the management plan was carried out in 2016 by the Finnish Wildlife Agency and the Natural Resources Institute Finland and was circulated for comments in 2017. The starting point for the preparation of the management plan was that the measures to be established must be capable of genuinely pursuing the ecologically, economically and socially sustainable management of the bear population. However, when formulating the objectives and measures to be adopted, account must be taken of the fact that the legislative framework and international commitments limit the options for solutions. Citizens have divergent expectations and requirements regarding bear population management, so the preparation of a management plan also mean reconciling different points of view. In addition, the resources available for the management of the bear population must be taken into account. The resources in Finland are scarcer than in many other countries, and they are not expected to change very much from the current situation.

The draft management plan and its background document were finalised as part of the official duties of the Ministry of Agriculture and Forestry. In the finalisation, the received opinions and updated information were taken into account, for example, with regard to the bear population. In addition, the preliminary ruling of the EU Court of Justice (2019) on wolf hunting for population management purposes was also taken into account, along with and any other changes in, for example, legislation. The structure of the measures document was clarified and harmonised in accordance with the management plans for the lynx and wolf populations (2021, 2019). The changes were reviewed at a meeting with stakeholders in June 2022.

The first Management Plan for the Bear Population in Finland was adopted in 2007. The Ministry of Agriculture and Forestry commissioned an assessment of the development of the national large carnivore policy, within which an overall assessment of the development and success of the large carnivore policy led by the Ministry of Agriculture and Forestry was made between 2007 and 2012 and proposals for the development of the large carnivore policy were drawn up. The work was completed in 2014. The results of the assessment indicate, in summary, that the management of the bear population has been successful although there is room for improvement. There was therefore a need to update the Management Plan for the Bear Population, and the work was carried out partly on the basis of the assessment.

There have been changes in the bear population since 2007. In 2008, the Natural Resources Institute Finland estimated that there were 1,050 to 1,100 bears over the age of one year in Finland before the 2008 hunting season. According to the Natural Resources Institute Finland's population assessment published in April 2022, there were approximately 1,780 to 1,940 bear individuals over the age of one year in Finland before the hunting season

starting in August 2022. (Heikkinen et al. 2022.) According to the population estimate, the growth of the bear population, which started in 2014, seems to have stopped. The number of bears decreased most clearly in Eastern Finland (dense bear population area of Eastern Finland), while Western Finland saw a slight increase (Natural Resources Institute Finland 2022a).

A new theme in the Management Plan for the Bear Population is a multispecies approach, which in the case of large carnivores means taking into account interaction between large carnivores and their prey in population management and related planning efforts. The approach also emphasises the fact that issues pertaining to bear population management cannot be considered separately from other large carnivores. The multispecies approach to population management has existed for some time, but the interest and efforts of wildlife and game administration and research on the approach have become more concrete in recent years.

The update of the management plan also takes into account the steps in the development of a supplementary method for the monitoring of the bear population based on genetic identification and, for example, the updated characteristics of the Oma riista service that can be used in bear population management activities. The management plan also examines issues related to maintaining the bear population's wariness of humans and the feeding of bears from the points of view of baiting for photography purposes and feeding sites maintained by private persons. It can therefore be said that the management of the bear population touches on many different issues and also on different sectors, and the coordination of the management must therefore take account of a number of different aspects.

### Structure of the management plan

In the updated Management Plan for the Bear Population in Finland, background information and management measures are presented in two parts. The part setting out the measures, that is, the actual management plan, is an independent document and, while it provides some background information, it also refers to various sections of the background document in which the topics are discussed in greater detail. The background document describes the management and protection of the Finnish bear population and creates a backdrop for the objectives and measures set out in the actual management plan for the management of the bear population. The background document describes the status and development of the bear population, the economic and social importance of the bear in Finland, national legislation, international obligations and forms of cooperation, hunting regulation, stakeholder cooperation and communication about large carnivores, as well as the preparation of the management plan.

This measures document presents the objectives and measures for the management of the bear population. The measures proposed include regional management of the bear population, bear population monitoring, prevention of damage, development of hunting regulation and selectivity of hunting, training, counselling, information and baiting. The Management Plan for the Bear Population describes the measures taken by the Ministry of Agriculture and Forestry and the members of the Finnish Wildlife Consortium to manage the bear population. The Finnish Wildlife Agency monitors the implementation of the Management Plan for the Bear Population. The Finnish Wildlife Agency reports annually to the Ministry of Agriculture and Forestry on the implementation of the management plan. The accuracy of reporting is enhanced by annual assessments of the regional wildlife councils on the implementation of the objectives and measures of the management plan in their respective territories and the statement made by the National Wildlife Council to the Ministry of Agriculture and Forestry on the basis of them.

The first chapter of the management plan describes the main objectives of the management plan, the criteria for a favourable conservation status and the associated regulation.

Chapter 2 describes three key sets of measures (Sections 2.1., 2.2. and 2.3.) that support the main objectives of the management plan, i.e. maintaining a favourable conservation status and maintaining the bear's wariness of humans. The subsections describe in more detail the various measures – such as 2.1. Profound and expanding knowledge on the bear population, which consist of the following sections: 2.1.1. Safeguarding and developing the monitoring of the bear population, and 2.1.2. Network of large carnivore contact persons. The individual measures can be found in a text box at the beginning of each subsection, and the text of the subsections describes the measures in more detail including their background, requirements and implementation.

Chapter 3 describes the management plan's "Other measures", which support the objectives of the management plan and the other sets of measures. Other measures include 3.1.) International cooperation, 3.2.) Translocation (note: the measure states that translocation will not take place), 3.3.) Diseases transmitted by bears and 3.4.) Communication.

Chapter 4 describes the implementation of the management plan. The sources used for the measures document are listed at the end of the document.

# 1 Main objectives of the Management Plan for the Bear Population: to maintain a favourable conservation status of the bear population and its wariness of humans

## *Measures:*

The Ministry of Agriculture and Forestry will ensure that the bear population in Finland maintains a favourable conservation status.

The measures in the Management Plan for the Bear Population are aimed at maintaining a viable bear population and its wariness of humans, thus minimising and preventing the harm and damage caused by the bear population.

The brown bear is a species listed in Annex IV of the Habitats Directive, which means that the management plan considers the favourable conservation status based on the requirements of the Habitats Directive. The favourable conservation status of a species is assessed in connection with the reporting on the implementation of the Habitats Directive following the procedure referred to in Article 17 once every six years. The criteria to be used to assess favourable conservation status are: 1. distribution, 2. range, 3. structure and function, and 4. expected evolution of conservation status. The conservation status is assessed by species for the different biogeographic regions. In Finland, assessments are prepared for the boreal and alpine regions. When interpreting the assessments, it should be noted that the boreal region covers almost all of Finland.

The conservation status of a species is considered favourable when:

1. population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and

2. the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
3. there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

All of the criteria listed above must be met for the conservation status of a species to be considered favourable. Population size alone is not a sufficient indicator to determine a favourable conservation status.

The assessment of the conservation status has been carried out three times: for the periods 2001–2006 and 2007–2012, and for the period 2013–2018. Each time, the bear was assessed as having a favourable conservation status in both the boreal and the alpine zones in Finland.

The bear has flexible habitat requirements. Habitats suitable for the bear can be found everywhere, with the exception of extensive farming areas and denser human habitation, so it is not threatened by habitat loss. The bear population has been developing favourably for a long time. In addition, our bear population is highly productive and has a strong connection with the bear population living in Russia (see background document Sections 2.2., 2.3. and 2.8.), so the Finnish bear population is viable. There are few threats to the favourable conservation status of the bear in Finland. Hunting as a threat to its conservation status has been assessed as being of low significance. Mortality through hunting is managed by continuous monitoring of the population, annual planning based on information gathered on the impact of hunting, a decree of the Ministry of Agriculture and Forestry on the maximum allowable bag limit for bears (quota), and derogations issued based on decisions of the relevant authorities. Continuous population monitoring will also ensure that up-to-date data is always available on the bear population to underpin decision-making. The actual development of the population shows that the changes in the bear population have been successfully addressed, both when the population has declined and when it has increased.

In the light of the above, it can be stated that one of the main objectives is to maintain a favourable conservation status of the bear population now and in the future. A favourable conservation status has been maintained even though the species has been hunted annually.

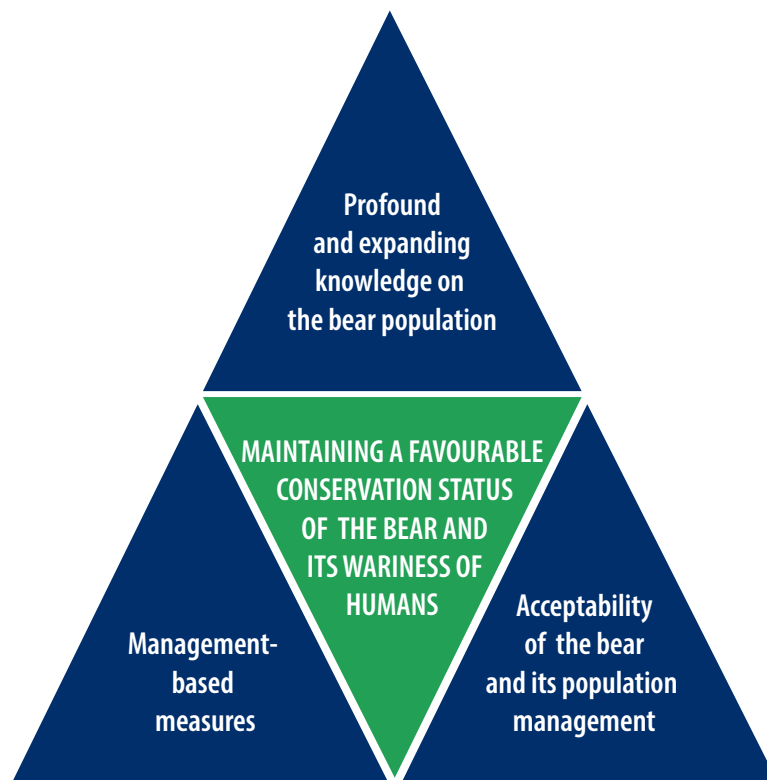
According to the 2022 population assessment by the Natural Resources Institute Finland, the total number of bears in Finland was estimated to be between 2,250 and 2,400 individuals before the hunting season starting in August 2022. The number of separate litters was estimated to have been 212 (in 2021).

The viability of the bear population is also assessed through the IUCN Red List of Threatened Species. In the 2019 assessment of threatened species in Finland, the bear was not found to be at risk. The bear was assessed to belong to the category Near Threatened (NT).

The bear population has had a favourable conservation status during every reporting period, and recent stable developments in the bear population do not require the establishment of a minimum viable population level.

However, based on the increasingly comprehensive data on the bear population over the last few years, it would be possible to define a number for a favourable reference population (or reference point), following the Swedish example. The reference point means the number of bears at which a favourable conservation status can be considered as achieved.

## 2 Key sets of measures in the Management Plan for the Bear Population



The sets of measures in the Management Plan for the Bear Population are 1) profound and expanding knowledge on the bear population, 2) management-based measures, and 3) acceptability of the bear and its population management. The measures will support the main objectives of maintaining a favourable conservation status for the bear population and its wariness of humans.

## 2.1 Profound and expanding knowledge on the bear population

### 2.1.1 Safeguarding and developing the monitoring of the bear population

#### *Measures:*

The general development work of the bear population assessment will be continued at the Natural Resources Institute Finland.

Natural Resources Institute Finland and the Finnish Wildlife Agency will explore the opportunity of more extensive utilising observations made by citizens to support the work of large carnivore contact persons and the monitoring of the bear population.

Border guards will record sightings of large carnivores in the TASSU system in accordance with a procedure agreed with the Natural Resources Institute Finland.

Genetic samples will be collected to support observational population monitoring.

The feasibility of producing a population assessment using the annual population assessment produced with moving averages in order to take better account of the variation in the activity of the observations and the reproductive biology of the bear will be investigated.

A key part of the monitoring of the bear population is the observations of bear litters provided voluntarily by large carnivore contact persons. The difficulty with the method is the regional and annual variation in observation activity, while its cost-effectiveness is by far its most important advantage. Variation in observation activity has, from time to time, changed the regional population assessment strongly from year to year. The population structure can also vary, especially in areas where the bear population is small. It is therefore appropriate to test the option of using a population assessment produced with moving averages alongside the population assessment prepared using current methods.



If the experience with the population assessment produced by means of moving averages is encouraging, consideration may be given to taking it into account in the population assessment.

The monitoring of the bear population using genetic methods is becoming more widespread around the world. For example, Finland's neighbours Sweden and Norway monitor their bear population based on genetic methods.

