

A mid-term review of the Finnish strategy and action plan for the conservation and sustainable use of biodiversity in 2016



Reports of the Ministry of the Environment 14en/2017

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Timo Tanninen, Ilkka Heikkinen, Marina von Weissenberg (editors)



Ministry of the Environment

ISBN: 978-952-11-4705-0 (pbk.)

978-952-11-4706-7 (PDF)

Photos: Marina von Weissenberg, Golden Eagle (p. 12) Image bank of the Environmental Administration/ Markku Aikioniemi

Layout: Government Administration Department, Publications, Marianne Laune

Helsinki 2017

Description sheet

Published by	Ministry of the Environment	May 2017	
Authors	Timo Tanninen, Ilkka Heikkinen, Marina von Weissenberg (editors)		
Title of publication	A mid-term review of the Finnish strategy and action plan for the conservation and sustainable use of biodiversity in 2016		
Series and publication number	Reports of the Ministry of the Environment 14en/2017		
ISBN (printed)	978-952-11-4705-0	ISSN (printed)	1796-1696
ISBN PDF	978-952-11-4706-7	ISSN (PDF)	1796-170X
Website address (URN)	http://urn.fi/URN:ISBN:978-952-11-4706-7		
Pages	36	Language	English
Keywords	biological diversity, biodiversity, nature, natural resources, genetic resources, sustainable development		
<p>Abstract</p> <p>On 20 December 2012, the Finnish Government approved a resolution on a Strategy for the Conservation and Sustainable Use of Biodiversity in Finland for the years 2012–2020. The Government resolution required monitoring and assessing the implementation of the strategy and action plan and reporting the results to the Government. The Ministerial working group on the bioeconomy and clean solutions dealt with the mid-term review on 8 June 2016.</p> <p>Finland has committed to the main goals of the Convention on Biological Diversity, which are the conservation and sustainable use of biodiversity and fair and equitable sharing of the benefits arising from the utilisation of genetic resources. Finland has also committed to implementing these main goals even more effectively in order to halt the loss of biodiversity by 2020 on a global, regional and national scale.</p> <p>The mid-term review shows that the work to implement the strategy has primarily progressed well in the different administrative branches, the private sector, and the third sector. In the light of the current developments, halting the loss of biodiversity by 2020 does not seem to be possible; rather considerably more effective measures are needed.</p> <p>The information about the status of biodiversity indicates that some of the measures have already had a positive effect, but the negative trends in habitats and species seem to continue in many respects.</p>			
Publisher	Ministry of the Environment		
Printed by (place and time)	Government Administration Unit, 2017		
Publication sales/ Distributed by	Distribution by: julkaisut.valtioneuvosto.fi Publication sales: julkaisutilaukset.valtioneuvosto.fi		

Kuvailulehti

Julkaisija	Ympäristöministeriö	Toukokuu 2017	
Tekijät	Timo Tanninen, Ilkka Heikkinen, Marina von Weissenberg (toimittajat)		
Julkaisun nimi	Väliarvio Suomen luonnon monimuotoisuuden suojelun ja kestävä käytön strategiasta ja toimintaohjelmasta vuonna 2016		
Julkaisusarjan nimi ja numero	Ympäristöministeriön raportteja 14en/2017		
ISBN painettu	978-952-11-4705-0	ISSN painettu	1796-1696
ISBN PDF	978-952-11-4706-7	ISSN PDF	1796-170X
URN-osoite	http://urn.fi/URN:ISBN:978-952-11-4706-7		
Sivumäärä	36	Kieli	englanti
Asiasanat	Luonnon monimuotoisuus, biodiversiteetti, luonto, luonnonvarat, geenivarat, kestävä kehitys		
Tiivistelmä	<p>Valtioneuvosto päätti 20. päivänä joulukuuta 2012 Suomen luonnon monimuotoisuuden suojelun ja kestävä käytön strategiasta vuosiksi 2012–2020 ja edellytti että strategian ja toimintaohjelman toteutumista tulee seurata ja arvioida ja sen tuloksista tulee raportoida valtioneuvostolle. Biotalous ja puhtaiden ratkaisujen ministerityöryhmä käsitteli väliarviointia 8.6.2016.</p> <p>Suomi on sitoutunut Biologista monimuotoisuutta koskevan yleissopimuksen päätavoitteisiin, jotka ovat biologisen monimuotoisuuden suojelu ja kestävä käyttö sekä geenivaroista saatavien hyötyjen tasapuolinen ja oikeudenmukainen jako. Suomi on myös sitoutunut näiden päätavoitteiden entistä tehokkaampaan toimeenpanoon tarkoituksena pysäyttää vuoteen 2020 mennessä biologisen monimuotoisuuden häviäminen maailmanlaajuisesti, alueellisesti ja kansallisesti.</p> <p>Väliarviointi osoittaa, että työ strategian toteuttamiseksi on edennyt pääosin hyvin eri hallinnonaloilla, yksityisellä ja kolmannella sektorilla. Luonnon monimuotoisuuden kadon pysäyttäminen vuoteen 2020 mennessä ei näytä nykyisen kehityksen mukaan olevan saavutettavissa vaan se edellyttää toimien huomattavaa tehostamista.</p> <p>Tiedot luonnon monimuotoisuuden tilasta viittaavat siihen, että osa toimenpiteistä on jo vaikuttanut myönteisesti, mutta monilta osin myös kielteinen kehitys luonnossa näyttää yhä jatkuvan.</p>		
Kustantaja	Ympäristöministeriö		
Painopaikka ja vuosi	Valtioneuvoston hallintoyksikkö, 2017		
Julkaisun myynti/ jakaja	Sähköinen versio: julkaisut.valtioneuvosto.fi Julkaisumyynti: julkaisutilaukset.valtioneuvosto.fi		

Presentationsblad

Utgivare	Miljöministeriet	Maj 2017	
Författare	Timo Tanninen, Ilkka Heikkinen, Marina von Weissenberg (redigerare)		
Publikationens titel	Mellantidsrapport över implementeringen av Finlands strategi för bevarande av hållbart nyttjande av biologisk mångfald år 2016		
Publikationsseriens namn och nummer	Miljöministeriets rapporter 14en/2017		
ISBN tryckt	978-952-11-4705-0	ISSN tryckt	1796-1696
ISBN PDF	978-952-11-4706-7	ISSN PDF	1796-170X
URN-adress	http://urn.fi/URN:ISBN:978-952-11-4706-7		
Sidantal	36	Språk	engelska
Nyckelord	Biologisk mångfald, biodiversitet, natur, naturresurser, genetiska resurser, hållbar utveckling		
Referat	<p>Den 20 december 2012 fattade Finlands regering ett principbeslut om den nationella strategin för bevarande och hållbart nyttjande av biologisk mångfald 2012-2020, och förutsatte att uppföljningen av strategin och handlingsplanen görs och resultaten rapporteras till regeringen. Ministerarbetsgruppen för bioekonomi och rena lösningar behandlade mellantidsrapporten den 8.6.2016.</p> <p>Finland har förbundit sig att arbeta mot målen i konventionen om biologisk mångfald för bevarandet och hållbart nyttjande av biologisk mångfald samt en jämn och rättvis fördelning av nyttan som användningen av genetiska resurser ger. Finland har också förbundit sig att på ett effektivt sätt implementera dessa globala mål för att på ett betydande sätt hejda utarmningen av den biologiska mångfalden fram till 2020 på global, regional och nationell nivå, samt för att främja bevarande och hållbar utveckling av den biologiska mångfalden. Beslutet innefattar mål och ramar för bevarande och ett hållbart nyttjande av den biologiska mångfalden i Finland.</p> <p>Mellantidsrapporten visar att arbetet med att fullfölja strategin i allmänhet har fortskridit väl inom administrationen, privata och tredje sektorn. Att hejda utarmningen av den biologiska mångfalden fram till 2020 verkar inte med nuvarande utveckling och tillgängliga information vara möjlig, utan förutsätter betydande och effektivare åtgärder.</p> <p>Kunskapsbasen över den biologiska mångfalden gör det möjligt att påvisa att en del av åtgärderna redan har inverkat positivt, men samtidigt finns det på olika nivåer en utveckling som påverkar negativt på naturen.</p>		
Förläggare	Miljöministeriet		
Tryckort och år	Statsrådets förvaltningsenhet, 2017		
Beställningar/ distribution	Elektronisk version: julkaisut.valtioneuvosto.fi Beställningar: julkaisutilaukset.valtioneuvosto.fi		

