

Nordic Biodiversity Framework

Laying the foundation for Nordic synergy
regarding the Global Biodiversity Framework

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Summary

Rapid biodiversity loss is one of the most pressing issues of our time. In response, 196 countries, including the Nordic countries, signed the Kunming-Montreal Global Biodiversity Framework (GBF) in 2022. Now the task is to move from agreement to implementation and policy. This challenge requires careful science-based policy grounded in knowledge of local and regional ecosystems and biodiversity challenges, as well as transnational and transdisciplinary collaboration. The Nordic Biodiversity Framework (NBF), a collaborative project between Iceland, Finland, and Denmark, was developed in 2024 to support such synergy.

The cultural, political, and historical similarities between the Nordic countries provide good grounds for Nordic cooperation on the protection of nature and biodiversity. However, there are lessons to be learned through comparison. Iceland, Finland, and Denmark have relevant differences in climate, nature, political culture, and infrastructures for biodiversity protection. Both the similarities and differences provide the diversity to create synergy that enables us to learn from each other and identify important issues and leading practices. The NBF aimed to lay the groundwork for this by compiling existing knowledge about biodiversity issues and examining the status of GBF implementation of Targets 1–8 in each of the member countries (Iceland, Finland, and Denmark). To accomplish this, three workshops were conducted in 2024, one in each member country, as well as several supportive side activities.

Some of the main differences between NBF member countries are political, primarily in terms of EU membership, which affects policy making, implementation, and governance of biodiversity actions. The threats to biodiversity differ greatly between the three countries but a common thread is competition between biodiversity and business (or defence) interests. Other common themes and messages emerged, such as the need for a better understanding and larger role of the Ecosystem Approach, conflicting interpretations or misunderstandings of key concepts (e.g., biodiversity, protected areas), a lack of effective or relevant policies for biodiversity conservation, and a lack of support and resources. There are different obstacles to implementing the national targets (NBSAPs): Finland's

NBSAP has not been approved by the government, Denmark's NBSAP was criticized by the Danish Biodiversity Council and Iceland failed to submit an updated NBSAP to the Convention of Biological Diversity Secretariat for COP16 in 2024. Regardless of these barriers, there are various efforts ongoing to implement the GBF's goals and targets in these countries, and there is clearly a general increase of awareness of biodiversity within both the public and political spheres.



Glossary

BIODIVERSITY: [CBD defines biodiversity](#) as “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”

CONVENTION ON BIOLOGICAL DIVERSITY (CBD): In order to promote sustainable development, the convention was signed by government leaders in 1992. It has three main aims: the conservation of biological diversity, the sustainable use of the components of biological diversity, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

ECOSYSTEM: [CBD defines an ecosystem](#) as “a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.”

ECOSYSTEM APPROACH: The ecosystem approach is one of the [guiding principles of the CBD](#). It is a strategy that promotes conservation and sustainable management of natural resources that considers ecosystems as whole systems. The application of the ecosystem approach supports all three main objectives of the member states of the CBD Convention: conservation of biological diversity, sustainable use, equity, and equality in the use of genetic resources. More details on: biodice.is/the-ecosystem-approach

EU BIODIVERSITY STRATEGY FOR 2030: The EU's biodiversity strategy for 2030 is a comprehensive, ambitious, and long-term plan to protect nature and reverse the degradation of ecosystems. The strategy aims to put Europe's biodiversity on a path to recovery by 2030 and contains specific actions and commitments (European Commission 2020).

INTERNATIONAL SCIENCE-POLICY PLATFORM FOR BIODIVERSITY AND ECOSYSTEM SERVICES (IPBES): An independent organization that provides policymakers with scientific assessments on the state of biodiversity and ecosystems. It aims to improve the understanding of biodiversity loss and

ecosystem degradation and offers solutions to help protect and sustainably manage the natural world. IPBES bridges the gap between science and policy, promoting informed decision-making for environmental conservation.

INVASIVE ALIEN SPECIES (IAS): Animals, plants, pathogens, and other organisms that are non-native to an ecosystem, spread to new areas with human intervention, which may cause environmental harm or negatively affect human health. IAS impact native biodiversity via the decline or elimination of native species through predation, competition, or the transmission of pathogens, or harming the ecosystem or ecosystem functions. Invasive alien species are one of the direct drivers of biodiversity loss (IPBES 2019).

KUNMING-MONTREAL GLOBAL BIODIVERSITY FRAMEWORK 2022 (GBF): The agreement was adopted at the 15th Conference of Parties to the UN Convention on Biological Diversity (CBD) and signed by 196 countries. This framework contains visionary global targets to be achieved by 2030 and 2050 to safeguard biodiversity. The GBF replaces the CBD's Strategic Plan for Biodiversity 2011–2020 and its Aichi targets (CBD Strategic Plan for Biodiversity 2011–2022) which nations largely failed to meet.