The Natural Resources Institute Finland is developing an additional method for monitoring the bear population based on genetic identification. The project consists of 11 reference areas in the territory of Finland outside the reindeer herding area. The DNA-based method will not replace the network of large carnivore contact persons, but comprehensive genetic data provides a reference point for the litter observation data, which helps in the interpretation of the litter observation data. The project will also develop an SNP panel for genetic analyses suitable for the entire Fennoscandian region. The project will be implemented in 2022–2024 and its main funding will be provided by the Ministry of Agriculture and Forestry. The project's sample collection involves volunteers from game management associations and the Natural Resources Institute Finland's field staff.

## 2.1.2 Network of large carnivore contact persons

### ***Measures:***

The network of large carnivore contact persons will be developed and its operations will be regularly monitored. The Finnish Wildlife Agency will organise training in observation and recording for all new large carnivore contact persons. The Finnish Wildlife Agency and the Natural Resources Institute Finland will organise regular training and development events for all large carnivore contact persons.

The required number of large carnivore contact persons will be trained to collect of bear faeces samples for DNA analysis.

In Northern Finland, the development of the network of large carnivore contact persons aims to increase the coverage of the observation network.

The Finnish Wildlife Agency will investigate, especially in Northern Finland, the willingness of representatives of professions that travel a lot in the wild to act as large carnivore contact persons and to submit bear observations.

The network of large carnivore contact persons in Northern Finland will be developed in such a way that experienced large carnivore contact persons trained by the Finnish Wildlife Agency will train new large carnivore contact persons in observation and recording and will be responsible for monitoring the observation activity in their area.

The areas and the size of the population of Finland's large carnivores, i.e. wolf, lynx, wolverine and bear, are regularly monitored on the basis of observations recorded in the Tassu system by the large carnivore contact persons. These include sightings as well as observations of tracks, faeces, dead animals (carrion) and mauling marks. Information of primary importance includes all litter observations and observations of large carnivores in the vicinity of human settlements. (Finnish Wildlife Agency.)

In Northern Finland, the number of large carnivore contact persons is significantly lower than in the rest of the country. Due to the relatively low population density in the area, it is difficult to form a network of large carnivore contact persons as extensive as in the rest of Finland. However, the network in Northern Finland can also be significantly improved.

The network of large carnivore contact persons has been systematically developed with the measures of the previous Management Plan for the Wolf Population in Finland published in 2015. However, the work should continue and, in Northern Finland, an arrangement should be tried out in the future whereby more responsibility would be taken locally in the development and maintenance of the network, as well as in the monitoring of the observation activity, as the resources of the Finnish Wildlife Agency are limited. The experiment would be carried out in cooperation with game management associations.

To maintain the reporting of observations at a good level, identifying the areas from which bear observations are no longer being received would be important. The development of electronic systems offers better possibilities for identifying these areas and improving the rate of reporting observations. The Skandobs mobile app developed by Sweden and Norway or a corresponding electronic program to support observations made by citizens could be used to expand the number of persons making observations and thus facilitate the work of the large carnivore contact persons.

When developing the network of large carnivore contact persons, the possibility of using large carnivore observations by persons whose work involves spending a great deal of time in the wild should also be taken into account. Such persons include, in particular, officials and employees of the Finnish Forest Centre, forest management associations,

Metsähallitus and the Reindeer Herders' Association, reindeer herders in the different reindeer herding cooperatives, rural affairs officers in municipalities and officials and public servants of the Finnish Border Guard.

## 2.2 Management-based measures

### 2.2.1 Population management areas

***Measure:***

The management areas for the Finnish bear population will be the reindeer herding area and the rest of Finland.

Finland will be divided into two areas for the management of the bear population: the reindeer herding area and the area outside the reindeer herding area, i.e. the rest of Finland. Therefore, it is not appropriate to divide the management of the bear population for the whole country into too small areas at the management plan level, where the management of the bear population in Finland is widely examined. Our bear population has not been stable but developing, so in a situation where, in any case, the state of our bear population is still developing in large geographical areas, and as we strive to account for factors besides ecological ones, it is not appropriate to manage the bear population on the basis of small regional units. Regional specificities, variations in bear population density and variations in damage and prey populations will be taken into account in the implementation of the measures in the Management Plan for the Bear Population at regional level. The Finnish Wildlife Agency takes regional factors into account when considering derogations for the hunting of bears for population management purposes. In future, the aim of bear population management will be to seek a balance between ecological, economic and social aspects. The up-to-date game information developed in recent years in wildlife and game administration and its use offer excellent opportunities for this.

The above-mentioned division into two population management areas also describes the current state of abundance of the bear population in these areas. In the reindeer herding area, the bear population is less dense than in the rest of Finland. On the other hand, observation data from the reindeer herding area are still limited. The lack of observation

data is largely due to a sparse network of observers. Based on the regional distribution of bear observations, the bear population in the region is most abundant near the eastern border.

The bear population in Finland is not evenly distributed, but there are clear areas with a higher concentration of bears. Elsewhere in Finland, the bear population is concentrated in the so-called established population area of Eastern Finland. In what is referred to as the dispersal zone (e.g. the Finnish Wildlife Agency in Central Finland and South Savo), the population has increased according to the 2021 population assessment. An evenly distributed bear population should not even be pursued as, in the management of the bear population in different parts of Finland, the typical conditions, human activities and livelihoods in each region must be taken into account.

In areas with a dense bear population it can be reduced from the current numbers, because once bears have dispersed to new areas, culling no longer has such a negative effect on the development of the bear population. In addition, depopulation of areas densely populated by bears is important to ensure social sustainability. Finland also still has suitable areas where the number of bears could stand to increase. Human settlements are concentrated in Southern Finland, and the core area of apiculture is also located there. Apiaries are particularly frequent in the southwestern part of Finland. There are distinctly fewer apiaries in Northern Finland, especially in the Lapland region. (Situation, game damage register, May 2022.) Hundreds of bear observations are already made in Southern Finland every year. However, there are still few breeding bear females in the region. Care should be taken in the management of the bear population in areas such as this, as it is possible that even a small increase in the number of bears could cause a relatively large amount of damage and problems. Large, cultivated areas are already reducing habitats directly suitable for bears, and denser human habitation and livelihoods in the area may contribute to a situation where the number of bears cannot be very large.

In the previous Management Plan for the Bear Population, approved in 2007, Finland was divided into four bear population management areas: the reindeer herding area, the area of established population, the area of spreading population and the area of developing population. Due to the growth of the bear population, it is no longer necessary to divide the country into so many population management areas.

## Reindeer herding area

### *Measures:*

In the reindeer herding area, the aim is to reduce the damage caused by bears by way of damage-based derogations and quota hunting (so-called interruption hunting).

The scaling of hunting in the reindeer herding area will monitor the development of damage caused by bears regionally and through total accumulation of damage.

The Ministry of Agriculture and Forestry, in cooperation with the Norwegian and Swedish authorities, will separately assess the need for any necessary measures to secure connections between the bear populations of Finland and Scandinavia.

Reindeer husbandry is an important source of livelihood in the reindeer herding area, and the majority of the costs of compensating for damage caused by bears is also focused on reindeer husbandry nationwide. The bear population assessment in the reindeer herding area involves more uncertainties than in the rest of the country, so the development of the damage caused by bears has presently been monitored in the reindeer herding area for the scaling of hunting. In future, uncertainty related to the bear population assessment in the reindeer herding area will be reduced by targeting measures to determine the number of bears in accordance with Section 2.1.2.

In the reindeer herding area, bear hunting takes place mainly with quotas set annually by the Ministry of Agriculture and Forestry for the eastern and western reindeer herding areas. In recent years, only a few bears have been killed on the basis of damage-based derogations.

Based on the observations of bears and the location of damage to reindeer by bears, the bear population in the reindeer herding area is oriented towards the east. Bear observations are made and reindeer killed by them are also found in greater numbers than usual in Western Lapland in the Muonio-Kittilä area, so the connections between the Scandinavian and Finnish-Russian bear populations seem to be developing in a favourable direction. The main direction of the gene flow on the western border of the

reindeer herding area has been from the Scandinavian bear population to the Finnish bear population (Kopatz et al. 2021), which is probably mainly explained by the higher density of the bear population in Northern Sweden compared to Northern Finland.

Bears that have been killed under the quota are mainly located in areas where the damage caused by bears is heavy. The organisation of hunting in the reindeer herding area under the eastern and western quotas will continue to be justified in order to maintain the possibility of compensating for differences in the density of the bear population between the eastern and western parts of the reindeer herding area. The division of the quota areas also makes it possible to target hunting at areas of bear damage throughout the reindeer herding area. Regionally staggered hunting also enables the movement of bears between the Scandinavian and Finnish-Russian bear populations.

The distribution of quota areas in the reindeer herding area is governed by the Government Decree on Derogations Laid down in the Hunting Act (452/2013). The eastern reindeer herding area includes Utsjoki, Inari, Sodankylä, Pelkosenniemi, Savukoski, Salla, Kuusamo and Suomussalmi, and the western reindeer herding area includes the other municipalities of the reindeer herding area.

The bear population estimate for the reindeer herding area is subject to more uncertainty than the estimate for the rest of the country, which is why it is not possible to set a population target for the number of bears.

## Rest of Finland

### *Measures:*

A favourable conservation status of the bear population and regional social sustainability will be ensured. The aim is to stabilise the population outside the reindeer herding area at the average level of recent years, while enabling the bear population to spread to a wider area. The aim is to ensure that bears are more evenly distributed in habitats naturally suited to bears in the population management area of the rest of Finland.

At regional level, the target density of the bear population is such that the harm and damage to human activities, farm animals and wild game remain socially, economically and ecologically acceptable.

Damage and fluctuations in local game populations will be taken into account in regional population management.

In areas with large habitats suitable for bears but a low number of bears, a moderate increase in bear numbers will be allowed, keeping the damage and problems caused by bears reasonable.

Eastern Finland and the western parts of Central Finland, as well as the eastern parts of Central Ostrobothnia and South Ostrobothnia, are currently the most important areas for the bear population in Finland. Near the eastern border, Kainuu and North and South Karelia have the highest bear densities.

In Finland, the number of bears can be increased in large areas. For example, the western parts of Kainuu, North Savo and the parts of North Ostrobothnia outside the reindeer herding area form such a large continuous area of habitats with little human activity that are highly suitable for bears. Such areas can also be found in other parts of Finland.

Particularly in Southern and Western Finland, the growth and development of the population is constrained by the lower number of habitats that are very suitable for bears, higher human population density and economic activity.

The Ministry of Agriculture and Forestry can point out in a background note to the decree what aspects should be taken into account in the allocation of bear population management-based derogations. For example, in a background note to the decree on bear hunting permitted on the basis of a derogation or a regional quota of the 2021–2022 hunting year (VN/13889/2021), the Ministry of Agriculture and Forestry deemed that the status of cervid populations in the area in relation to the bear population must be taken into account in the allocation of bear derogations in addition to the damage development of different areas. The note also states that attention must also be paid to safeguarding the wild forest reindeer population in Suomenselkä and Kainuu.

Setting population targets for the number of individuals is not appropriate, as the objective of bear population management is to find a balance between ecological, financial and social factors, which will together determine the population size.

## 2.2.2 Hunting for population management purposes

### ***Objective of hunting for population management purposes:***

Limited hunting of a bear population at a favourable conservation status aims to control the growth, size and distribution of the bear population. In addition, hunting aims to maintain the bear population's wariness of humans and to keep the socio-economic conflicts related to the bear population at an acceptable level.

The brown bear is a species of Community interest under the Habitats Directive. According to Article 1(g) of the Directive, species of Community interest are species that are endangered, vulnerable, rare or endemic. Although the bear population in Finland no longer meets any of these criteria, the species is still a strictly protected species in accordance with Annex IV to the Directive. Pursuant to Article 19 of the Directive, the Annexes should be adapted, if necessary, on a proposal from the Commission, but this has not been done even though the population of bears in Finland has increased during Finland's EU membership from around 800 bears to around 2,700 bears in 2022.

The Habitats Directive requires Finland to establish a system of strict protection and to prohibit all capture or killing of these bear individuals. However, Article 16(1) of the Habitats Directive allows Member States to derogate from the obligations imposed by the system of strict protection, provided that there is no satisfactory alternative and the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range. The most general objectives pursued by the derogations are the prevention of very significant damage under Article 16(1)(b) and public safety or other imperative reasons of overriding public interest under Article 16(1)(c).

The Finnish bear population is at such a high level that the removal of bear individuals that cause damage or a safety threat alone cannot control the social, economic or ecological problems of the growing bear population. As a result, Finland has successfully regulated the bear population under Article 16(1)(e) of the Habitats Directive. The use of this derogation criteria of the Directive requires that the objective pursued by the derogation from protection be disclosed in advance. The objective cannot, in principle, be the same as in Article 16(1)(a) to (d) of the Habitats Directive. In Finland, Article 16(1)(e) of the Habitats Directive is used for so-called population management purposes and has been implemented in Section 41(3) of the Hunting Act.



In Finland, the application of Article 16(1)(e) of the Habitats Directive concerns the management of the bear population.