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1 The Finnish strategy and action plan for the conservation and sustainable use of biodiversity, 'Saving Nature for People'

1.1 Strategy

On 20 December 2012, the Finnish Government approved a resolution on a Strategy for the Conservation and Sustainable Use of Biodiversity in Finland for the years 2012–2020. According to the Government Programme of the Prime Minister at the time, Jyrki Katainen, the strategy and action plan for the conservation and sustainable use of biodiversity in Finland was to be updated to correspond to the goals of the Convention on Biological Diversity (CBD; Treaty Series of the Statutes of Finland 78/1994), as well as those agreed upon in the European Union. The ways in which the indigenous Sami People in Finland traditionally utilise nature were to be safeguarded in the implementation of the biodiversity strategy. The Government of former Prime Minister Alexander Stubb and the current Government of Prime Minister Juha Sipilä have continued to implement the strategy and action plan.

Finland has committed to the main goals of the Convention on Biological Diversity (from here on referred to as the CBD or the Convention), which are the conservation and sustainable use of biodiversity, as well as the fair and equitable sharing of the benefits arising from the utilisation of genetic resources. Finland has also committed to implementing these main goals even more effectively in order to halt the loss of biodiversity by 2020 on a global, regional and national scale. The strategic plan approved by the tenth meeting of the Conference of the Parties to the CBD in 2010, the strategy for mobilising resources, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, as well as the thematic work programmes and the decisions on horizontal measures, form an international framework which the parties to the Convention implement flexibly, in accordance with their legislation, goals and conditions.

On 3 May 2011, the European Commission published the communication 'Our life insurance, our natural capital: an EU biodiversity strategy to 2020' (COM (2011) 244 final). The European Council released its conclusions concerning the strategy in June 2011 and December 2011. According to the vision presented in the communication: "By 2050, European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided." The communication sets the following headline target to 2020: "Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss."

The European Commission has drafted the mid-term review of the EU biodiversity strategy to 2020 (COM (2015) 478). The related Council conclusions were approved in December 2015. The core message of the mid-term review was that the primary goal of the strategy has not been achieved: we have not been able to halt biodiversity loss and the degradation of ecosystem services, which has significant adverse effects on the capacity of biodiversity to meet human needs in the future. Achieving the six targets of the strategy by 2020 requires a significant increase in action. The conclusions emphasise assessing the importance of biodiversity and ecosystem services and including them in other policy sectors at the EU and national levels and, in particular, including them in funding criteria and decision-making processes. The conclusions demand mainstreaming and increasing the cooperation between sectors and different actors. The European Union Business and Biodiversity Platform and national platforms are seen as encouraging examples.

With regard to financing the implementation of the strategy, the conclusions state that protecting, managing and restoring biodiversity and ecosystem services must be considered an investment in natural capital, which brings significant added value to society. The conclusions highlight the fact that the Member States have not fully utilised

the financing opportunities offered by the EU Multiannual Financial Framework (MFF) 2014–2020 in implementing the strategy. In accordance with the 7th Environment Action Programme of the European Union, the conclusions require tracing the financing allocated to biodiversity, promoting the accounting of natural capital, and identifying harmful subsidies.

The Strategy for the Conservation and Sustainable Use of Biodiversity in Finland for 2012–2020 is based on the sets of issues in the Convention on Biological Diversity. The strategy aims to promote the ecologically, economically, socially and culturally sustainable utilisation and development of biodiversity and natural resources in Finland, while also safeguarding biodiversity, the vital needs of future generations, and the livelihoods based on natural resources. The Finnish Government has defined the following goals as the starting point for the strategy:

Vision

By 2020, biodiversity loss in Finland will have been halted. The favourable status of biodiversity and ecosystem services will be ensured by 2050. Finland will protect and sustainably utilise biodiversity for its own intrinsic value and as a source of human wellbeing, while taking active responsibility for issues related to biodiversity in international contexts. The Government believes that wide-ranging actions, changes in attitudes and processes, as well as enhanced cooperation, will all be needed to achieve the goals described above. These actions must be based on the following principles:

Mission

Finland will urgently undertake effective actions designed to halt the loss of biodiversity by 2020 and ensure that by 2050 the state of the natural environment in Finland is stable and capable of ensuring people's future wellbeing.

To achieve this:

- Issues and values related to biodiversity must become fundamental elements in decision-making.
- The pressures facing biodiversity must be reduced.
- Collaboration between the authorities, citizens, businesses and stakeholders and related participation procedures must be enhanced. New forms of cooperation designed to prevent and minimise any harmful impacts on biodiversity must be realised at a timely point in the preparation of decisions on projects and plans.
- Degraded ecosystems must be restored cost-effectively, or left to revert to their natural state through natural processes.

- Natural resources must be utilised sustainably. Renewable natural resources must be used in economic activities and to increase wellbeing in ways that ensure that they are not depleted, but are renewed for the benefit of future generations. Non-renewable resources must be used as eco-efficiently as possible. In this way, the present generation will not endanger the prospects of future generations to enjoy a good life in a sustainable society.
- Actions related to the conservation and sustainable use of biodiversity must be realised effectively with due regard to citizens' constitutional property rights and Finland's traditional everyman's right of access to the land, while also ensuring that all citizens meet their responsibility to preserve biodiversity. The indigenous Sami community's traditional knowledge related to biodiversity will be respected.
- Decisions related to biodiversity must be based on the best available scientific information, and also apply the precautionary approach.
- Finland will take responsibility for ensuring access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation.

The Government has approved five strategic goals and 20 more specific targets as guidelines for the conservation and sustainable use of biodiversity in Finland. The strategic goals are:

GOAL 1. Mainstream the conservation and sustainable use of biodiversity across government and society

GOAL 2. Reduce the direct pressures on biodiversity and promote its sustainable use

GOAL 3. Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

GOAL 4. Safeguard the benefits to all from biodiversity and ecosystem services

GOAL 5. Enhance implementation of the conservation and sustainable use of biodiversity through participatory planning, knowledge management and capacity building

The Government has assigned the relevant ministries to implement this strategy by working in cooperation with civil society, commercial interests and other stakeholders to create a cost-effective and purposeful action plan that contains quantitative and qualitative bases for monitoring. The action plan will implement the guidelines defined in the strategy while giving due consideration to national needs and priorities. It will be implemented within the framework of appropriations approved in the decision on government spending limits. Progress on the implementation of the strategy and action plan will be monitored and assessed, with the findings reported to the Government in 2015.

1.2 Action plan and monitoring its implementation

The national action plan, which is based on and which implements the strategy, was completed in 2013. It was prepared by a broad-based *working group promoting the implementation and monitoring of the national strategy and action plan 2006–2016 for the conservation and sustainable use of biodiversity in Finland (from here on ‘the monitoring group’)*. Besides representatives of 10 ministries, the monitoring group includes a wide range of representatives from the public sector, research institutes, industries and businesses, civil society and non-governmental organisations and other stakeholder groups. The monitoring group coordinates the implementation of the programme and the monitoring of the status of biodiversity, assesses changes in the status of biodiversity, develops the interaction needed to implement the action plan, takes care of compiling the summary reports, and draws up proposals for improving and revising the action plan.