MONITORING FRAMEWORK FOR THE GBF: Designed to track global progress on biodiversity conservation by establishing a comprehensive set of indicators and targets, ensuring that countries can effectively measure and report on their efforts to halt biodiversity loss and promote sustainable ecosystems.

NATIONAL BIODIVERSITY STRATEGIES AND ACTION PLANS (NBSAPS): The National Action Plan details how the country intends to fulfil the CBD objectives within the specific national context while integrating conservation and sustainable use of biodiversity into all relevant sectors.

NORDIC BIODIVERSITY FRAMEWORK: The Nordic Biodiversity Framework (NBF) is a collaborative environmental policy project involving Iceland, Denmark, and Finland. It was established in 2024 and aims to enhance synergy in achieving the GBF targets across Nordic countries.



Introduction

Rapid biodiversity loss is one of the most pressing issues of our time. In response, actions and agreements have been made to halt this process and restore disturbed ecosystems. This project focused on one such agreement, the Kunming-Montreal Global Biodiversity Framework 2022 (GBF), an international agreement signed by 196 countries including all the Nordic countries. Now the task is to move from agreement, to implementation, and to policy. This challenge requires careful science-based policy grounded in the knowledge of local ecosystems and biodiversity challenges, as well as transnational and transdisciplinary collaboration.

The Nordic Biodiversity Framework (NBF), a network of scientists and policymakers, is an effort to develop such a collaboration. The cultural, political, and historical similarities between the Nordic countries provide good grounds for Nordic cooperation on the protection of nature and biodiversity. On the other hand, there are also differences between the countries which are highly relevant, such as elements of political and societal culture, climate, and ecosystems. It is not only the common features but also the differences that provide the necessary diversity to create synergy to understand relevant issues and identify leading practices. The project was funded in 2024 by the Nordic Working Group for Biodiversity (NBM) under the Nordic Council of Ministers.

THE NORDIC BIODIVERSITY FRAMEWORK (NBF) is a Nordic collaboration platform between Iceland, Finland, and Denmark. The NBF project was initiated by Biodice, the Icelandic partner, and hosted by the Icelandic Museum of Natural History involving close collaboration with the University of Jyväskylä in Finland and the Center for Macroecology, Evolution, and Climate (CMEC) at Globe Institute, University of Copenhagen in Denmark. The project's partners are all dedicated to work on biodiversity and have been involved in several supportive projects.

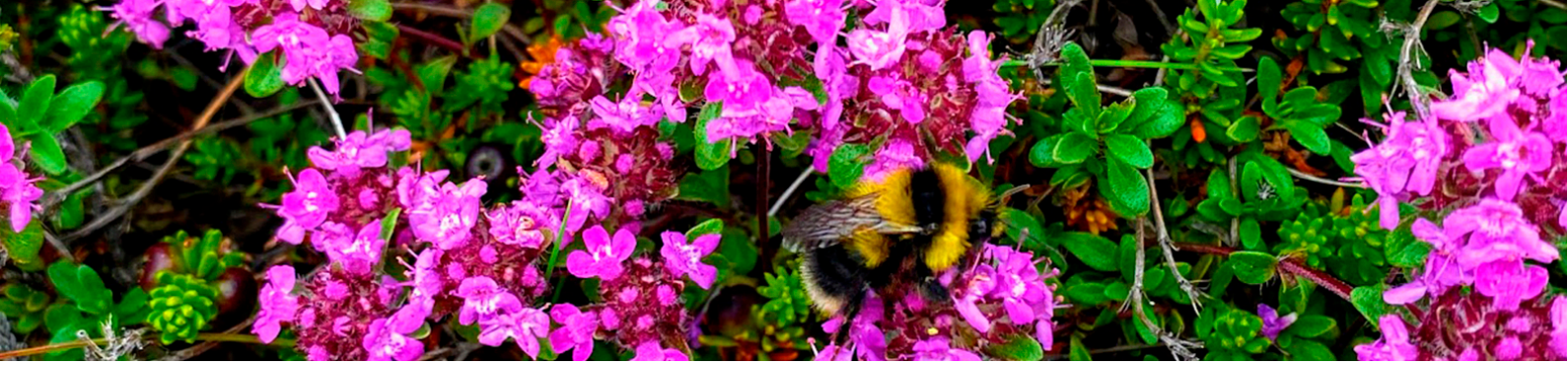
The NBF aimed to lay the foundation for a Nordic synergy by compiling existing knowledge about biodiversity issues and practices and by examining the status of GBF implementation, specifically Targets 1–8 (Table 1) in each of the member countries, Iceland, Finland, and Denmark. Workshops and discussions within the

network in 2024 resulted in valuable connections, opportunities to learn from each other, the identification of leading practices, and preliminary comparisons between countries in terms of the status of biodiversity implementation. The compilation of existing knowledge about biodiversity issues in each country is presented below along with examples of a leading practice and the implementation of one GBF target in the respective country.

TABLE 1. The Global Biodiversity Framework (GBF) contains 23 action-oriented targets. Each country contributes to the GBF according to its national circumstances, priorities, and capabilities. The Nordic Biodiversity Framework (NBF) project explored the implementation of Targets 1–8 in Iceland, Finland, and Denmark.