Population management refers to influencing the size, growth and regional densities of the bear population through systematic adaptive hunting, which responds to fluctuations in the population. As the species is strictly protected by the Habitats Directive, the starting point for population management is that the species is at a favourable conservation status and that the planned changes in the population do not, under any circumstances, result in the bear population falling below a favourable conservation status.

It is essential that this population management is based on a scientifically sound and regularly produced population assessment which allows for the establishment of an annual hunting quota, the assessment of the impact of the quota on the conservation status of the population and the maintenance of the population at a favourable conservation status. When decisions are taken on an annual basis, it is possible to react to changes in the bear population, if necessary. In addition to the population assessment, accurate biological data (sex and age) and location data must be obtained on the bear individuals killed by hunters. According to Section 3(1)(2) of the Government Decree on Derogations Laid down in the Hunting Act (452/2013), a derogation may be granted for the capture or killing of a bear, except for a cub less than one year old or a female bear accompanied by such a cub.

Main aims of hunting bears for population management purposes:

- maintain the bear's wariness of humans, which reduces potential conflicts;
- limit the rate of growth of the population in areas where the bear is only returning or where the bear population has been sparse in order to ensure adaptation to the species and thus its acceptability;
- maintain the density of the bear population at a level where the harm and damage to human activities, farm animals and wild game remain socially, economically and ecologically acceptable.

In addition to the above, the success of the measures of the Management Plan for the Bear Population will be ensured, the adaptation of hunters to the presence and diet of the bear will be improved, and the influence of local people will be increased in order to address the problems arising from the presence of the bear (e.g. fears among berry and mushroom pickers caused by a dense bear population). There are also regional objectives or targets for different population management areas (see the section on the reindeer herding area and the rest of Finland for more information).

## Relevant legal praxis

According to the legal praxis (KHO: 2014:125), when deciding on an application for a management-based derogation granted on the basis of Section 41a(3) of the Hunting Act, the existence of another satisfactory solution, as provided for in Section 41a(1) of the Hunting Act, and the impact of the decision on the maintenance of the favourable conservation status of the species in its natural range must also be taken into account. According to a judgment of the Court of Justice of the European Union (10 October 2019, case C-674/17, paragraphs 41, 51, 54 and 62), the objectives relied upon in support of a derogation must be defined in a clear and precise manner and with supporting evidence in the decision. A derogation must be applied appropriately in order to deal with precise requirements and specific situations.

In two judgments on the wolf (342/05 (Commission v Finland) and C-674/17), the Court of Justice of the European Union has ruled on the application of Article 16 of the Habitats Directive to large carnivores. The judgment of the Court of Justice (C-674/17) concerns the hunting of the critically endangered wolf for population management purposes, the primary objective being the elimination of poaching. The bear has not been endangered in Finland since the assessment in 2015 (Red List). In the case of hunting bears for population management purposes, the bear is, in accordance with the objectives of the Habitats Directive, at a favourable conservation level, and its hunting has never been based specifically on combatting poaching, since the bear is a valued game animal. Bear hunting is based on population management considerations, such as maintaining the bear's wariness of humans and controlling the growth of the population in a way that takes into account ecological, social and economic considerations. Maintaining the bear population's wariness of humans is based on a significant part of the population being regularly hunted every year. Bear hunting indirectly affects several individuals in a continuous shared range, which also has regional concentrations, even if not all bear individuals are directly targeted or killed. For example, a derogation based on public safety is limited to a single predefined individual. If there was zero mortality in a strongly growing bear population, the population would increase by approximately 16% per year. Judgment C-674/17 cannot therefore be regarded as an obstacle to the granting of management-based derogations for bear hunting, but the considerations specified in the grounds of the judgment must still be taken into account when assessing whether the prerequisites for a bear derogation are met.

### Impact on the objective of achieving a favourable conservation status

Article 16(1) of the Habitats Directive allows Member States to derogate from the obligations imposed by the system of strict protection, provided that there is no satisfactory alternative and the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range.

In case 342/05 (Commission v Finland), the Court of Justice ruled that a derogation from protection may be based on a predefined limited quota. Furthermore, in case C-674/17, the court ruled that derogations from strict protection must not infringe the condition laid down in Article 16(1) of the Habitats Directive, which is to maintain the species at a favourable conservation status in its natural range. Both cases concerned the wolf, the conservation status of which was not favourable and which has been classified as a highly endangered species in Finland.

The bear population in Finland has a favourable conservation status. Article 17 of the Habitats Directive requires Member States to draw up a report on the implementation of the measures taken under the Directive every six years. The reporting also includes an assessment of the conservation status of the species. In the three reporting periods (2001–2006, 2007–2012 and 2013–2018) during Finland's EU membership, the bear's conservation status has been estimated to be favourable in all respects.

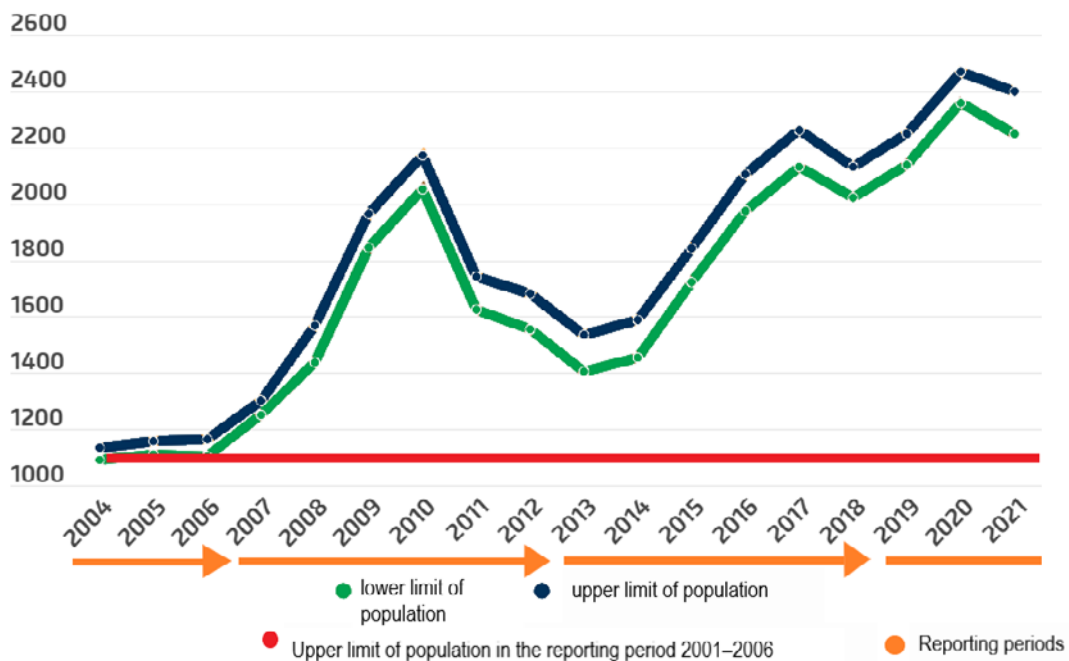
In the light of the above, the Ministry of Agriculture and Forestry has taken the view that as

- the bear is already at a favourable conservation status,
- the population assessment of the bear has a strong scientific basis,
- the impact of hunting on the bear population and its favourable conservation status can be assessed, and
- accurate and identifiable data on kills are available,

the size, growth and regional densities of the bear population can be influenced through systematic adaptive hunting on the basis of Article 16(e) of the Habitats Directive, thus ensuring the protection objectives of the Habitats Directive and their broad acceptance by society.

The impact of hunting on the objective of the Habitats Directive – the achievement of a favourable conservation status – is always neutral when the population is at a favourable conservation status and the hunting is scaled in such a way that the favourable conservation status is not compromised. The actual development of the bear population in Finland shows that the Ministry of Agriculture and Forestry has been able to ensure and strengthen the favourable conservation status of the bear population.

**Figure 1.** Development of the bear population in Finland in 2004–2021, with the red line representing the upper limit of the bear population estimate in the boreal region of the favourable conservation status of the species required by the Habitats Directive in the reporting period 2001–2006. At that time, the upper limit of the population estimate (maximum population) was 1,100 bear individuals. In the three reporting periods (2001–2006, 2007–2012 and 2013–2018) during Finland’s EU membership, the bear’s conservation status has been estimated to be favourable in all respects. Source: Evolution of the bear population: Natural Resources Institute Finland. Reporting periods have been added to the image.



### Targeted effects of bear hunting

The benefits of hunting large carnivores have been highlighted in a report commissioned by the European Commission (2008) from the Large Carnivore Initiative for Europe (LCIE). The LCIE is a community of European experts on large carnivores, whose status has also been confirmed by the Specialist Group on the Species Survival Commission of the International Union for Conservation of Nature (IUCN). The LCIE report presents best practices for large carnivore population management. The Commission has recommended the guidelines contained in the report to the member states.

Based on the report, at least the following benefits of bear hunting for population management purposes in the Finnish conditions have been identified:

- Management-based hunting helps maintain the bear's shyness of humans, which reduces potential conflicts.
- Management-based hunting increases hunters' tolerance of the presence of the bear, as they can regard the bear as a valued game animal rather than as a competitor.
- Management-based hunting increases the opportunities for influence of the local people, who have to live in the same areas as bears.
- Management-based hunting retains bear densities at levels that keep the damage to farm animals and wild game at an acceptable level.
- In areas to which bears are just returning, management-based hunting can increase long-term acceptance if the population growth rate slows down.
- In addition, local residents will feel that they are involved in the process of managing the species.
- Achieving a population that enables hunting is a benchmark for the success of the conservation efforts and also demonstrates the flexibility of the Management Plan for the Bear Population for the different stakeholders.

Management-based hunting aims to achieve several of the above benefits by taking ecological, economic and social factors into account on an equal footing in setting the objective of management-based hunting. These aspects are interdependent, which is why their effects as a whole must be considered. Furthermore, hunting for population management purposes aims to stabilise the population levels by adjusting the bag limits based on the development of the population.

The LCIE Guidelines for Population Level Management Plans for Large Carnivores (2008) was preceded by European-level species-specific action plans for large carnivores. The Action Plan for the Conservation of the Brown Bear (*Ursus arctos*) in Europe, published by the Council of Europe and the LCIE in 2000, states that regulated hunting is not a problem for a viable bear population if the size and demographics of the bear population are monitored. Legal bear hunting can also increase the acceptability of bears and thus facilitate the protection of a viable bear population. The document also makes recommendations regarding the management of the bear population and encourages the preparation of a national Management Plan for the Bear Population, as well as highlighting issues that should be covered in the plan. According to the plan, hunting could only be allowed for populations that have been identified as viable and where targets for hunting are set with management plans. International law and the Habitats Directive must also be taken into account. Hunting makes it possible to regulate the growth of the bear population and also to stabilise the population. (Swenson et al. 2000.) The Standing Committee of the Bern Convention stated in 1999 (Recommendation No 74 (1999)) that action plans for large carnivores (such as that for bears) are to be

considered as guidelines for the national authorities. In addition, the Standing Committee recommends that the Parties to the Convention consider taking them into account or implementing them in the preparation of their national management plans.

Bear hunting is a valued form of hunting in Finland, and the bear is a respected and highly regarded quarry. Bear hunting also has a long tradition.

More detailed grounds for hunting bears to manage the population are described in the background note to the Ministry of Agriculture and Forestry Decree. In paragraphs 71–74 of the judgment for a preliminary ruling C-674/17, it is stated that the number of animals killed by way of derogation depends in each case on the size of the population, the conservation status of the species and its biological characteristics. The management plan and the maximum number of bear individuals to be hunted, which is set annually by a decree of the Ministry of Agriculture and Forestry, can be used to ensure that the combined annual effect of the individual derogations will not undermine the maintenance of a favourable conservation status of the species in its natural range.

### **Information on the bear population as a basis for hunting**

The maximum number of bear individuals that may be hunted through management-based hunting is based on up-to-date scientific studies and population model calculations. The population model prepared by the Natural Resources Institute Finland specifically provides a forecast of the development of the bear population based on observed development trends and bag sizes. Key factors that play a role in the regulation of hunting are the size and development of the bear population. The Natural Resources Institute Finland produces bear population data that is as up to date as possible to support decision-making on hunting regulation, and the Ministry of Agriculture and Forestry issues decrees on bear hunting on this basis. The Finnish Wildlife Agency sets national and regional bag limits and issues derogations on application as part of its public administration duties.

The establishment of a Directive-related bag limit working group in the Finnish Wildlife Agency marked another important improvement in the planning of bear hunting. The working group draws on its collective expertise and best available data on the culling of the bear population, and it also strives to use the opinions of the regional wildlife councils on regional bear statuses in its work.

The values associated with the bear in Finnish society consist of both the bear as a valued animal as part of Finnish nature and the value of the bear as a game animal. The bear is also an important predator that has a direct or indirect impact on the populations of various species. The predatory effect of the species is taken into account when planning the bag limits.