In addition to expert reports, feedback from the public through a Webropol survey was used as material in the preparations. Individuals also submitted innovative proposals, which were useful in developing the action plan further. The measures of the action plan were formulated in cooperation between the members of the monitoring group. The measures were divided into groups according to the strategic goals and targets of the strategy for the conservation and sustainable use of biodiversity in Finland. As a part of the action plan, Finland is implementing the goals of the EU biodiversity strategy assigned to the Member States and the related measures supporting the 2020 main goal set by the European Union. The monitoring group approved the action plan on 26 March 2013.

The national action plan includes 105 measures. They are presented along with the ministries responsible for them and their target schedules. The measures are implemented not only by ministries, but also by agencies and bodies within the ministries’ administrative branch (such as sectoral research institutes), stakeholders who contributed to the preparation of the strategy and action plan, as well as non-governmental organisations and stakeholder groups. These all play an essential role in integrating the strategy and action plan into Finnish society, the business sector and people’s everyday lives.



2 Status of biodiversity in Finland and future outlook

2.1 General

During the last five years, no great changes have occurred in the status of biodiversity in Finland. This is largely because most changes in biodiversity generally happen slowly. In addition, there is a delay between environmental changes and the reactions in ecosystems. For this reason, a time span of five years is usually too short to observe changes reliably. However, this does not mean that Finnish nature has remained static for five years. Many of the previous trends have continued as before. It can be estimated that the loss of biodiversity as a whole has continued, even though the speed of loss may have slowed down and positive trends have also occurred in individual species and habitats.

In Finland, the situation is almost the same as in Europe as a whole. According to the mid-term review of the EU Biodiversity Strategy, the loss of biodiversity compared to 2010 continues, even though clear individual steps forward have been taken. According to the review, significant progress towards the main goal of halting the loss of biodiversity by

2020 has still not been made. Instead, there has been progress with regard to certain more specific targets, such as implementing the Birds Directive and the Habitats Directive, as well as preserving and restoring ecosystems, but this has not occurred fast enough. The planned implementation schedule has only been met for the target of combating invasive alien species.

According to the fifth national report submitted by Finland in connection with the Biodiversity Convention in May 2014, the trends in biodiversity in Finland over recent years show both positive and negative aspects; however, the emphasis has been on the latter aspects that have often been ongoing for a long time. The number of threatened species is increasing slowly, while the populations of species that have already declined in natural old-growth forests, in mires in their natural state, or in agricultural habitats have not yet started to increase. For the species populations to start to recover, clear changes are needed to improve the trends in the number and quality of habitats. At the moment, the status of most habitats is relatively stable as concerns biodiversity: the earlier degradation of habitats has been halted, but no clear change needed for the recovery of most species in decline has occurred. However, there are also species with quite specialised habitat requirements, such as the white-backed woodpecker and the Eurasian otter, whose populations are growing.

During the last few decades, positive developments have taken place in forestry that benefit biodiversity, such as leaving retention trees, the more widespread use of lighter soil preparation methods, and the safeguarding of small key habitats. However, the effect of these efforts is diminished by an increase in the harvesting of wood for energy, which reduces the accumulation of decaying wood necessary for several species in commercially managed forests. In addition, the populations of many common forest birds have declined in recent years due to the combined effects of forestry and climate change. In mires, positive changes include putting a stop to first-time ditching of mires and a reduction in ditch cleaning and supplementary ditching, as well as the restoration of mires in protected areas. However, mires are still being converted to fields and peat production areas. No clear change has occurred in restoring mires to a semi-natural state. Many measures have been taken in agriculture to support biodiversity within the framework of the agri-environmental support system.

Climate change is playing an increasingly important role as a source of intensifying pressure. A substantial amount of new research data on the effects of climate change on Finnish nature has been collected over recent years. Several new southern species have arrived in Finland – especially rapidly moving species such as butterflies and birds. In some cases, the spreading of the species has been assisted through human actions. This has been the case for species such as oak and beech: the range of oak has expanded, and it has been observed that planted beeches have reproduced naturally for the first time in Finland.

Even though the spreading of southern species to Finland can enrich the variety of species locally in the conditions of our country, this trend is not desirable on a larger scale. Northern species are encountering increasingly difficult living conditions, and it is not possible for them to move to suitable climate conditions much farther north. In the end, for the majority, movement will be stopped by the Norwegian Sea and the Barents Sea. The results of research on birds show that the populations of northern species have already declined. In addition, the species coming into Finland from the south are usually generalist species with regard to the choice of habitat, and they thrive in the changed conditions. Uniformity of species, which will reduce the diversity of species in the continent as a whole, poses a threat on the European level. Even in Finland, it has been found that butterflies specialised for living in meadow habitats, for example, cannot move north at the same rate as generalist species with less strict ecological requirements. The movement of insect species specialised for living in meadows is often difficult, and there may not be suitable habitats or food plants available for them farther north. In the Baltic Sea, climate change has the greatest effects on species dependent on the ice cover, such as the Baltic ringed seal and the powan, whose future is already threatened in the southern sea areas.

During the past five years, several new results from monitoring and research in Finland shed light on recent trends in biodiversity from several angles. In the following, some of these are discussed in more detail.

2.2 Results of the reporting on the Habitats Directive

In 2013, Finland reported to the European Commission on applying the regulations of the Habitats Directive for the six-year period from 2007 to 2012. In this extensive work by experts, the conservation status of 69 habitat types and 139 species found in Finland was assessed. The assessment was conducted for the second time, and it only concerns a limited number of the species and habitat types occurring in Finland. In the assessment, most of Finland is included in the boreal zone, while upper Lapland is part of the alpine zone. Only 15% of the Natura habitat types in the boreal zone were classified as having a favourable conservation status. The conservation status of most habitats was either inadequate (47%) or bad (37%). In the alpine zone, the situation was much better. There, the conservation status of 88% of the habitat types was assessed as favourable and none were considered bad. Of the habitat types in the Baltic Sea, 80% were assessed as having an inadequate conservation status and 20% as bad. The numbers refer to a percentage of the number of habitat types, not their surface area.

Of the habitat types classified as having bad conservation status, the most typical include meadows and other habitats associated with traditional land-use methods as well as other habitat types threatened by overgrowth. For these, there has been no clear change for the better. However, coastal meadows are an exception: their surface area has been expanded and their structure is expected to improve in the future, if their management continues at least at the current level. The habitat types with inadequate conservation status include most of the habitats with the largest surface area, such as boreal natural forests and aapa mires. The habitats with the most favourable status are fells and rock outcrops.

In the assessment of species, 38% of the species in the boreal region were classified as having a favourable conservation status and 54% as having an unfavourable status. Proportionally, the most number of species with a favourable status can be found among the fish and dragonfly species. The species that most commonly have an unfavourable conservation status are beetles (67%), vascular plants (69%) and mosses (85%). The worst class (unfavourable-bad) includes 13% of the species, or 15 species in total. The largest number of them can be found among vascular plants. In the alpine region, 73% of species were found to have a favourable conservation status and 21% an unfavourable status. The worst class (unfavourable-bad) includes two species, the Arctic fox and the river pearl mussel. Of the two Baltic Sea species assessed, the grey seal was classified as having a favourable status and the Baltic ringed seal as an unfavourable status. Over the assessment period of six years, it was assessed that one genuine positive change and five at least partially genuine negative changes had occurred. The other changes in conservation status were mainly due to an increase in information or changes in the assessment method.

As a whole, Finland still has much to do to achieve the Habitats Directive's goal of favourable conservation status for natural habitat types and species. The necessary change for the better had not taken place between the two assessments (2001–2006 and 2007–2012); instead, the situation was mainly stable. However, examples such as coastal meadows, show that the situation can be improved with the efficient allocation and utilisation of the current methods; in this case, the agri-environment payments.

2.3 Results of the mid-term review of threatened species

In 2015, the trends in the threat level from 2010 to 2015 of the two best known groups of species, birds and mammals, were assessed. The number of threatened bird species increased by 28 compared to the previous assessment. Aquatic and wetland species in particular have become increasingly threatened due to the excessive eutrophication of water bodies and other changes in resting areas located along migratory routes and in wintering areas. Correspondingly, the conservation status of 15 species in total could be lowered.