The regional wildlife councils aim to promote a constructive discussion on bear population management based on high-quality game data. The resulting view on the success of regional bear management will be disseminated to the field through timely communications.

### **Maintaining the bear's wariness of humans**

Bear hunting for population management purposes aims, among other things, to maintain the bear's wariness of humans. The aim is to achieve this effect through regular annual hunting, which targets a significant part of the population. Hunting helps maintain bear densities at levels that will keep the harm and damage to human activities, farm animals and wild game at an acceptable level. Wildlife and game administration has also recommended targeting hunting on bear individuals that move close to human habitation, precisely in order to maintain the bear population's wariness of humans.

The bear usually moves away from people to avoid notice. It may be found moving around in the middle of the day, but usually bears move at night and at dusk (Finnish Wildlife Agency 2021). According to a study in Finland and Scandinavia (Moen et al. 2019), bears tend to avoid people and are not normally aggressive in encounters (see also similar studies Ordiz et al. 2013 and Moen et al. 2012). This supports the conclusion that the management of the bear population has been successful in Finland in this respect. Observations of large carnivores are primarily the responsibility of the authorities when a large carnivore poses a threat, a danger or a serious threat to human life or health. The Management Plan for the Wolf Population (2019) introduced a 4-step table on how to define the behaviour of a wolf that has lost its wariness of humans. The management plan sets out concrete action thresholds for both the police and the Finnish Wildlife Agency in situations where the wolf's behaviour poses a danger or threat. In situations where the large carnivore that causes a threat or danger to a person is a bear (or a lynx or a wolverine), the procedure is based on the wolf guidelines (National Police Board 2022). (See more on this subject in Section 2.3.4.).

The behaviour of GPS-collared bears in relation to human approach attempts has been analysed on the basis of research experiments conducted in Sweden and Finland between 2004 and 2012. Bears living in Finland lived in areas with more people than in Sweden. (Moen et al. 2019.) Results similar to before were obtained in approach tests of bears in

Finland and Sweden as before: bears avoid people (Moen et al. 2019, see also Ordiz et al. 2019). This general feature of bear behaviour can be explained, for example, by the fact that bears are regularly hunted in Sweden and Finland and the bag sizes are similar. The history of the bear populations is also similar in the respect that the bear populations in Finland and Scandinavia declined sharply in the late 1800s and early 1900s. (Moen et al. 2019, see also Swenson 1999 and Majić Skrbinšek & Krofel, 2015.) The typical behaviour of large carnivores living in human-dominated landscapes is also considered to be elusive (Moen et al. 2019).

However, there may be changes in behaviour due to bears becoming accustomed to humans. In North America, for example, there have been reports of bears becoming accustomed to humans in certain areas, which has also led to problems. For example, it is possible that habituation can occur in situations where there are clumped food sources and a non-aggressive human presence. (Ordiz et al. 2019.) The possible causes of conflict situations caused by bears and other measures to prevent and respond to them are discussed in Sections 2.3.1., 2.3.3. and 2.3.4. of the management plan. The impact of hunting on bears in Scandinavia has also been studied. For example, bears have been found to have changed their movements during the hunting season (Ordiz et al. 2012).

### 2.2.3 Multi-species approach

#### ***Measures:***

The Natural Resources Institute Finland will produce data for multi-species population management purposes, especially with regard to interactions between and within large carnivore populations and ungulates, as well as other population-regulating factors.

The Natural Resources Institute Finland will produce information on the impact of dense bear populations on ungulate populations and, in particular, on the calf yield of wild forest reindeer.

The current status of the wild forest reindeer population will be taken into account in the allocation of derogations for large carnivores – the bear and the lynx, in particular – especially in areas where both wild forest reindeer and a wolf pack are present.



Bears feed on cervids, and their predation targets calves in particular. In the current presence and abundance of bears in Finland, the predation of bears towards elk and wild forest reindeer may be regionally or locally of such magnitude that it must be taken into account in the management of these game populations. However, predator/prey relationships are very complex, simply because in general there are both a number of large predatory carnivore species and a number of ungulate species suitable for prey.

In the management of the elk population, the effects of large carnivores have been taken into account more widely in recent years (see e.g. Management Plan for the Elk Population, 2014). The model used by the Natural Resources Institute Finland for the assessment of the elk population and the recommended bag limits based on it have now also taken into account the impact of large carnivores on the elk population by elk management area. However, in many areas close to the eastern border, the planning of elk hunting has failed because the elk population may have fallen to such a low level that there have been years when elk hunting has not been permitted or the number of elk hunting permits in the areas has been very low. Such situations should be avoided. The elk population should remain such that elk hunting remains a recreationally, socially and economically significant leisure activity. If the elk population is low, the acceptance of large carnivores may also decrease. There are examples in Sweden of illegal killings of bears occurring particularly in areas where bears have killed a lot of elk calves.

The eastern border and its surrounding areas differ from the rest of Finland in that the ecological impacts of large carnivores, such as the bear, are likely to be greater than in the rest of the country. The populations of large carnivores have become stable and abundant both along the eastern border and in the large wilderness areas on the Russian side of the border. In addition, in Kainuu, North Karelia and the northern parts of North Ostrobothnia, the feeding of carrion to large carnivores is popular near the eastern border. The long-term ecological effects of the supplemental feeding of large carnivores are not known. For more information on the bear's impact on cervid populations, see Section 2.9 of the background document.

The Kainuu subpopulation of wild forest reindeer declined to less than half of its level in the peak years from the beginning of the 2000s, until the size of the wintering population varied between 700 and 850 individuals in 2015–2022, with a decreased range. In the last few years, the population has been growing slightly. On the other hand, the subpopulation in Suomenselkä has been increasing, and the population has gradually spread to new summer pastures along Suomenselkä towards the north. According to the latest estimate by the Natural Resources Institute Finland, there were about 2,000 wild forest reindeer in the Finnish wintering area of South Ostrobothnia (Natural Resources Institute Finland 2022b). The decline of the Kainuu population is now more moderate than in the worst years, but the population is still in danger of disappearing in a few decades

if the decline continues as before (Paasivaara 2022). The calf yield of wild forest reindeer has weakened along with the decline in the population, and the proportion of females with young is now significantly lower in autumn herd censuses than at the turn of the millennium (Natural Resources Institute Finland, unpublished data). The decrease in the calf yield is probably not due to poor fertility or calving of forest reindeer does, because the does with research collars in Kainuu calve normally. On average, about 85% of does produce a calf annually (Natural Resources Institute Finland, unpublished collar data 2004–2022). During summer, calves generally disappear quickly without leaving any trace, so it is difficult to determine the exact cause of death. Observations and indications have been received in the calf monitoring that the calf mortality is due to large carnivores in particular. On the other hand, the number of dead calves of collared wild forest reindeer lost to illness has been very low so far (Paasivaara 2016). The bear also preys on adult wild forest reindeer, but the bear contributes considerably less to the mortality of collared adult wild forest reindeer than the wolf (Paasivaara 2016). The diet of large carnivores, and bears in particular, should be studied more closely in wild forest reindeer areas.

The population of wild forest reindeer in the Republic of Karelia in Russia has also declined strongly in the last few decades and, like the population in Kainuu, is in danger of dying out in a few decades (Paasivaara 2016). The main reason for the decline of the wild forest reindeer population in the Republic of Karelia is considered to be illegal killing (Panchenko 2010 and Danilov et al. 2014). This means that the declining wild forest reindeer population in the Republic of Karelia will not be able to replace the Kainuu population if the latter disappears.

The development of the wild forest reindeer population is monitored by the Natural Resources Institute Finland. Reintroduction and restocking of the species have also been carried out in South Ostrobothnia, Pirkanmaa and the border regions in Satakunta, as well as in western Central Finland, in connection with a project called WildForestReindeerLIFE (2016–2023). It must be noted, however, that the creation of a viable wild forest reindeer population in completely new areas may take decades. It also requires local regulation of large carnivore populations through hunting as well as enhanced monitoring of and research into large carnivores and cervids.

The core areas of wild forest reindeer are small in surface area, especially in Kainuu. In Suomenselkä, however, the wild forest reindeer spreads out in summer over a relatively large area, which now extends from the Ähtäri plain to Central Finland, to the western edges of North Savo, to the coastal areas of Ostrobothnia and to the reindeer herding area in North Ostrobothnia. The spreading of the restocked population of Suomenselkä is likely to continue if suitable wild marshlands are available. Wild forest reindeer nowadays have distinct winter and summer grazing areas in both subpopulations, which are well known through collaring, aerial censuses and other observations. On the other hand, the summer

and winter grazing areas seem to be constantly shifting. In order to halt the decline of the Kainuu population, efforts should be made to increase the calf yield of wild forest reindeer and reduce the mortality rate of adults. Thus, it must be possible to limit the number of bears and other huntable large carnivores in and around the summer grazing areas of wild forest reindeer. In addition, the current core calving areas of Kainuu wild forest reindeer are located near the reindeer herding area, so limiting the number of bears is also likely to reduce the damage to the reindeer of the southernmost reindeer herding co-operatives. The location of the current wild forest reindeer calving areas along the southern border of the reindeer herding area emphasises the importance of the work on the genetic purity of forest reindeer. Due to the small size of the summer grazing areas of Kainuu wild forest reindeer, limiting the number of bears in these areas will not have a major impact on the management of the entire bear population in Finland.

Ecological research and monitoring should be targeted and strengthened, especially in problem areas and where the ecological impacts of the bear population are potentially high, such as the core areas of the wild forest reindeer. Overall, research and monitoring of interactions between large carnivores and their prey should be continued and expanded. In the management of game animals, the perspective of the entire predator-prey community must be taken into account. Research on only one species such as the bear or wild forest reindeer does not provide sufficient information for the population management needs of the multi-species cervid-carnivore community – especially in the long term.

The coexistence of cervids and large carnivores in the same areas is a balancing act between the regulation of cervid populations and the regulation of large carnivores. The regulation of the more abundant cervid populations together with the regulation of large carnivores will determine the occurrence or population development of rare species, such as the wild forest reindeer (Wittmer et al. 2013). Large carnivores, especially the wolf and the bear, feed on the cervids that are most widely available and have the greatest nutritional benefit. In Finland, the main cervid-derived meat diet for bears and wolves is made up of elk and, in the southern parts of the country, probably also white-tailed deer. If the elk or white-tailed deer population declines for any reason, the large carnivore population must also be adjusted to the level determined by its main food source. Otherwise, there is a risk that a rare prey species will disappear when large carnivores use alternative prey that cannot withstand the increased predatory pressure. There is always a risk of the disappearance of a rare species, even if the populations of the main prey species are high (pseudo-competition, see e.g. Wittmer et al. 2005 and Wittmer et al. 2013). The wild forest reindeer has a high risk of losing out in a pseudo-competitive situation, as it loses out to the elk and the white-tailed deer in the rate of reproduction. A wild forest reindeer rarely produces twin calves.

The Management Plan for the Forest Reindeer Population in Finland was adopted in 2007. It will be updated as part of the WildForestReindeerLIFE project. In order to improve the management of cervid and large carnivore populations, more research data should be available, for example on the direct and indirect effects of large carnivores on their prey, such as wild forest reindeer. In order to integrate the management of populations of large carnivores and cervids, knowledge of the interactions between them is important from an ecological, economic and social point of view. The current wild forest reindeer ranges are also special areas for research, as they have more abundant elk and rare wild forest reindeer, but also all large carnivore species. In addition, the proximity of the eastern border in Kainuu and the supplemental feeding of large carnivores create special conditions for research.

#### 2.2.4 Oversight of hunting

##### ***Measures:***

The powers of game wardens in Metsähallitus will be expanded so that compliance with hunting regulations can also be monitored on private land. In addition, the powers related to securing the preliminary investigation of suspected aggravated hunting offences would be expanded.

Wildlife liaison officers at supervisory level appointed to police departments coordinate the planning and implementation of oversight in the police department's area.

To enhance the oversight of hunting the Ministry of Agriculture and Forestry will prepare a government decree to restrict the baiting of large carnivores with carcasses.

In most cases, hunting offences against bears have been committed in connection with legal hunting. The use of a food bait when hunting is regularly observed. Protected cubs less than one year old and female bears accompanied by such cubs also end up being killed. However, the shooting of cubs less than one year old and female bears accompanied by such cubs is probably more due to the hunter's lack of care in the shooting situation than to an intentional act.

Reports of unauthorised killings of bears are rare. The risk of being caught is low, however, and illegal hunting may actually be more commonplace than the figures indicate. Nevertheless, at least from the point of view of bear population management, illegal killing does not have the same significance as it has had for wolves (see e.g. Management Plan for the Wolf Population in Finland 2019).

According to Section 33 of the Hunting Act, bears must not be hunted using carrion or man-made bear bait based on food or scent and, except in a grass field, bears must not be shot on a field where the crop has not been harvested, and bears must not be chased from or shot at the den. Efforts have been made to prevent the use of food bait in bear hunting by increasing the penalties. Within the limits of the powers of the Hunting Act, the Hunting Act was supplemented to restrict the above-mentioned activities in 2017 by adding a new Section 34a. According to the section, a Government Decree may regionally prohibit deliberate baiting of game animals using carrion or other man-made bait based on food or scent of animal origin and food products intended for human and domestic animals during the period from 1 June to 9 September, if it is necessary to improve the monitoring of the prohibition on the use of food bait provided for in Section 33(2)(3) of the Hunting Act. So far, the use of food bait has not been prohibited by government decree in any region.

However, according to Section 34a(3) of the Hunting Act, the prohibition provided for by government decree does not apply to an undertaking whose business activity or sector recorded in the Trade Register is nature photography and viewing activities. Such a company is subject to the provisions of the Consumer Safety Act (920/2011). A government proposal to amend the above-mentioned Hunting Act states that the section was added in order to improve, if necessary, the monitoring of the hunting of species. It also points out that, especially in bear hunting, luring bears to a specific location with bait before the start of the hunting season has increased in recent years. When such food bait is removed before the start of the hunt, the hunter is not directly guilty of a hunting offence. However, this kind of activity puts hunting parties in an unequal position, because not everyone has adopted this kind of grey-area tactic.

Over the last few years, the regulatory authorities have increasingly found evidence of the use of scent and food bait in bear hunting, including with a view to facilitating the finding of bears. Food bait has often included foods that are not part of the bear's natural diet, such as dog food. Restricting the use of food bait is also aimed at preventing large carnivores from getting used to the smell of humans as they visit food bait placed by humans in the wild and at preventing the use of food bait in bear hunting.

According to the Animal By-products Act (517/2015), the use of Category 2 animal by-products is prohibited in the territory of the municipality in question if bear hunting is permitted. Once the bear shooting permits granted for population management purposes in the area have been used up, the use of Category 2 animal by-products is allowed once more. It is the responsibility of the keeper of the carrion feeding site and the regulatory authority to monitor the use of bear shooting permits in the area.

A bear that has been killed under a derogation must be reported to the Finnish Wildlife Agency, the police and Metsähallitus' game warden on the first working day after the bear is killed. For example, a bear killed on a Saturday can be reported the following Monday. A bear that has been killed in connection with quota hunting in a reindeer herding area must be immediately reported to the Finnish Wildlife Agency.

Investigation of crimes against large carnivores often requires a lot of resources and great professional skill. The penalties for crimes against large carnivores have been set at a high level, so the eradication of crimes against large carnivores has been considered important in our society. The resources of the authorities responsible for oversight of hunting must therefore be safeguarded. However, as the financial capacity of public finances shrinks, the resources of public authorities may weaken instead. For this reason, the powers of Metsähallitus game wardens should be expanded so that compliance with hunting regulations can also be monitored on private land. In addition, the powers of game wardens related to securing the preliminary investigation of suspected aggravated hunting offences should be expanded.

At the moment, each police department has a wildlife liaison officer and also police officers trained in hunting supervision who carry out hunting supervision duties and tasks linked to large carnivores, among other tasks, in cooperation with other authorities. The coordination of police hunting control and large carnivore activities is managed by the National Police Board of Finland, with regional liaison officers managing the planning and coordination of activities at their respective police departments.

The statutory public administrative task of the game management association is the implementation of supervision of hunting. Hunting wardens of game management associations monitor the legality of hunting and game management in their operating area and, if necessary, inform the authorities responsible for controlling the compliance with the Hunting Act, the Finnish Wildlife Agency, the holders of hunting rights and the owners of hunting rights, and thereby assist the police and other authorities. In practice, this means the prevention of offences, which takes the form of awareness-raising, information and guidance for hunters and influencing opinions and attitudes at control events. Hunting wardens of game management associations may also intervene

in observed offences within the limits of their powers. One of the criteria for allocating the subsidy to game management associations is the supervision of hunting (Act on Game Management Fee and Hunting Licence Fee 616/1993).

The obligation laid down in the Hunting Act (Section 30) to appoint a hunt leader when hunting for large carnivores ensures that the parties exercising oversight of bear hunting have a better awareness of who is responsible for bear hunting. If necessary, the Oma riista service can be used to distribute information about bears and bear hunting to these persons, thus improving the preconditions for legal and ethically acceptable hunting.

### 2.2.5 Developing selective and ethical hunting

#### ***Measures:***

The Finnish Wildlife Agency will regularly provide training to designated hunt leaders for bear hunting for population management purposes. The training will focus on the ethics, responsibility and safety of hunting.

The Finnish Wildlife Agency and game management associations will regularly arrange training for bear hunters to promote selective and sustainable hunting, among other matters.

The Finnish Wildlife Agency will produce training materials to support bear hunting.

Thousands of hunters are involved in the hunting of bears in Finland (Finnish Wildlife Agency 2020). According to Section 30 of the Hunting Act, the holder of a bear derogation must appoint a hunt leader and the necessary number of deputy leaders. The appointment of a hunt leader and deputies is a comprehensive way of reaching the people who direct bear hunting. The communication functions of the Oma riista service make it possible to reach groups of bear hunters working under the management of permit holders and hunt leaders, and to disseminate information on the selectivity and ethics of hunting in real time.

According to Section 23 of the Hunting Decree, the leader of a hunt for bear, wolf, wolverine or lynx must:

1. plan the hunting events in practice;
2. give the participants to the hunt the necessary orders concerning hunting and the safety measures to be complied with; and
3. ensure that the terms of the hunting permit and provisions concerning hunting are complied with.

In cooperative hunting, a hunt leader or deputy hunt leader must be present during the hunt. However, the hunt leader or deputy hunt leader does not need to be present if the hunt is conducted by so-called stand hunting. Cooperative hunting refers to a hunting event in which more than one hunter is present.

The Finnish Wildlife Agency and game management associations have been training hunt leaders and those involved in the hunting of cervids, especially elk, for a long time. The training has been organised both at in-person training sessions convened by game management associations and through the development of various guidebooks, poster sets and model guides. Educational material has been produced, for example, on hunting management, the population management system, elk biology, elk age identification and selective elk hunting.

However, training of a similar nature has rarely been organised for bear hunters and it has generally involved practical bear hunting, having experienced bear hunters serve as instructors, sharing their know-how with the participants. In recent years, however, remote training has been organised for bear hunt leaders and permit holders, and the recording can be viewed at Riistainfo.fi. The course on basic skills for cervid hunt leaders on the same website is also recommended material for large carnivore hunt leaders. The problems associated with the current bear hunting methods have strong similarities with the topics of elk hunter training. More training should be given to hunters in the identification of protected bear cubs under one year of age. Public awareness of the law would make hunters more aware of the many legal aspects of bear hunting. The importance of cooperation between hunters and the authorities responsible for controlling hunting in preventing hunting crime should also be emphasised in guidance. For example, representatives of the police, Border Guard or Metsähallitus game wardens often participate in training sessions aimed at elk hunt leaders.



It should be noted, however, that the number of people involved in bear hunting is considerably lower than in elk hunting. For this reason, guidance and guides, both printed and electronic, are emphasised in the organisation of guidance and training. For example, in bear hunting, all persons intending to hunt for bears are contacted when a compulsory shooting test is carried out.

Bear hunting is a challenging and demanding form of hunting, and the fact that the bear is dangerous when injured must be taken into account in hunting. Training for bear hunting should also cover safety and risk considerations.

During the update of the management plan, a survey of recipients of bear population management derogations was carried out. The respondents felt that there was a need to develop the training for bear hunters to include less practical hunting training and more information on topics such as legislation, safety, selectivity, population management and leading a hunt.

A female bear followed by a cub under one year of age and all cubs younger than one year are always protected. For the management of the bear population, it is important that hunting is targeted as much as possible at potentially problematic bears or bears visiting nearby settlements. These include sub-adult, especially male bears that go near settlements and are not afraid of humans or cause economic losses, but cannot be identified due to the density of the bear population. Management-based bear hunting aims, among other things, to maintain the density of the bear population at a level where the harm and damage to human activities, farm animals and wild game remain socially, economically and ecologically acceptable. The removal of bear individuals that cause damage or a safety threat cannot, among other things, maintain bears' wariness of humans, limit the growth of the bear population (approximately 16% per year) or reduce the density of the bear population. The decree note (2021) states that the ministry considers it important that the decision-making of population management derogations take into account the damage and problems caused by bears in a better and more flexible way. A freer allocation will, for example, provide flexibility for the more appropriate use of joint permits at the borders of different management areas. In addition, damage development in different regions should be taken into account in the allocation. (Record no. VN/13889/2021.)

It is possible to create communications aimed at hunters by means of the communication functions developed for the Oma riista service, which can be used, for example, to communicate the progress of bear quota hunting or the targeting of the hunting to certain areas. The service offers new opportunities for real-time communication, where information can be accurately communicated to bear hunters in a particular area.

Bears are mainly hunted in Finland with the help of dogs and hunting parties. Attention should be paid to the use of dogs in bear hunting. Good hunting dogs are a prerequisite for effective bear hunting. However, sustained chases using dogs and taking turns with several dogs may be harmful for the targeted bear individual. The hunt leader must ensure that the ethical principles of hunting are taken into account in the hunting of bears, also with regard to the use of dogs. In the future, for example, the training and guidance for hunt leaders must ensure that sufficient conditions for the use of hunting dogs are maintained in order to implement ethically sustainable bear hunting. If necessary, this issue will be provided for in legislation.

## 2.3 Acceptability of the bear and its population management

### 2.3.1 Preventing damage

#### ***Measures:***

The Finnish Wildlife Agency will ensure that sufficient supplies of protective materials are available to prevent damage caused by bears.

The Finnish Wildlife Agency will advise beekeepers and farmers on preventing damage caused by bears. The targeting of protective measures to the most potential risk areas will be developed.

International experience (Sweden and other countries) will be taken into account in the prevention of damage caused by bears and other large carnivores.

Bear depredation is mainly focused on the reindeer industry, but it also causes considerable damage to apiaries. Bear depredation on domestic animals mainly affects sheep and, to some extent, cattle and horses. In addition, bears sometimes damage bales of fodder. In 2021, the calculated compensation for damage to reindeer caused by bears amounted to EUR 1.5 million. According to the game damage register, the economic losses of agriculture amounted to approximately EUR 85,000, depredation on sheep EUR 23,000 and damage to bees EUR 118,000.

The statutory task of the Finnish Wildlife Agency is to promote the prevention of damage caused by game animals. Damage caused by bears has been prevented mainly by the use of electric fences, because such fences have proven to be an effective means of protection when properly installed and regularly maintained. Many other protection measures have proven to be suitable for temporary protection only, mainly in acute damage situations. In the case of domesticated free-range reindeer, prevention of depredation is almost impossible.

The brokering of electric fences for the prevention of bear damage to bees is appropriate in current practice. Beekeepers can order them directly from a company offering fence packages. As far as electric fences for the protection of grazing animals are concerned, the principle of cost correlation has been in place for a long time. This means that the Finnish Wildlife Agency uses case-by-case discretion when it comes to the costs incurred by the state from protecting a site, comparing them to the value of the interest to be protected. Where the value of the protected site is less than the value of the support to protect it, it is not justified to protect the site with public funds. As the implementation of protection measures for grazing animals also requires planning at each site, the current practice is appropriate.

The work effort used to promote the prevention of damage caused by game animals has partly increased at the Finnish Wildlife Agency with the LIFE BOREALWOLF project, which has provided resources to prevent, for example, conflicts and damage caused by wolves. In the future, it must be ensured that similar human resources are available in the Finnish Wildlife Agency in terms of counselling and prevention of damage linked to wolves and other large carnivores. At the current level of activity, the provision of materials for preventing damage caused by bears and the planning of their use can be managed. In addition, there are sufficient resources to carry out some experimental and training activities, supervision, guidance and information. In future, the prevention of bear damage should be targeted more precisely at potential risk areas, for example by means of risk analyses, which are better enabled by the evolving information systems of wildlife and game administration. More cooperation is needed with parties suffering damage, research institutes and universities in order to develop methods for preventing damage caused by game animals. In addition, more effort should be devoted to training, guidance and information.

During 2022, the Ministry of Agriculture and Forestry will open Riistavahingot.fi, a website where information on damage caused by large carnivores will be available to all. Information on damage caused by large carnivores will be updated on the site and their location can be viewed on a map. The website is part of a project called Riistavahinkokeskus ("Game Damage Centre") included in the Management Plan for the Wolf Population in Finland, which aims to set up an online service to make information

on game animal damage available in a single place. The Riistavahingot.fi website can be developed in the future, for example by collecting information on various methods of preventing damage.