These include the white-backed woodpecker and the southern dunlin, which have benefited from targeted conservation measures. Of the 245 bird species assessed in 2015, 36% are threatened, 9% are near threatened and 55% are least concern species.

The red list of Finnish mammals in 2015 includes twenty species in total, which is two species less than in 2010. There are seven threatened species, which is four species less than before. The threatened mammals include the critically endangered Arctic fox, the endangered Natterer's bat, the wolf, the wolverine, the Saimaa ringed seal, the vulnerable Nathusius' pipistrelle and the European polecat. The most common causes of mammal species becoming threatened include hunting (both legal and illegal hunting, as well as legal bycatch) and random factors related to small population sizes. Climate change also plays a part in the decline of the Arctic fox, the mountain hare, the Saimaa ringed seal and the Baltic ringed seal.

The species removed from the list of threatened mammals are the Eurasian beaver, the Eurasian lynx, the Siberian flying squirrel and the brown bear, all of which could be reclassified from threatened to near threatened. In the 2010 assessment, the Siberian flying squirrel was classified as threatened, because the species population had declined by more than 30% in ten years, according to the monitoring results. Consistent with new monitoring data, the decline in the population is still steep, but over a review period of ten years, it remains slightly under the limit mentioned above. However, the reclassification should not be interpreted as an improvement in the status of the Siberian flying squirrel.

2.4 Development of the structure of forests

The final results of the 11th National Forest Inventory (NFI11 2009–2013) provide an opportunity to study the changes in the structure of forests. One of the variables important to forest biodiversity is the volume of decaying wood, which was measured for the first time in the 9th National Forest Inventory from 1996 to 2003. The volume of decaying wood has risen by one quarter in the commercially managed heath forests in southern Finland, and in protected areas it has more than doubled. However, the volume of decaying wood in the commercially managed forests of southern Finland remains low, at 3.6 m³/ha. The greater volume of decaying wood in the commercially managed forests of southern Finland can be at least partially explained by the natural disasters that have occurred during the period, especially storms and dry summers.

In the commercially managed heath forests in northern Finland, there was still clearly more decaying wood (9.7 m³/ha) at the turn of the millennium, but the volume of decaying wood has declined drastically there (now it is only 6.3 m³/ha). This reason for this may be that old-growth forests were logged and that forests with large volumes of decaying wood

that were used for forestry were turned into protected areas during the intervening period. The species dependent on decaying wood have the best situation in the protected forests of northern Finland, where there is over 18 m³/ha of decaying wood. There is no clear idea yet of the effect of the reformed guidelines for forest management and practices on trends in the volume of decaying wood in commercially managed forests. According to the quality monitoring of nature management in commercially managed forests, the volume of living retention trees in 2015 was 2.8 m³/ha, when it was as much as a cubic metre more at its highest in the early 2000s. As for dead retention trees, the volume doubled from 1996 to 2007, but it has since dropped back to the level of the late 1990s (in 2015 it was 0.7 m³/ha).

Aspen is a key species for several types of forest. Previously, aspens were cut in forests because they had no commercial value, but under the current forest management instructions it is recommended that they be preserved. As a result, the total volume of aspen in the Finnish forests has tripled from the 1950s to the present day. This trend has also continued in the 2000s.

2.5 Development of aquatic habitats

Nutrient concentrations in the Baltic Sea have only been reduced significantly in the eastern Gulf of Finland, where, in particular, improvements in waste water treatment in St Petersburg and the stopping of the large phosphorus leak from the Fosforit fertilizer plant in Kingisepp near the Estonian border have contributed to a reduction in the load coming from outside. In contrast, the dredging for the Port of Bronka in St Petersburg worsened the water quality in the eastern Gulf of Finland, but the extent of the resulting effects is still being investigated. There have been no positive developments in the western Gulf of Finland. This is due especially to the nutrient-rich water from the deep layers of the Baltic Proper flowing into the Gulf of Finland. No changes can be detected with regard to nitrogen in the load originating in Finland's territory. Additionally, there has been a stoppage, at least momentarily, of the previously decreasing trend in the phosphorus load. One reason for this is the mild, rainy winters that increase the nutrient leaching from land.

According to the results of the assessment of ecological status concerning water resources management, the marine areas have not achieved or even approached the good status set as the goal. All in all, the status of 75% of the total surface area of coastal waters in 2013 was less than good. Of the marine areas, the Bay of Bothnia, which was previously assessed as having good status, failed to reach a good status for the first time. However, the indicators in the Bay of Bothnia, specifically the chlorophyll *a* concentration and the visibility depth, show a great deal of variation between the years, which makes interpretation more difficult. In the light of current information, it can nevertheless be stated that none

of the Finnish marine areas has avoided the harmful changes related to eutrophication. Positive developments have occurred in the ecosystems and the oxygen conditions of the sea floor in the Gulf of Finland. Over the last ten years, the number of anoxic areas in the sea floor has diminished and the vitality of the benthic communities has clearly improved.

Trends in the Finnish marine areas are also affected by the water exchange between the Baltic Sea and the North Sea. The inflow of saline water from the North Sea into the Baltic Sea has diminished, possibly due to climate change, resulting in the food webs becoming less marine-like. Certain thriving invasive alien species have caused the food webs to undergo changes in recent years in unpredictable ways (e.g. the round goby, the Harris mud crab (*Rhithropanopeus harrisi*) and the red-gilled mudworm (*Marenzelleria viridis*).

In 2013, the ecological status of 85% of the surface area of Finnish lakes was classified as excellent or good. There have been no significant changes in water quality or microalgae production indicating the level of eutrophication in these lakes. The status of 13% of the lake area was classified as moderate and 1% as poor or bad. Lakes with moderate or bad status are mainly located in southern and western Finland, which are intensively farmed areas, among other activities. The status of rivers is not as good as lakes. Of the total length of rivers, the ecological status of 64% was classified as excellent or good. The status of 23% of river length was classified as moderate, 9% as poor and 2% as bad. The rivers with a poorer status are mainly located in southern and western Finland, where river water quality is worsened by factors such as eutrophication caused by scattered settlements and agriculture, and the acidity of the soil and the resulting increase in the metal content of water. Compared to the previous assessment in 2008, slightly more positive changes than negative ones were found in rivers, but for lakes, the overall trend was the opposite.

During the last two decades, a new development in Finnish lakes has been observed: the water colour has become browner. The colour change is due to an increase in humus, not eutrophication. Up until the 1990s, the water of large lakes in southern and central Finland, such as Lake Päijänne, became clearer because of improved wastewater treatment, but the visibility depth has diminished again by several metres at its worst. The root causes of the phenomenon are not completely clear. The browner colour has been linked to the draining of peatlands, climate change, and the recovery of lakes from the effects of acidification, which affected water clarity. Most likely, the greater rainfall in winter and the longer periods where the ground remains unfrozen have resulted in an increase in the amount of humus entering the lakes. Similar colour changes have also been observed in the other Nordic countries, as well as in North America.

2.6 Development of agricultural environments

The nutrient balance on cultivated fields has continued to decline in the 2010s. The nutrient balance describes how much of the nitrogen and phosphorus provided for the vegetation is removed from the field with the crop. A downward trend in the nutrient balance reflects a lower risk of nutrient loading, and a decline in the fertility of the field in the long term. The downward trend in nutrient balances in fields also has the potential to increase the diversity of species on arable land, because the diverse meadow vegetation does not thrive in a soil with a too-high nutrient content. With regard to the agri-environmental support, positive developments from recent years include the popular nature management fields that were introduced in 2009 and the support for the management of semi-natural habitats that is developing into a more attractive option. The percentage of organically farmed fields out of the total field area has been steadily increasing for a long time, and it reached 10% in 2015.

The trend has not been as positive for weed abundance in spring cereal fields and the percentage of High Nature Value farmland. The abundance of weeds important to the nutrient chains on agricultural land declined to less than one fourth from the 1960s to 1980s, as the use of plant protection products became more common and agriculture became otherwise more efficient. However, weeds increased again until the end of the 1990s, but the trend has turned downward since. At the same time, the area of High Nature Value farmland, or areas characterised by the large number of domestic animal farms and natural pastures, as well as the finely detailed structure of landscapes, has decreased throughout the monitoring period of 2006–2014. With regard to species, no clear trends could be observed for the butterflies and birds that were monitored the most. The decline in their populations that occurred earlier has not turned around to the desired growth.

The greatest threat to biodiversity lies in the prevailing trend in the structure of landscapes, typified by the reduction in open or semi-open areas that are not a part of actual farming operations. Clearing of small remnant habitats in fields and various kinds of margin areas, drainage measures to increase the cultivated area, and the entire spectrum of measures taken to rationalise field structures, result in a reduction in the very areas that are most crucial to the biodiversity of farmland. However, the results of the follow-up study on specific measures show that locally biodiversity benefits have been achieved in areas where farmers have implemented measures included in agricultural support systems to a sufficient extent (organic farming, semi-natural habitats, wetlands, riparian zones, green fallows, nature management fields of grassland, and biodiversity fields).

2.7 Trends and outlooks

The declining trends in the area and/or quality of most habitats central to biodiversity cannot be halted or turned without strengthening the current measures. Continuing the current trends into the future shows a reduction in the populations of a significant number of species (especially northern ones), and the proportion of threatened species will not be reduced. Positive outlooks can be seen especially when an effort has been made to protect habitats and species. Examples include coastal meadows and one of the icons of Finnish nature conservation, the Saimaa ringed seal. Global warming may also improve the living conditions of threatened species in herb-rich forests, but as a whole, climate change presents more of a threat to Finnish nature than an opportunity.

An improvement in the outlook is also seen because many previous trends with negative effects on biodiversity, such as the reduction of mires in their natural state or the eutrophication of waters, have slowed significantly or have even been stopped. However, the previous negative trends have been so strong in certain respects that the 2020 goal cannot be reached without changing the outlook for habitats in a better direction. It is difficult to make this change by any other means than improving the quality and quantity of a sufficient number of habitats, and by improving their restoration and management. The set of issues and the application of the related principle of no net loss requires research, the defining of concepts and goals in more detail, and extensive national discussion. Monitoring the trends requires improvements in the monitoring and accounting of natural capital.



3 Implementing the strategy and action plan

3.1 General

After the approval of the action plan, the monitoring group has met regularly at more than 20 meetings. The monitoring group has become an established contact point and discussion forum on the conservation and sustainable use of biodiversity for administration, the private sector, and non-governmental organisations. For its part, it fulfils the first goal of the Government's strategy "*Mainstream the conservation and sustainable use of biodiversity across government and society*" in an excellent manner.

During 2015, the monitoring group provided guidance for the mid-term review required by the Government resolution. The Ministry of the Environment has had the main responsibility for the mid-term review, but the relevant ministries have done their part to report on the assessment of the implementation of the measures under their responsibility. In addition, all parties involved in the monitoring group have had the opportunity to present their views on the implementation assessments reported by the ministries.

The 105 measures in the action plan were collected in a table, in which progress was described by measure, and the assessment of the level of achieving the targets was indicated by the same colours as in traffic lights. Green was used to indicate that a measure had been completed, or that a permanent activity fulfilling the set target had been established. Yellow was used to indicate measures that had been started, but that had not been finished yet. Red was used to indicate those measures where implementation had not started yet.

The resources needed to implement the action plan are naturally an interesting part of the mid-term review. In the Conference of the Parties to the CBD, it has also been agreed that the parties must draw up national financing plans or strategies to promote the national strategies. In fact, the network of experts operating under the monitoring group drew up a report on the situation concerning this issue, using the knowledge base and framework drawn up under the Government of former Prime Minister Alexander Stubb. Central ministries and organisations were represented in the network of experts. The report has been updated to correspond to the financial policy in the current Government Programme of Prime Minister Juha Sipilä and the general government fiscal plan issued in the autumn of 2015.

The report by the network of experts presents an estimate on the level of national funding in relation to the goals of the action plan and describes how the resource decisions are implemented in Finland. The network of experts considered the report to be in accordance with the instructions approved under the CBD, and also considered that its content would be interesting on the international level. The core of the report is the estimate on the funding gap concerning the implementation of the action plan. The funding gap was defined as the difference between the appropriations required by the measures of the action plan and the available funding in accordance with the general government fiscal plan 2016–2019.

In the general government fiscal plan 2016–2019, decided in the spring of 2015, a total of EUR 3.5 billion was reserved for the measures presented in the action plan, which is approximately EUR 700 million per year for the target period of 2016–2020. In certain respects, it was not possible to separate the appropriations used for the measures in the action plan from the appropriations reserved for biodiversity, for which reason the estimate mentioned above is an overestimate of the resource allocation for the action plan. On the other hand, the resource allocation reserved for the action plan is only a part of the state contributions to the safeguarding of biodiversity. For this reason, it was not possible to make a direct comparison to the resource allocation for supporting biodiversity in 2011 that was mentioned above.

According to the estimate of the expert network, the implementation of the action plan had a funding gap of EUR 232 million in total for the five-year period of 2016–2020, or approximately EUR 46 million per year. Besides the state sector, the private sector,

organisations, and municipalities also use resources to support biodiversity, but their share of the implementation of the action plan was not studied in this report. The funding gap is significant for measures included in the section of the action plan Conservation of biodiversity. It is estimated that implementing these measures will require approximately EUR 13 million more funding per year than what was allocated to protecting biodiversity in the decision on spending limits. In particular, the appropriations allocated to the acquisitions and compensations related to nature reserves are significantly smaller than required by the national action plan. In addition, this issue also has a funding gap concerning the conservation of species and habitat types.

The funding gap is roughly the same for actions focused on inland waters. The action plan aims at implementing the regional water resources management plans and action plans, as well as the national water resources management programme, for which the funding gap is approximately EUR 9 million per year. With regard to inland waters, after the expert report had been drawn up at the end of 2015, the European Commission made the decision to grant approximately EUR 12 million in funding for the FRESHABIT project concerning the biodiversity of inland waters. The project will be the largest project with LIFE funding that has ever been implemented in Finland in connection with this issue. Focusing it on freshwater habitats in particular was an important strategic choice.

The funding gap was also significant for the section of the action plan on forests, where the annual appropriation is an estimated EUR 10 million euros lower than what the national action plan would require.

The aim has been to estimate the additional resources required by the national action plan as comprehensively and realistically as possible. It has not been possible to estimate the costs of some actions, and therefore no resource gap has been recorded for them in the calculation. Many of the measures are implemented as a part of the official tasks of the administration in accordance with the available resources. In general, it was estimated that approximately 795 person years were spent in the state administration for the work on biodiversity assessment in 2015. Out of these, 30 person years were spent at ministries and approximately 665 person years in the administration under ministries. Only a portion of the work done as part of the official tasks of the administration, involved implementing the action plan. Decisions on human resource allocation, as well as other resource allocation of government authorities, are made in connection with the budget cycle.

In addition to the work done in the course of official tasks, external experts should be assigned to draw up a variety of reports in order to implement several measures. The reports are procured using the research, foresight, assessment and analysis funding of the Prime Minister's Office and the ministries, as well as within the framework of the performance management of research institutes.