During the preparation of the management plan, it emerged strongly that the criteria for granting damage-based derogations are felt to be unfair. For example, some damage to bees also occurs at apiaries that are adequately protected by electric fences. One of the key points of the consideration prior to granting a damage-based derogation is the search for another satisfactory solution as an alternative to granting a derogation. In general, it can be stated that, in a situation where a bear individual has learned to bypass the means of protection, there is no obstacle to the granting of a damage-based derogation if it is expected that the bear individual will cause particularly significant damage in the future. On the other hand, in a situation where damage occurs at unprotected apiaries, the other satisfactory solution is, as a rule, the protection of the apiaries. However, for each application for a derogation, the Finnish Wildlife Agency carries out a situation-specific assessment, so general guidelines for decision-making cannot be established. Nevertheless, it should be noted that, even if the conditions for the award of a damage-based derogation are met, the owner of the beehives or the livestock farm, as the permit applicant, must also have the right to hunt in the area where the bear is to be killed. However, the hunting rights are often held by persons other than the beekeeper or livestock farmer. The removal of individuals that cause damage may therefore require parties suffering damage to cooperate with a hunting club operating in the area or a person applying for a joint permit on behalf of hunting clubs. The Finnish Wildlife Agency cannot grant hunting rights. For this reason, it is not possible to manage the bear population with individual damage-based permits alone.

Deviating from the year-round protection of the bear must comply with the requirements of the Habitats Directive. In addition, the consideration of derogations is guided by the judgments of the administrative courts. Such decisions on derogations on the basis provided for in Section 41a of the Hunting Act have been made comprehensively. According to Section 90 of the Hunting Act, the recipient of a derogation decision and a registered local or regional entity whose purpose is the protection of nature or the environment have the right of appeal in derogation decisions made on the basis of Section 41 of the Hunting Act. For this reason, a derogation applicant receiving a negative decision may appeal against the decision if, for example, he/she considers that the Finnish Wildlife Agency's derogation consideration has been unlawful. In addition, pursuant to Section 31(1) of the Administrative Procedure Act, the Finnish Wildlife Agency must ensure adequate and appropriate clarification of the matter by obtaining the information and explanations necessary for resolving the matter. It is therefore for the Finnish Wildlife Agency to establish and demonstrate whether the conditions for a derogation are met. The anticipated processing times for permit applications are publicly available

on the Finnish Wildlife Agency's website. The usual processing time for game mammal derogations (damage-based derogations) under the Habitats Directive is one month. The processing times take account of the fact that, in the case of requests for clarification, the applicant and, in the case of requests for an opinion, the person issuing the opinion must be given a reasonable period of time, normally not less than two weeks. If the Finnish Wildlife Agency receives the clarifications and opinions faster than requested, this will also allow for a shorter processing time. At best, applications for derogations based on damage have been processed within 1–3 days.

Damage caused by bears mainly occurs in spring and summer. The game damage register shows that, in quantitative terms, over the past four years 19–40% of the damages to e.g. bees during the whole year have taken place after the start of the hunting season (20 August). In a situation where the damage caused by bears occurs in an area where population management derogations are available, it would be a good idea if the holder of a derogation directed hunting activities at that area. In general, hunting in areas where bears have caused a lot of damage could also reduce their occurrence.

### Damage to bees

There are apiaries in each region of Finland. In Lapland in Northern Finland, Kainuu and Koillismaa, the number of apiaries is lower than in the rest of the country. Apiaries are the most common in the area consisting of Pirkanmaa, Kanta-Häme, Uusimaa, Southwest Finland and Satakunta.

Together with the Finnish Beekeepers' Association, the Finnish Wildlife Agency has developed protection methods for apiaries. The electric fence has been found to be an efficient and cost-effective method, although it involves work and costs for the beekeeper. A bear that receives an electric shock usually respects the electric fence and leaves the beehives alone. (Finnish Wildlife Agency 2022.) With the exception of Northern Finland, there are few areas where the risk of bears causing damage to bees is low. As a result, the protection of apiaries with electric fences should be continued, as it works and is cost-effective. In addition, the construction of fences should in future be channelled through information and guidance to areas which risk analyses identify as having the highest potential for damage. This type of analysis has not been done very much to date.

### Damage to livestock and reindeer

Due to the high cost of installing electric fences for the protection of grazing animals, it is rarely necessary to install such fences solely for the purpose of preventing depredation by bears. Compared with other domestic animals, the depredation by large carnivores on sheep is particularly high. All large carnivores predate sheep. In order to optimise the

targeting of prevention measures in potential risk areas, a risk analysis involving all large carnivores should be carried out in the future. However, among large carnivores, the wolf and the bear cause far more damage to domestic animals than the lynx and the wolverine.

Bear depredation on reindeer particularly targets calves. Efforts have been made to prevent depredation by having reindeer calve in enclosures, which has been used to some extent throughout the reindeer herding area. However, even calving enclosures do not prevent bears from preying on calves, as bears have sometimes preyed on reindeer calves immediately outside the enclosure after the reindeer have been released from the enclosure. There have also been cases where a bear has managed to enter the enclosure and killed both reindeer does preparing to calve and new-born calves.

Very effective means of preventing bear depredation on reindeer have not been found. As such, the main means of reducing bear depredation on reindeer is the regulation of the bear population through hunting and the damage-based hunting of bear individuals that repeatedly cause significant damage. If any effective prevention methods are found, they should be deployed, as bears cause a great deal of damage to reindeer, although the large carnivore that preys on reindeer the most is the wolverine.

During the update of the management plan and in the past, there have been proposals and opinions on allowing bear hunting in spring. However, there is no need for this as bears that have been killed under the autumn quota are well targeted at the areas where the bear damage to reindeer is also located. In addition, bear hunting in the reindeer herding area has already been organised more freely than in the rest of the country.

### Feed bales

Bears tear up the plastic that protects bales and agricultural storage clamps, causing the feed to spoil. Feed bales and storage clamps are very numerous and are broken by many mammals and birds. Protecting them with electrical fencing is not very realistic, as that does not protect against smaller mammals and birds. Bear-induced damage to feed bales can be prevented mainly by storing bales in warehouses, farm centres and on roadsides.

## 2.3.2 Compensation for damage

### ***Measures:***

Personal injury and damage to domestic animals, crops and bees caused by bears will be compensated in full.

The aim is to pay for damage to domestic animals and bees by bears as soon as possible after the submission of applications when the budget permits.

Provisions on damage caused by game animals are laid down in the Game Animal Damages Act. The act lays down the grounds and procedures for granting compensation for the damage caused by game animals and the prevention of such damage from appropriations entered in the State budget. A government decree lays down more detailed provisions on the criteria for the payment of compensation and the procedure to be followed for granting it, as well as on the recovery of compensation paid in error.

Personal injury or damage to crops, animals, moveable property and reindeer can be compensated for as damage caused by bears. In order to seek compensation for damage caused by wolves and other large carnivores, reports of damage to crops, animals and moveable property must be submitted immediately to the local agricultural industry authority, which will check the damage. Under the compensation system, compensation is paid on the basis of fair values and is constantly being updated.

The Game Animal Damages Act was amended in 2019 to state that if compensation has to be cut due to damage to reindeer, the cuts will be targeted at damage to reindeer. From the beginning of 2020, damages to domestic animals caused by large carnivores such as the bear have been paid in full, immediately after the claim has been approved. Damage to crops is compensated in the following spring after the standard harvest prices for the year the damage occurred have been confirmed. Damage to reindeer is compensated within the budget in the year following the year of the damage, due to the computational elements and the fact that the amount of damage to reindeer can vary considerably throughout the year. In connection with the compensation for damage to reindeer, special compensation for loss of calves can be paid to reindeer herding co-operatives on computational grounds according to the Game Animal Damages Act. The purpose of the compensation for loss of calves is to compensate for the loss of calves to carnivores during

summer in a computational manner, without the need to find the calves in the wild. It is almost impossible to find dead calves in summer, as carcasses disappear quickly due to predators, scavengers and decomposers.

The Ministry of Agriculture and Forestry and the Finnish Food Authority have developed an electronic and mobile-based damage reporting system, the Pesä application, through which damage to reindeer can be reported with all the data and coordinates directly to the authority's system via the mobile application. This updates the information on the accumulation of damage and makes it possible to check damage to reindeer in the wild when the exact coordinates for damage site are available and the notification comes quickly through the service. The Reindeer Herders' Association encourages all reindeer herding co-operatives to adopt the Pesä application in reporting damage to reindeer caused by large carnivores, as this speeds up and enhances the transfer of damage data to the authorities.

Compensation of damage caused by game animals from state resources is a multi-faceted issue. According to a citizen survey conducted as part of the management plan update, 5% of the respondents felt that no central government funding should be spent on compensating anyone, in any way, for damage caused by bears. On the one hand, very high levels of compensation could have the effect of reducing motivation for the prevention of bear damage. On the other hand, when the level of compensation for bear damage is very low, people may find it very unfair if bear damage is mainly borne by the party suffering damage. For an individual party, the economic losses caused by a bear can be high. Furthermore, it should be remembered that, ultimately, compensation for damage caused by game animals from state resources is a political decision.

### 2.3.3 Other conflicts related to bears and food bait

#### ***Measures:***

The Finnish Wildlife Agency will advise people on how to prevent bears from visiting yards and avoid encounters with bears.

Research on the regular feeding of large carnivores, such as bears, will be continued and the various effects of feeding will be investigated.



The Ministry of Agriculture and Forestry will launch a broad-based project to investigate the effects of feeding sites for large carnivores, such as bears, both privately and in tourism, and to draw up possible guidelines for their use and establishment. The project will also examine the need to regulate bear photography activities or carrion feeding sites by means of legislation.

### Other conflicts

According to studies, bears in Scandinavia (both Sweden and Finland) mainly avoid people. Situations where bears are aggressive are typically ones where people encounter a mother bear and her cubs or a wounded bear, a bear eating carrion is caught off-guard or hunting dogs are involved. The likelihood of encountering a bear in Scandinavia is low, as bears exist at relatively low densities and their day habitat is usually in densely forested areas, which are not common hiking destinations. (Moen et al. 2012.) The bear has good hearing and sense of smell, so it usually detects people early and leaves before it is noticed (Finnish Wildlife Agency 2015).

Most bear observations are made in spring and early summer, when there is little food available in the wild and bears move even during daylight hours. That is also the bear rutting season, and the bears that come into or close to people's yards are usually either sub-adults or females with young. At other times of the year, the most likely motivation is energy-rich food. (See background document Section 2.6.).

Careful waste management in bear areas, both around summer cottages and other buildings, should be borne in mind, as bears are attracted by tempting smells. The bear is omnivorous and quick to learn, and even small carrion can accustom the bear to human smells, which can lead to undesirable behaviour. Under no circumstances should a bear become accustomed to human smell or be tamed. (Finnish Wildlife Agency 2016. ) A phenomenon familiar in North America, where bears seek food in waste bins, has also been observed in Finland (Finnish Wildlife Agency 2021). The Finnish Wildlife Agency guides and advises, for example, people with summer cottages on how to manage waste and avoid encounters with bears in the woods.

However, it is well known that bears can become accustomed to humans, as is the case in certain areas of North America, where bears have become habituated to hikers and bear-watchers, which has also led to problems. In Yellowstone, for example, bears got used to food of human origin and to people watching bears. (See e.g. Ordiz et al. 2019.)

According to an article examining brown bear attacks on people worldwide published in *Nature* (2019), the number of bear attacks has increased globally in recent decades. This is likely to be explained by a number of factors such as the growth of human and bear populations. In addition, more and more people are taking part in recreational activities in areas that contain bears. Common cases of attack involved encounters with a female bear with young. In Scandinavia, attacks often occur in connection with a hunting event. In Europe, the greatest number of bear attacks on humans occurred in Romania (131 attacks and 11 fatal attacks between 2010 and 2015). According to the statistics in the article, there were 17 attacks in Finland in the same time period. (Bombieri et al. 2019.) More recently, 157 people were injured and 9 died in human/bear encounters in Romania between 2016 and 2019 (Ovidiu 2019). In Sweden, the growth of the bear population has been accompanied by an increase in the number of bear attacks on people. There has been observed reduction in Swedish people's tolerance towards bears. (Moen et al. 2012.) According to the latest research, the fear of large carnivores has increased in Finland (Pellikka et al. 2020).

The LCIE report to the European Commission (2015) describes the problematic behaviour of bears, measures to prevent problems and different types of conflict situations in Europe. According to the report, 'problem bears' are typically ones that have become either habituated to humans and/or conditioned to human food. The timing, availability of natural food, surrounding vegetation and potential hiding places, age, gender and individual reproductive status, availability of food of human origin, measures to protect domestic animals and hunting may also influence the occurrence of potential conflicts. (Majić Skrbinišek and Krofel, 2015).

During the management plan update and its finalisation, a need was seen to continue research related to the feeding of large carnivores, especially bears, and also to examine the issue with a broader line-up.

### **Regulation relating to food bait**

Game management refers to any activity aimed at increasing, maintaining or improving the population of game and the balance between different animal populations by regulating the game animal population, by safeguarding or improving the living conditions of game animals or by any other means. The feeding of game animals as a method of game management, particularly in the context of scarcity of food in nature, such as in winter, can improve the condition of the animals and thus increase their reproductive capacity. Game feeding refers to the provision of either natural or other supplemental food such as hay, cereals, root vegetables or fruits, to animals at a specific location (according to Dunkley & Cattet 2003, Kauhala 2020).