3.2 Implemented measures

The following measures of the action plan or their independent parts (21) have been completed, or a permanent activity fulfilling the set targets has been established:

1) Update the communications programme of the *Saving Nature for People* strategy and action plan (2009–2016) to support the policy definitions of the global biodiversity strategy and action plan 2010–2020, revised in Nagoya, Japan (CBD COP-10, 2010). The communications programme will include information on the Nagoya ABS Protocol, access to genetic resources, and the fair and equitable sharing of benefits arising from their utilisation. Ministry of the Environment, Ministry for Foreign Affairs, Ministry of Defence, Ministry of Education and Culture, Ministry of Agriculture and Forestry, Ministry of Transport and Communications, Sami Parliament (2013)

3) The position of environmental education will be strengthened in the imminent overhaul of the national curriculum. In addition, in vocational education, professional skill requirements related to restoring and conserving biodiversity will be strengthened. Ministry of Education and Culture (2013–2015)

4) Cooperation related to multifaceted environmental education on biodiversity will be developed, for instance, between the administration, research institutions, educational institutions, Centres for Economic Development, Transport and the Environment, natural history museums, Metsähallitus Parks & Wildlife Finland Visitor Centres and non-governmental organisations. Additional, practical cooperation projects will be implemented and the results gained from them will be monitored. More effective measures for enhancing awareness of biodiversity in various target groups will be jointly identified.

Ministry of Education and Culture, Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2020)

8) Strive to secure funding opportunities for the conservation of biodiversity in national and EU-level preparations for the European Union's next programming period. Ministry of Agriculture and Forestry, Ministry of Employment and the Economy, Ministry of the Environment (2013–2014)

9) Agri-environmental support will be reformed to promote the conservation of bodies of water and biodiversity more efficiently than at present. Agri-environmental support measures will be focused regionally and on certain farms and parcels, in the areas considered most sensitive in terms of water protection and biodiversity.

Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2015)

11) Legislation on the conservation and sustainable use of biodiversity will be developed to respond to the challenges posed by the loss of biodiversity, and to ensure the full-scale national implementation of EU regulations on nature conservation.

Sub-measure: *Prepare further specifications for nature conservation legislation, to ensure the implementation of EU nature conservation legislation.*

Ministry of the Environment (2013–2020)

12) Examine the possibilities of improving the operational preconditions of the police and prosecutors, with respect to environmental offences.

Ministry of the Interior (2013–2015)

21) Define the international protected area category of current protected areas, in cooperation with the IUCN and other stakeholders. Examine the need for and possibilities of establishing new types of protected areas, and of creating administrative models for them.

Ministry of the Environment, IUCN WCPA Finland (2013–2020)

25) In forest management, take note of threatened species as specified in the operating model *Threatened species in forestry* (Uhanalaiset lajit metsätaloudessa 2011). The Finnish Forest Centre and the Centres for Economic Development, Transport and the Environment will put into operation the practices described in the operating model. The power to decide on operating methods lies with the forest owner.

Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2020)

41) Initiate the research programme, included in the Government Programme (of former Prime Minister Jyrki Katainen), aimed at assessing the financial impact of biodiversity and ecosystem services, as part of the green economy research entity.

Ministry of the Environment, Ministry of Agriculture and Forestry, Ministry of Employment and the Economy, Ministry of Education and Culture (2013–2015)

46) Implement measures included in the National Forest Programme (NFP), and evaluate and revise the programme insofar as necessary.

- Diversify forest management methods to support the increasingly varied uses of forests by revising statutes, forest management recommendations, forest management planning, and associated advisory services and training.
- Improve habitat management in commercially managed forests by revising the associated financing systems, forest management recommendations, and guidelines, and by providing training to forest owners and actors.

Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2020)

47) Develop and test regional cooperation models suitable for privately owned forests, for instance, through METSO cooperation network projects. Take the special characteristics of private forests into account in planning.

Ministry of Agriculture and Forestry (2015–2020)

48) Safeguard and take biodiversity and ecosystem services into account in state-owned, commercially managed forests, in accordance with the environmental guide of Metsähallitus. Ministry of Agriculture and Forestry (2013–2020)

49) Pay attention to biodiversity values and the ecosystem services of state-owned recreational areas and research forests, for instance, in connection with the METSO programme. Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2015)

64) The starting point for reforming the agri-environmental scheme will be the national and EU-level objectives for the conservation of aquatic environments and other biodiversity. Subsidies will be allocated to the most efficient measures and to the areas with the highest loads.

Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2014)

81) Complete the network of national urban parks in Finland.

Ministry of the Environment (2013–2020)

82) Restore degraded ecosystems and maintain and improve the production of ecosystem services.

Sub-measure: An expert working group will consider the interpretations, needs and methods for restoring ecosystems and the targeting of restoration, and the time span required for restoring degraded ecosystems.

Ministry of the Environment, Ministry of Agriculture and Forestry (2013–2020)

87) An *in situ* conservation programme for naturally occurring relatives of crops will be launched.

Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2014)

94) Finland will continue to pursue the right of EU Member States to ban or restrict, for justified reasons, the cultivation in their territory of GMO plants approved for cultivation in the European Union.

Ministry of Social Affairs and Health, Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2020)

95) Finland will see to it that the provisions of the Nagoya–Kuala Lumpur Supplementary Protocol on biosafety, subordinate to the CBD, enter into force nationally in 2013. (The Supplementary Protocol was ratified in 2014.)

Ministry of Social Affairs and Health, Ministry of Agriculture and Forestry, Ministry of the Environment (2013)

102) In cooperation with Russia and Norway, Finland will promote the formation of the cross-border Fennoscandian Green Belt.

- Initiate conservation biology research and development projects related to the formation of the Fennoscandian Green Belt, including climate change and the related changes in habitats and species, and the spread of invasive alien species. Continue active international cooperation in research and between experts in preparing adaptation strategies for the northern boreal coniferous forest belt and possible regional strategies for the Baltic Sea area.
- Establish the Kalevala park on the Finnish side and prepare a plan for the protected areas of the Fennoscandian Green Belt in Finland, as part of legislative drafting. Continue and strengthen park twinning cooperation and apply for funding, for example, from the European Union, for implementing these projects.
- Establish a national working group to promote the Fennoscandian Green Belt and its activities. Initiate a joint expert cooperation working group and network for Finland, Norway and Russia to coordinate initiatives and cooperation related to the Fennoscandian Green Belt, and to maintain contacts with the European Green Belt.
- Encourage regional councils and local actors to participate in the enhancement of cooperation related to the Fennoscandian Green Belt. Encourage local actors to initiate regional development and nature tourism projects related to the Green Belt. Ministry of the Environment, Ministry of Agriculture and Forestry (2013–2020)

3.3 Incomplete measures

Most of the measures of the action plan have been started, but they are not finished yet (83). For some key measures, the decrease in state appropriations is delaying the targets.

In the reports by ministries, the insufficient funds are estimated to have negative or limiting effects on the following measures or their sub-measures:

6) Continue to develop a monitoring system for the state of and trends in biodiversity in Finland through a network of experts. Monitoring results will be published on the Biodiversity.fi website in particular; this will be maintained as a national system for communications and reporting on the general monitoring of biodiversity. Monitoring will be expanded through indicators describing the status of and trends in ecosystem services; the indicators will be developed in cooperation with researchers and users of information. These

indicators will be added to the Biodiversity.fi website. More efficient use will be made of indicators for biodiversity and ecosystem services, in decision-making and the evaluation of the implementation of the action plan. The role of such indicators will be strengthened in the measurement of sustainable development and wellbeing in Finland.

Ministry of the Environment, Prime Minister's Office, Ministry of Finance, Ministry of Education and Culture, Ministry of Agriculture and Forestry, Ministry of Employment and the Economy; development of indicators for the fifth national report on the CBD Convention by the end of 2014 (2013–2015)

45) Implement the measures included in the Forest Biodiversity Programme for Southern Finland (METSO) and secure funding for the METSO programme, in accordance with the Government Programme. Finalise the mid-term review of METSO and revise the METSO programme insofar as necessary.

Ministry of the Environment, Ministry of Agriculture and Forestry (2013–2020). The appropriations in accordance with the current spending limits will result in remaining 11,000 ha (11.5% of the overall goal) behind the target of nature reserves set for METSO by 2025.

50) Implement the Government resolution on the sustainable and responsible use and conservation of mires and peatlands. By the end of 2014, assess the impacts of the resolution and any further measures required.

Ministry of Agriculture and Forestry, Ministry of the Environment, Ministry of Employment and the Economy (2013–2020)

51) In order to sustain the natural water balance that maintains mire ecosystems which are already protected, revise the ecological definitions of such ecosystems, for instance, by applying voluntary conservation methods such as the METSO programme.

Ministry of the Environment, Ministry of Agriculture and Forestry (2013–2020)

52) Direct new land use, which would cause considerable changes to mires, to mires and peatlands that have already been drained or whose natural state has otherwise been significantly changed.

Ministry of the Environment, Ministry of Agriculture and Forestry, Ministry of Employment and the Economy (2013–2020)

57) Promote the management of landscape and biodiversity in connection with agriculture, by enhancing information, education, research and cooperation between various actors. Support the preparation of general plans for wetlands, buffer zones and biodiversity.

Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2020)

58) Safeguard species dependent on habitats associated with agriculture and protect and maintain their species routes through agri-environmental measures .
Ministry of Agriculture and Forestry, Ministry of the Environment (2013–2020)

77) Apply efficient measures in order to prevent poaching. Strengthen wildlife surveillance by Metsähallitus, enhance advisory services of the Finnish Wildlife Agency and improve the ability of the police to intervene in hunting offences.
Ministry of Agriculture and Forestry, Ministry of the Interior (2013–2014)

88) Ensure the conservation of genetic diversity in forest trees in line with the national programme on plant genetic resources, taking into account the obligations listed in the international EUFORGEN programme and guidance from the National Advisory Body for Genetic Resources.
Ministry of Agriculture and Forestry (2013–2020).

98) Through the United Nations Environment Programme (UNEP) and the Global Environment Facility (GEF) Finland will actively support measures that promote the conservation and sustainable use of biodiversity.
Ministry for Foreign Affairs, Ministry of the Environment (2013–2020).

3.4 Measures that have not been started yet

Eight measures in the action plan have either not been started at all or one of their key parts has not been started yet.

Of these measures or parts of them, three (18, 30 and 38) are closely linked. Implementing them is necessary for Targets 10, 11, 14 and 15 of the strategy approved by the Government. However, their implementation requires a clear increase in the use of resources and projects have to be drawn up to fulfill the measures.

Starting and implementing four measures (20, 33, 37 and 60) is possible and partly even scheduled, and there is no insurmountable lack of resources related to them. However, they do require an effort of several years, which is why they should be started without delay to follow the target schedule of the action plan.

One of the measures involves the investigation and organisation of the administration's internal authority relationships, and there is no insurmountable lack of resources related to its implementation.

In the following, the measures that have not yet been started are discussed in more detail:

18) Implement measures in accordance with Decision X/31 on protected areas of the Convention, such as gap analyses and the additional measures required by them.

It has not yet been possible to start two parts of the measure, both of which concern preparations for adapting to the climate change. The sub-measures are:

- *Draw up a national development plan on protected areas, through cooperation between administrative sectors and by taking climate change into account. This plan should include an assessment of the connectivity of the network of protected areas, its ecological representativeness and geographical coverage by classification of habitat type, as well as proposals for measures required for the long-term development of the network of protected areas. The Government will decide separately on any measures necessary for covering gaps in the network and developing it.*
- *The efficiency and impacts of managing and maintaining the protected area network will be assessed and improved in order to enhance the level of conservation of species and habitat types, and their adaptability to climate change.*

The ministry with the main responsibility for these sub-measures is the Ministry of the Environment, in cooperation with the Ministry of Agriculture and Forestry and the Ministry of Employment and the Economy. The sub-measures were scheduled to start in 2013 and end by 2020.

Together with the Finnish Environment Institute, the Ministry of the Environment has estimated the resources needed and a possible implementation schedule. The first sub-measure could be implemented as a multi-year project. Besides the best national expertise, it requires international cooperation. The second sub-measure is dependent on the results of the first one to a certain degree, but it would be appropriate to combine both sub-measures into one project, in which Metsähallitus is an important actor for the network of protected areas.

The costs of the project as a whole would be in the range of 2–5 million euros, with an implementation period of approximately four years. At the moment, there is no funding in sight for such a large project; therefore, progress in the matter requires both reallocating research, foresight, assessment and analysis funding, as well as funding from outside the State Budget. The possibilities of using, for example, the EU's funding instruments must also be investigated.

It is necessary to get started on the sub-measures for adaptation to climate change. By 2020, an overall picture sufficient as a basis for long-term (approximately 10 years) development work could be constructed. It should be emphasised that this involves

an extremely significant change in the point of view in the traditional approach to the ecology of nature conservation from theory to practice. It has been estimated that the progression of climate change will be relatively rapid in northern areas in particular, and its effects can already be detected in the changes in the distribution of species. The first signs of changes in habitat types can be detected in areas such as *palsa mires*. To make it possible to have a wider influence on adaptation when the changes begin, an extremely challenging knowledge gap must be filled.

The Ministry of the Environment is prepared to draw up a preliminary study in preparation of the project as a whole during 2016.

20) Assess the need for the implementation of protected areas that have been designated in regional land use plans and municipalities' master plans, but that have not been included in the conservation programmes under the Natura 2000 network, but that have been reserved for implementation by the state (SL, SU1). Additionally, assess the order of priority and need for land use and management planning of these areas. Implement the required protection measures.

The ministry with the main responsibility for the measure is the Ministry of the Environment, and the implementation period decided for it was 2013–2020. An important tool for the cost-effective preparation of the measure is the protected area information system, whose development was delayed. The system has become operative for the most part during 2015, which means that the prospects of implementing the project have now improved substantially. In connection with the decision on the financial plan for the current Government term, the procurement and compensation appropriations for nature conservation were reduced considerably. This increases the need to review in land use plans areas reserved for protection. The Ministry of the Environment will implement the measure in 2016–2017.

30) Basic data on the sensitivity of species and habitat types to the impacts of climate change will be gathered in support of decision-making on protected areas, their management and monitoring. Assess the functionality of the network of protected areas and the need for management of them, as regards adaptation to climate change.

The ministry with the main responsibility for the measure is the Ministry of the Environment, in cooperation with the Ministry of Agriculture and Forestry and the Ministry of Education and Culture. The measure was scheduled to start in 2013 and end by 2015.

In practice, the measure overlaps with measure 18 described above. Sensitivity assessments of species and habitat types provide the information necessary for its implementation. Related research data have been collected since the action plan has been in force.

Important sources of information in the future include the assessment of threatened species in Finland, which will be completed by 2019, and the assessment of threatened habitat types in Finland, which will be completed by 2018. Both assessments use the criteria of the International Union for Conservation of Nature (IUCN). In any case, resources should also be directed to the sensitivity analyses of species and habitat types in the future. The Finnish Museum of Natural History (LUOMUS) is a key expert institution in this issue; it also does important work in raising the public's awareness of species.

36) Update the Off-Road Traffic Act and enhance its enforcement to prevent detrimental impacts on biodiversity.

The ministry with the main responsibility for the measure is the Ministry of the Environment, in cooperation with the Ministry of Transport and Communications. The measure was scheduled to start in 2013 and end by 2015.

The Ministry of the Environment had prepared a proposal for revising the Off-Road Traffic Act, but the matter did not progress during the previous Government term and the reform is not included in the current Government Programme. However, this does not prevent starting work on preparing statutes concerning the Off-Road Traffic Act and enacting them during the next term of Government at the latest. As such, the effects of off-road traffic on biodiversity are mainly local. The attention is focused more on the relationships between off-road traffic, landowners, and other uses and users of nature.

37) Enhance land use planning around tourist resorts that is sustainable with regard to biodiversity, for instance, by centralising tourism services with a view to safeguarding biodiversity.

The ministry with the main responsibility for the measure is the Ministry of the Environment, in cooperation with the Ministry of Employment and the Economy, the Ministry of Agriculture and Forestry, and the Sami Parliament. The measure was scheduled to start in 2013 and end by 2020.