The luring with bait of large carnivores to a specific location has increased in recent years. This is due in particular to the development of trail cameras. In addition to photography locations for tourists, there are also smaller-scale feeding places maintained by private persons to attract large carnivores, for example for trail camera pictures. Food bait is thus set up for the purpose of photographing and viewing bears, both for professional and recreational purposes.

The Standing Committee of the Bern Convention has drawn up a recommendation on the artificial feeding of large carnivores as part of population management, with a particular focus on the brown bear (No. 198 (2018)). The Standing Committee raises concerns, for example, that feeding can have a negative impact on the density, health and behaviour of wildlife and thus have an unintended impact on protected species and ecosystems. The Standing Committee recommends that the parties should:

1. examine where appropriate the impact on ecosystems of artificial feeding of large carnivores aiming to better understand the way in which it may affect other species and the behaviour, numbers and health of the target large carnivores;
2. regulate as appropriate artificial feeding practices aimed at large carnivores, taking into account the position statement of the IUCN's Large Carnivore Initiative for Europe which is available in appendix to the recommendation.

Currently, the feeding of large carnivores is regulated at national level by, for example, the Hunting Act within the limits of its competence (for more details, see Section 2.2.4. Oversight of hunting). Section 33(2)(3) of the Hunting Act provides for a ban on the use of food bait in bear hunting.

The provisions of the Consumer Safety Act (920/2011) apply to bear photography hides, the nature of whose activities has been reported to the Trade Register. Section 34a(4) of the Hunting Act stipulates that the location of the aforementioned business-related food bait must include information on the provider of the food bait, including contact details, and the place where the safety document in accordance with the Consumer Safety Act can be viewed. In addition, the food bait and its location must be reported to the Finnish Wildlife Agency. The Finnish Safety and Chemicals Agency (Tukes) monitors the activities of companies providing wildlife photography services that attract carnivores with bait from the perspective of consumer safety. On the other hand, the powers of Tukes do not cover other dangers arising from food bait, which are related to, for example, changes in animal behaviour.

In addition, the use of a food bait must comply with the provisions of the Act on Animal By-products (517/2015) and the regulations adopted on the basis thereof concerning the use of unprocessed by-products for feeding wild animals and the disposal of waste. The above-mentioned legislation includes concessions for the national implementation of the EU animal by-products regulations concerning the use and disposal of by-products and derived products. The EU Animal by-products Regulation is divided into two separate parts: the actual Animal by-product Regulation (EC) No 1069/2009 and the complementary implementing Regulation (EU) 142/2011. In addition, the Finnish Food Authority has issued guidelines on the use of carrion. According to the EU Animal by-products Regulation, certain Category 2 and 3 animal by-products according to the Animal by-products Regulation may be used for the feeding of wild animals provided that they do not cause any risk to health, environmental spoilage or risk of spreading animal diseases. For the latter reason, for example, food waste must not be used for feeding wild animals. The remains of elk killed in car accidents, slaughter waste from elk hunting, other wild animal carcasses and wild fish are not subject to the Animal by-products Regulation and are allowed to be used as carrion if they are not suspected of being infected with a disease communicable to humans or animals.

The use of Category 2 animal by-products is prohibited in the territory of a municipality when bear hunting is permitted there. Once the bear shooting permits granted for population management purposes in the area have been used up, the use of Category 2 animal by-products is allowed once more. It is the responsibility of the keeper of a carrion feeding site and the regulatory authority to monitor the use of derogations connected to bear hunting in the area. If non-wild animals and their by-products are used as carrion, they must be registered in the carrion location register before the start of the carrion activity. The notification of the commencement or termination of activities or updating of previously reported information can be made through the electronic service application of the keeper, animal keeping location and carrion keeping site register published by the Finnish Food Authority or by submitting a completed registration/change notification form to the municipal veterinarian of the municipality where the carrion feeding site is located. (Finnish Food Authority.) A carrion feeding site must be authorised by the landowner.

Responsibility for the animal by-products that end up used as carrion and their quality lies with the producer and user of the by-product. Ultimately, they are responsible for ensuring that no material that poses a risk to animal or human health is fed to wild animals. It is also the responsibility of the above-mentioned parties to ensure that the carcasses of medicated animals that did not reach the end of the withholding period of the medicinal products before the animals died or were put down are not used as carrion.

The keeping of a carrion feeding site is also regulated by a number of other laws and regulations such as the Waste Act, the Environmental Protection Act and the Land Use and Building Act, knowledge of and compliance with which are prerequisites for activities involving carrion. Information on the use of animal by-products in feeding wild animals (i.e. carrion use) and its restrictions can be found in a compilation on [the Finnish Food Authority website](#).

### Research into the impact of food bait

According to a literature review on the feeding of game animals, which focuses mainly on foreign literature, game feeding has significant impacts at the population and biota level as well as at the level of individual animals. The effects may be beneficial or harmful. Game feeding can also be unintentional, for example in cases where animals other than the ones intended to be fed enter the feeding site, or when the animals feed in fields, gardens or compost heaps. The spread of diseases and parasites is considered to be the most serious disadvantage of game feeding. (Kauhala 2020).

According to Kauhala et al., the ecological effects of feeding have not been studied very much in Finland. However, the Natural Resources Institute Finland has in recent years carried out various studies related to the feeding of game animals, including a research project related to the feeding of ungulates (2020–2021). The Natural Resources Institute Finland also has an ongoing research project, Suurporo, which studies the influence on reindeer husbandry of feeding large carnivores in Koillismaa and Kainuu (Kojola 2021). Studies have also been published on wildlife photography locations that attract bears with bait.

According to the literature review, feeding bears can affect their movements, population density, daily activity and possibly hibernation. The effects of feeding on bear populations have been studied abroad and, for example, the condition of bears fed in Slovenia did not correlate with population density, thus avoiding deterioration of the condition and reproductive efficiency as the population density increased. However, the food provided to bears (e.g. dog food) may be unsuitable, and feeding has also been found to have negative effects on the health of bears. Luring bears with bait can also lead to increased conflicts between humans and bears. According to Kauhala, the behaviour of bears that regularly visit feeding sites should be studied more closely, and there is also a need for a study on the ecological impact of wildlife tourism focused on large carnivores. (Kauhala et al. 2020).

So far, in the light of current knowledge, feeding has not caused conflicts in Finland between humans and bears (Kojola et al. 2012b). Currently, the most commonly used food bait at photography hides in Finland are dry dog food and salmon guts from factories, which are also replenished daily at the feeding site (Penteriani et al. 2021). Carrion is also

used, for example, at trail camera sites maintained by nature enthusiasts (see background document, Section 3.5.). Other large carnivores, such as wolverines and wolves, may also visit bear photography hides.

According to a study published in 2021 on Finnish brown bear feeding sites, the length of time that the bear photography hide has been in use (how long bears have been fed there) has a positive impact on the likelihood of bears visiting the site. The likelihood of a bear visit was also influenced, for example, by the time of the day – visits by bears were more likely at night. According to the study, bears visiting the feeding site mainly moved shorter distances during the day, at a slower speed and had a smaller range. This effect on the movement of bears may also reveal loyalty to places where food bait is present. Feeding bears to attract them to a location can therefore lead to behavioural changes in bears through ‘domestication’. (Penteriani et al. 2021.)

The social impact of carrion feeding has also been investigated, and the study shows that the greatest conflicts arose from bears attracted to a location using carrion. For example, in the reindeer herding area, it was considered problematic that the number of bears was suspected to have increased as a result of carrion use, thus increasing the predation of calves. Residents of the area may have experienced the high concentrations of bears as a security risk. (Pohja-Mykrä et al. 2009.) In addition, feeding carrion to large carnivores has been found to weaken the operating conditions of reindeer husbandry, because the predatory risk leads to loss of pasture areas and increased depredation (Kojola 2021).

### 2.3.4 Executive assistance in large game matters

#### *Measures:*

The Finnish Wildlife Agency, the police and local actors providing executive assistance in large game matters will intervene effectively when bears visit people’s yards. The reasons will be investigated and any carrion will be removed.

The executive assistance in large game matters for bears will be developed in cooperation with the police, the Finnish Wildlife Agency and game management associations.

On the basis of Chapter 2(16) of the Police Act, the police will order bears that lack wariness of humans to be chased away or put down after individual consideration.

The police draws up an information bulletin on chasing away and putting down operations on a case-by-case basis, in accordance with the guidelines of the police communication strategy.

Bears or wolves that come near settlements are usually sub-adults. There is also an increasing number of observations of wolverines in yards as the population spreads southwards. It is always a good idea to inform the large carnivore contact person about any observations in yards. Observations of large carnivores are a matter for the authorities primarily when a large carnivore poses a threat, a danger or a serious danger to human life and health. (Finnish Wildlife Agency 2021.) More detailed information on the various types of large carnivore observations and their reporting, as well as on the encounters with large carnivores and operating models for these, can be found on the websites and materials of the Finnish Wildlife Agency and the police, as well as at [Largecarnivores.fi](http://Largecarnivores.fi).

According to Chapter 2, Section 16 of the Police Act, police officers have the right to capture and, as a last resort, to put down an animal causing danger to human life or health or significant damage to property or posing a serious danger to traffic. A decision by the Parliamentary Ombudsman has noted limitations in the scope of the Police Act. According to the Ombudsman, the scope of the Police Act is mainly limited to responding to rapidly evolving situations posing a threat to human lives or health, or a significant threat to property, where there is no time to determine the conditions of application of the Hunting Act or associated decrees. An animal may also be put down if keeping it alive would clearly be cruel to it.

In 2017, Section 41(2) of the Hunting Act (615/1993) was amended to include interference as a new action allowed under a derogation, thus giving the Finnish Wildlife Agency the option to grant a derogation to chasing away an animal. In practice, decisions to chase away an animal can be made, for example, in sparsely populated areas where the boundary conditions of the Hunting Act can be complied with.

The most common causes of conflict situations and tasks for the police are wolves and bears moving in the immediate vicinity of settlements or otherwise behaving atypically, as well as injured wild boars. In January 2022, the National Police Board approved updated guidelines concerning the powers and actions of police in incidents involving wild boars and large carnivores, including bears. In cooperation with the Finnish Wildlife Agency and executive assistance activities in large game matters, the police have drawn up operating models for situations where large carnivores pose a threat to people.

In situations where the large carnivore that causes a threat or danger to humans is a bear, lynx or wolverine, the procedure is based on the wolf guidelines where applicable (Police procedure for situations involving large carnivores and wild boars). The procedure describes the situations and behaviour of a wolf, from which its lack of wariness of humans can be determined. However, in contrast to this model, measures to chase away bears are taken as soon as a bear is observed in or near an urban area, or visits the yard of an inhabited property in a sparsely populated area. In situations where a bear is being chased away, care should be taken to ensure that the animal can be killed safely if necessary (state of necessity). Such a situation may occur, for example, if the bear charges at the people trying to chase it away or at bystanders.

Executive assistance activities in large game matters are voluntary and based on agreements between the police and game management associations and on the Wildlife and Game Administration Act. The alert system is triggered by a police request for executive assistance. A particular strength in the organisation of executive assistance activities in large game matters is that, throughout Finland, the police have the opportunity to ask for executive assistance from persons trained for the task. Executive assistance missions targeting bears are demanding because they mainly take place during the snow-free season and because injured bears can be dangerous. These missions always require many specialised skills and equipment, as well as dogs particularly well suited to such tasks. The missions may take a long time and require a large number of people. For this reason, the organisation of executive assistance activities in large game matters should be considered, especially in the case of bears, in such a way that the regional specificities are better taken into account.

In the area covered by the Finnish Wildlife Agency of South Savo, problems involving bears are handled by select individuals and dogs operating in an area larger than a single game management association.

The reporting of incidents related to executive assistance in large game matters is done in the Oma riista service, which has improved access to the situation picture of executive assistance activities in large game matters. The reports are also available in the game damage register. As a result, executive assistance activities in large game matters and their organisation can be developed to the greatest possible extent in different areas.



### 2.3.5 Wildlife councils and stakeholder cooperation

#### **Measures:**

After consulting stakeholders, the regional wildlife councils will annually assess the achievement of the objectives and measures of the Management Plan for the Bear Population in their areas and assess the functionality of the bag limit planning system for bears.

The National Wildlife Council will annually assess the achievement of the objectives and measures of the Management Plan for the Bear Population throughout Finland.

The national and regional wildlife councils were evaluated at the request of the Ministry of Agriculture and Forestry in early 2016 (unpublished). One of the key observations on large carnivores was the development of stakeholder activities. As the majority of the councils are made up of hunters, only well-managed stakeholder work would make it possible to bring broad-based views to the attention of decision-makers and officials.