The measure has not progressed as a separate project. To get started on this measure, support can be provided under measure 1 "Increase recreation and nature tourism" of the key project "Bioeconomy and clean solutions" of the Government of Prime Minister Juha Sipilä.

42) Clarify cooperation and the division of duties between the Finnish Museum of Natural History and the Finnish Environment Institute in basic taxonomic research, the production and storage of sample material and the monitoring of biodiversity, taking account of the development of state sectoral research institutions and of tasks performed under the regulations governing organisations.

The ministry with the main responsibility for the measure is the Ministry of Education and Culture, in cooperation with the Ministry of the Environment. The measure was scheduled to start in 2013 and end by 2020.

The measures used in the process of deepening the cooperation between higher education institutions and research institutes over several years (KOTUMO roadmap, Publications of the Ministry of Education and Culture, Finland 2015:16) improve the conditions overall for cooperation between higher education institutions and research institutes. According to the roadmap, cooperation is increased in: 1) guidance and communications, 2) collaboration in education and research between higher education institutions and research institutes, 3) joint field stations and campuses, 4) common infrastructures in education and research and 5) more open and shared data repositories and research results. With the providing of guidance and deregulation, higher education institutions and research institutes are encouraged to forge closer collaboration. The division of duties between the Finnish Museum of Natural History and the Finnish Environment Institute in “the production and storage of sample material and the monitoring of biodiversity” is also partly related to the developments reported under measure 43. No separate process has been started due to issues concerning competence. As part of a key project of the current Government Programme on strengthening the cooperation between higher education institutions and business life under the strategic priority of knowledge and education, the ministries have requested presentations on cooperation between higher education institutions and research institutes from the institutions and institutes within their administrative branch by 19 February 2016. Depending on the content of the proposals by the Finnish Environment Institute and the University of Helsinki, implementing measure 42 may be included in the implementation of the Government Programme’s key project.

60) Identify the existing substitute habitats considered valuable in terms of biodiversity (e.g. road verges, railway lines and sidings, open areas around power lines and waste land), and determine the number of substitute habitats that are becoming more common (e.g. green roofs) and their significance to biodiversity. Investigate the possibilities of managing and funding such habitats at regional and local levels.

The ministry with the main responsibility for the measure is the Ministry of Transport and Communications, in cooperation with the Ministry of Employment and the Economy, the Ministry of Agriculture and Forestry, and the Ministry of the Environment. The measure was scheduled to start in 2013 and end by 2020.

A report on road verges and railway lines and sidings that is included in the environmental programme of the Finnish Transport Agency has been scheduled for the years 2016–2017.

82) Restore degraded ecosystems and maintain and improve the production of ecosystem services.

Of the six sub-measures, two have not yet been started:

“Link restoration methods so as to better promote the improvement of conservation levels of threatened species and habitat types, and to enhance the ecological quality of the network of protected areas, and its functionality and connectivity, so as to provide buffering as regards climate change. The ecosystem approach should be applied in the planning of restoration measures.”

“Identify possible legislative obstacles to the restoration of habitats.”

The ministry with the main responsibility for the sub-measures is the Ministry of the Environment, in cooperation with the Ministry of Agriculture and Forestry. The sub-measures were scheduled to start in 2013 and end by 2020.

Regarding *promoting the improvement of conservation levels of threatened species and habitat types, and enhancing the ecological quality of the network of protected areas and its functionality considerations* will be taken into account in the ongoing work on the restoration measures and in the planning of these. Improvements in the knowledge base for enhancing the functionality of the network of protected areas, so as to provide buffering as regards climate change, is needed. The initiation of measure 18 discussed above is also important in this respect.

Identifying possible legislative obstacles to the restoration of habitats has not become topical, because restoration measures have mainly been carried out on a relatively small scale and in nature reserves, where no significant legislative obstacles have occurred. When restoration is expanded in the future, possible legislative obstacles must be investigated. This can be done as a part of the official tasks of the administration.

APPENDIX: POLICY LINES

MINISTRY OF THE ENVIRONMENT

8 June 2016
PROPOSAL FOR A DECISION

Ministerial working group on the bioeconomy and clean solutions: A mid-term review of the Finnish strategy and action plan for the conservation and sustainable use of biodiversity in 2016

On 30 December 2015, the Finnish Government decided, as a part of a larger review of how up-to-date the Government resolutions and strategies are, that it would continue to implement the Finnish strategy for the conservation and sustainable use of biodiversity *Saving Nature for People 2012–2020*. The Government resolution of 2012 concerning the strategy required monitoring and assessing the implementation of the strategy and action plan and reporting the results to the Government in 2015.

The mid-term review shows that the work to implement the strategy has primarily progressed well in the different administrative branches, the private sector, and the third sector. In the light of the current developments, halting the loss of biodiversity by 2020 does not seem to be possible; rather considerably more effective measures are needed.

The information about the status of biodiversity indicates that some of the measures have already had a positive effect, but the negative trends in habitats and species seem to continue in many respects. The positive results of the mid-term review show that many of the Government-level decisions made, such as those concerning the Government's key projects on threatened migratory fish and the establishment of a new national park, along with Government resolutions and the reformed legislation, all promote and support the implementation of the measures of the strategy.

The ministerial working group on the bioeconomy and clean solutions:

- Encourages the ministries in question to continue the good cooperation with all active parties and sectors and emphasises the importance of mainstreaming as a requirement of achieving the strategic goals.
- Requires the ministries in question to continue the implementation of unfinished measures in a more efficient manner and to start implementing the measures that have not yet been initiated within the framework of the decision on central government spending limits, the appropriations in accordance with State Budgets, and the number of person years, by reallocating funds and by expanding the funding base through cooperation projects with the private sector, if necessary, and to acquire EU funding for the measures more effectively. The opportunities to gain additional financing for the METSO programme during the electoral term, which is essential with regard to the strategic goals, are to be investigated.

- Requires that the ministries in question maintain the operational capabilities of the METSO programme adjusted to a lower financing framework, so that it would be possible to maintain the prerequisites for the additional protection of forests and to start projects efficiently as the financial situation of the State improves.
- Considers that the additional resources needed for the action plan for the conservation and sustainable use of biodiversity and the existing funding gap for implementing the action plan require a more intensive cooperation between the public and private sectors.
- Pays particular attention to the key challenges of the loss of biodiversity; the degradation and fragmentation of natural environments, species falling into the category of threatened, the spread of invasive alien species, the negative impacts of climate change on habitats and species, the eutrophication of water bodies and the deterioration in their state, and to the possibilities for reducing the pressures on habitats and species; the mainstreaming of conservation of biodiversity and the voluntary participation of businesses in the Business and Biodiversity Platform, the restoration of degraded ecosystems, habitats and species taken into account in planning, and nature-based solutions.
- Requires strengthening the monitoring of the status of and trends in biodiversity and ecosystem services with indicators and utilising systematically collected data in planning and decision-making.
- Requires continuing the development of national ecosystem accounting based on the existing reports and projects, so that the accounting allows for more versatile review of the amount, status and sufficiency of natural resources, for example in view of the bioeconomy.
- Requires developing the synergy between international biodiversity conventions further and making an effort to reduce the overlapping reporting related to the implementation of conventions.
- Requires that the ministries in question report on the implementation of the action plan in January 2020 at the latest.

Finland is committed to promote the conservation and sustainable use of biological diversity, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources in activities in all sectors of society. The objectives are to promote the ecologically, economically and socially sustainable development of biodiversity and natural resources in Finland, while also protecting biodiversity, the vital needs of future generations, and the livelihoods based on natural resources. The national action plan includes 105 measures. They are presented along with the ministries responsible for them and their target schedules.



Ympäristöministeriö
Miljöministeriet
Ministry of the Environment



ISBN 978-952-11-4705-0 (pbk.)
ISBN 978-952-11-4706-7 (PDF)
ISSN 1796-1696 (print)
ISSN 1796-170X (online)