Stakeholder events relevant to large carnivores organised by regional wildlife councils should be developed further. The evaluation concluded that they should be developed towards a more equal culture of dialogue. Broad-based representation of stakeholders can assist in highlighting local and regional points of conflict, especially in matters concerning large carnivores. In the stakeholder survey conducted during the update of this management plan, it was also found that there are large differences in stakeholder work between the different regions.

Having wildlife councils express their opinion on the previous year's activities related to bear population management would be compatible with their strategic role. This opinion could cover all areas of the current system for setting the bag limits for large carnivores, in which case it would cover the Natural Resources Institute Finland, the Ministry of Agriculture and Forestry and the Finnish Wildlife Agency together with its councils and stakeholders. Implementation of the objectives and measures of the large carnivore management plans in the areas should be taken into account in this opinion. The regional wildlife councils' opinions will be submitted to the National Wildlife Council, allowing the national body to prepare its own opinion before the decrees for the following hunting season are drafted. In the case of bears, the opinion should mainly be based on the bigger picture of game management.

The work of the councils is based on wildlife data from the region, such as information about the local bear and ungulate populations. The opinion of the wildlife councils should be based on an overall view of game management, considering the strategic role of the wildlife councils and the independence of public administration in making permit decisions. It is justified to provide the regional wildlife council with an opportunity to present its opinion on the targeting of derogations from the perspective of regional game management. The idea of giving the stakeholders a possibility to issue opinions is supported by both an evaluation of the large carnivore policy and an evaluation of the wildlife councils' work (2016). The regional wildlife council should formulate an opinion on the success of the bear population management and the bag limits by reviewing regional game management as a whole and the impact of the bear on this whole. The overall opinion should be primarily based on the high-quality game data provided by game research.

### 2.3.6 The bear and society

#### ***Measures:***

The Natural Resources Institute Finland will participate in multidisciplinary research projects on topics relating to large carnivores (including the bear) and their social dimension. The Natural Resources Institute Finland will take a multidisciplinary approach to studying the effects of human activities, such as hunting, on the bear and vice versa.

The research results will be actively communicated to the general public.

The bear is the national animal of Finland and is also known by many names or euphemisms. In addition to nomenclature, bears are also prominent in Finnish culture such as art, stories and folklore. Bears, like other large carnivores, also play a significant role in the ecosystem and at its top. Large carnivores affect mammalian populations and also benefit, for example, birds and smaller carnivores that eat carrion. (WWF 2022.) A study was carried out for the Management Plan for the Bear Population (2007) to gather citizens' views. The answers clearly showed that the bear is valued as part of Finnish nature. Respondents also stressed the importance of an efficient damage compensation system, the prevention of damage, and maintaining bears' wariness of humans.

The bear was almost wiped out in Finland at the end of the 19th century. Bounties were also paid for killing bears. Systematic population management has helped to restore the bear population. The re-spreading of the bear throughout the country has also given rise to controversy. The EU's Habitats Directive changed Finland's hunting and nature conservation legislation, making the bear a fully protected game animal.

The bear is also feared. According to a survey carried out by the Natural Resources Institute Finland in 2020, fear of large carnivores has increased over the past five years: 44% of Finns are afraid of the bear, which is higher than the percentage of the people who are afraid of, for example, wolves. In addition to fear, the bear can also cause concern and distress as well as financial losses through the damages to reindeer, bees and domestic animals.

The bear is a highly regarded game animal, a valuable and respected quarry. Bear hunting is challenging and its meat is valuable. Thousands of hunters are involved in bear hunting in Finland during the hunting season. Bear hunts on state lands often include hunting tourists in addition to locals.

Nature tourism is becoming more and more popular and also brings economic opportunities to sparsely-populated areas. In addition, tourism can increase awareness of, for example, nature and large carnivores at local and international levels. (Rigg, 2022.) Apart from domestic hunting tourism, the bear also attracts large carnivore tourism or wildlife tourism, which means observing, tracking or photographing large carnivores in their natural habitat. Nature tourism focused on bears and other large carnivores should be developed in such a way that the activities are both socially and ecologically sustainable (Largecarnivores.fi).

One example of tourism related to bears is photography hides, where people can view carnivores attracted to the location with food in their natural habitat. Bear-watching companies are quite small. (Cf. Rautiainen 2014, Eskelinen 2009.) However, nature tourism plays a significant economic role. The regional economic impact was estimated at approximately EUR 1.5 million and the number of customers was approximately 6,000 per year (Rautiainen 2014). In Finland, large carnivore photography services are provided especially in Eastern and Northern Finland, by approximately 25–30 companies (Tukes 2019). The annual turnover of large carnivore photography and viewing tourism is estimated at approximately EUR 3.2 million, providing 105 person-years of employment (Pohja-Mykrä et al. 2018). The share of foreign customers of all customers has been growing, and their share was 72% according to the latest survey (Pohja-Mykrä et al. 2018).

According to a supervisory review by Tukes in 2019, the risks to customers are low when the company operates with care. The risks associated with wildlife photography services that attract carnivores with bait affect people in the area and their movements in nature if the frequency of carnivores increases and they become accustomed to humans. A guide to good safety practices for large carnivore photography services was published in 2013 (Kajaani University of Applied Sciences).

Pohja-Mykrä and Kurki (2009) investigated the social impact and conflicts of feeding large carnivores carrion, and the study shows that the biggest conflicts arose from bears attracted to a location using carrion, in particular. (See more on this topic in the background document, Section 3.5.).

## 3 Other measures

### 3.1 International cooperation

#### ***Measures:***

In cooperation with research institutes and wildlife and game administration, the Ministry of Agriculture and Forestry will continue to arrange regular meetings with the authorities, population management agencies and research institutes responsible for large carnivores in Norway and Sweden to exchange information and experiences.

In cooperation with the authorities responsible for large carnivores in Norway and Sweden, the Ministry of Agriculture and Forestry will explore the possibility of preparing a framework document on regular cooperation and exchange of information and experiences related to bears between administration and research institutes.

The Ministry of Agriculture and Forestry will explore the possibility of adopting common electronic systems with Sweden and Norway, for example, to collect observations made by citizens.

The Ministry of Agriculture and Forestry will also maintain and establish contacts with other EU countries with a strong bear population.

The management of the Finnish bear population has the greatest connection with the management of the Swedish and Norwegian bear populations, although the gene exchange between the Scandinavian and Finnish-Russian bear populations is modest (see background document, Section 2.8. and Sections 2.11. and 2.12. on international cooperation). The closest genetic connections of the Finnish bear population are with the Russian bear population. In recent years, the focus of cooperation on matters related to the management of the bear population has been especially on cooperation between EU countries.

Together with the Finnish Wildlife Agency and the Natural Resources Institute Finland, the Ministry of Agriculture and Forestry has regularly arranged joint meetings with the authorities and research institutes responsible for large carnivores in Sweden and Norway. The meetings have covered all matters pertaining to large carnivores. The Ministry of Agriculture and Forestry signed a framework document concerning the wolf with the Swedish Environmental Protection Agency and the Norwegian Environment Agency in 2020.

## 3.2 Translocations of bears

### ***Measure:***

No translocations of bears will be carried out in Finland.

There is no need for bears to be translocated, as the bear is currently found all over Finland. In the areas with sparser bear populations, however, the bears are mainly sub-adult males of migratory age. Currently, breeding females also have a large range. This makes it possible for bears to spread naturally and settle in new territories.

## 3.3 Diseases transmitted by bears

### ***Measures:***

Information on the importance of the control of trichinella (*T. spiralis*) in bear meat, even when it is not mandatory, will continue to be distributed regularly.

Information on trichinella and the investigation and prevention of trichinella infection (trichinellosis) will be provided on a regular basis.

Trichinella are nematode parasites, which occur in meat-eating mammals almost everywhere in the world. Humans may become infected after eating undercooked meat or meat products of pigs, bears or other animals containing infectious trichinella larvae. After ingestion, trichinae larvae are released in the intestines and mature into adult worms. The larvae produced by the female worms seek to enter striated muscle, where they encapsulate. The disease caused by trichinella is called trichinellosis or trichinosis. In nature, trichinella spread when meat-eating animals kill each other or eat carrion. Trichinellosis is fairly common in wild carnivorous mammals in Finland. The prevalence of the parasite is high in lynxes, wolves, raccoon dogs and foxes. Nearly half of the lynx population carry trichinella, while in wolves, raccoon dogs and foxes it is found in about one in three. In bears, trichinellosis is not so common: fewer than one bear in ten carries trichinella. Trichinella has not been found in humans in Finland for decades. The last known case of trichinellosis in humans was in the 1970s, which infection was caused by eating bear meat. (Zoonosis Centre 2012.)

The Finnish Food Authority recommends that each hunter commissions a trichinella examination in a laboratory approved by the Finnish Food Authority, even if the meat is for their own use. (Guidance on the sale of bear meat and parts and handling of bear carcasses 2021.) If meat is handed over directly to a private consumer, a trichinella test must be carried out. Trichinella testing must be carried out on bear meat intended for the general public during the inspection of the meat. (Finnish Food Authority.) More information on trichinella testing and meat inspection is available on the website of the Finnish Food Authority.

Trichinella is destroyed by heat. The disease cannot therefore be transmitted by eating properly cooked meat, whether it contains larvae or not. Temperatures of +70°C are sufficient to destroy trichinella larvae. In the past, it was recommended to freeze the meat to destroy the larvae, but Finland is known to have a frost-resistant strain of trichinella at present, so freezing can no longer be recommended as a way to protect against infection. (Finnish Food Authority 2022.)

According to practical observations, the inspection of bear meat for trichinella is generally carried out even when the meat is used in the hunter's own household. Otherwise, the bear meat trichinella inspection activities are regulated and organised in detail.

## 3.4 Communication

### *Measures:*

The accessibility of data on large carnivores produced by different parties active in the Finnish Wildlife Consortium will be improved and it will be ensured that the data is up to date.

The Ministry of Agriculture and Forestry will convene a meeting of those responsible for communication on large carnivores in the Finnish Wildlife Consortium. The communicators will deal with communication related to the wolf and other large carnivores. Communication cooperation with stakeholders will be developed.

Many measures on developing the communication on the bear are set out above. Monitoring of the bear population will be developed, and training and counselling sessions for large carnivore contact persons are an essential part of this activity. In addition, a number of measures have been targeted at hunters, parties suffering damage and other stakeholders in relation to information, guidance and training.

In the background document of the management plan, Section 7.2 describes the most important development measures that have taken place in communication about large carnivores and the main channels of communication about bears. In particular, the aim has been to centralise scattered information on large carnivores for easier access and to publish openly information related to large carnivores, such as background material related to the population assessments of large carnivores. Information on the abundance of the bear population, population management and the use of habitats has been collected at [Luonnonvaratieto.luke.fi](http://Luonnonvaratieto.luke.fi), along with other game species. For example, bear observations and other Tassu observations recorded by large carnivore contact persons can be viewed on a map on the website. General information on the bear is available at [Largecarnivores.fi](http://Largecarnivores.fi), which covers almost all viewpoints related to the bear. [Riistainfo.fi](http://Riistainfo.fi), managed by the Finnish Wildlife Agency, contains information and educational materials on the bear and other large carnivores.

The parties responsible for the communication on the bear are the different bodies within the Finnish Wildlife Consortium: the Ministry of Agriculture and Forestry, the Natural Resources Institute Finland, the Finnish Wildlife Agency, game management associations,



Metsähallitus and the Finnish Food Authority. The police also communicate about bear-related issues as part of their work. The role of stakeholders in communication on the bear is also important.

Coordination and cooperation on communication about the bear, as well as dialogue within the Finnish Wildlife Consortium and with stakeholders can be developed through joint meetings of responsible parties in the Finnish Wildlife Consortium.

## 4 Management plan implementation

### *Measure:*

The implementation of the Management Plan for the Bear Population will be coordinated and monitored by a person appointed at the Finnish Wildlife Agency (person responsible for the management plan).

The key actors in terms of the implementation of the management plan are the Ministry of Agriculture and Forestry, the Finnish Wildlife Agency and the Natural Resources Institute Finland. The Ministry of Agriculture and Forestry influences the objectives of the other Wildlife Consortium stakeholders by setting performance targets for them. Practical coordination and monitoring of the management plan implementation has been assigned to the Finnish Wildlife Agency, while the Natural Resources Institute Finland is responsible for many measures that play a key role for the management plan's impact related to developing the population estimate.

The Management Plan for the Bear Population in Finland contains 56 measures in total. In practice, the implementation of the plan is coordinated by the Finnish Wildlife Agency, which appoints a person to assume responsibility for the Management Plan for the Bear Population. This person's task is to monitor and promote the implementation of the measures. The majority of the measures can be implemented by modifying existing practices.

It should be noted, however, that not all the measures can be promoted by cooperation alone: achieving the objectives of the Management Plan for the Bear Population also requires decisions on resources. The allocation of resources may be based on project-specific performance management or on the possibility of financing projects related to the implementation of the management plan through specific funding, for example.

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