TARGET 1	Plan and Manage all Areas to Reduce Biodiversity Loss
TARGET 2	Restore 30% of all Degraded Ecosystems
TARGET 3	Conserve 30% of Land, Waters and Seas
TARGET 4	Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts
TARGET 5	Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species
TARGET 6	Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact
TARGET 7	Reduce Pollution to Levels That Are Not Harmful to Biodiversity
TARGET 8	Minimize the Impacts of Climate Change on Biodiversity and Build Resilience

Further details on the Nordic Biodiversity Framework project, members, supplementary material, video recordings, detailed policy reviews etc. are available on: biodice.is/nordic-biodiversity-framework



Status in Iceland

"The history of biodiversity is relatively brief due to the special nature of Iceland."

Snorri Sigurðsson (on successes and challenges in biodiversity protection in the Nordic countries), Director of Nature Conservation at the Icelandic Institute of Natural History.

Country-specific background

EU MEMBERSHIP: No.

While Iceland is not a member of the EU, some of the EU policies are integrated into Icelandic policy through the EEA (European Economic Area). However, the key biodiversity directives (Birds and Habitat) are not included.

PRIMARY ECOSYSTEMS AND NATURAL LANDSCAPE: In terms of natural landscapes, Iceland is first and foremost characterized by volcanic nature and vast areas of uninhabited – and mostly uninhabitable – land.

In Iceland, there are certainly not many species on an international scale, but the value of biodiversity here lies in other aspects. The island country is geographically isolated in the middle of the Atlantic Ocean in comparison to its nearest neighbouring countries. Additionally, Iceland was covered in glaciers during the last ice age a relatively short time ago. This environment has created exceptional conditions for organisms to colonize and evolve. There is great geological diversity in Iceland, which has created unique habitat diversity promoting diverse ecosystems, including opportunities for the few species that have settled to adapt to different habitats without much competition, and in isolation from the continents. This is often reflected in significant biodiversity *within* species and

special local adaptations. Therefore, a simple species count alone is not a useful measure of the value of biodiversity in Iceland (Sandberg et al. 2025). Our task – and priority – is to assess and preserve the biodiversity that has developed here due to unique conditions, and to preserve the circumstances that underlie it.

MAIN BIODIVERSITY CHALLENGES: Climate change is particularly impacting the fishing industry, in both marine and freshwater ecosystems. Land use changes, especially in the lowland areas, are putting more pressure on key biodiversity areas such as natural birch forests, wetlands, and geothermal sites. Additionally, growing sectors such as tourism, aquaculture, and industrial forestry are placing a heavy load on often-sensitive ecosystems.

Key points

1. Urgent need for improvements in Iceland's biodiversity policy

In Iceland, there are considerable gaps in knowledge of key concepts, the lack of mandate and responsibility for many key topics, and uncertainty regarding further implementation. Biodiversity governance is limited, not well defined, and spread out across various environmental government sectors (e.g., natural resources and spatial planning). Although a special Climate Council exists in Iceland, no cross-sectoral governance body for biodiversity exists. With limited capacity to implement the GBF, Iceland failed to submit an updated NBSAP for COP16 in 2024. Further slowing the process during 2024 were factors such as political instability, difficult procedures regarding the establishment of new key protected areas through the Natural Heritage Register (Náttúruminjaskrá), and lack of implementation of necessary actions (e.g., to address invasive alien species). Unfortunately, there are also many examples of expert work that have not led to policy improvements, for example a failed attempt in 2013 to improve the Act on the Conservation and Hunting of Wild Birds and Mammals. Consequently, while the status of implementation is unknown for all GBF targets, it is clear that Iceland is far from reaching them. With a new government in 2025, there are positive signs of improvement regarding the CBD and GBF in Iceland.

2. Evolving biodiversity policy in Iceland: Successes and challenges

Many attempts have been made by experts to improve Icelandic policy regarding biodiversity and nature conservation, with some positive outcomes. For example, the White Paper on Nature Conservation (Hvítbók um náttúruvernd) in 2011 led to

significant improvements in the Nature Conservation Act (Lög um náttúruvernd), particularly regarding biodiversity goals. However, the Nature Conservation Act remains inadequate, and the implementation of key elements has been slow and full of challenges.

In October 2020, biologists at a European Molecular Biology Laboratory workshop identified Iceland as a key case study for biodiversity conservation. This led to the creation of [Biodice](#), a network of scientists focused on research and raising awareness of biodiversity to address global ecosystem challenges.

At the beginning of 2024, the Ministry for the Environment, Energy, and Climate in Iceland established a policy group for the development of a strategy and action plan for biodiversity. It includes representatives from six ministries as well as a representative from the Icelandic Association of Local Authorities. The policy group is responsible for writing a White Paper on Biodiversity (strategy and action plan), which also supports the implementation of the United Nations Convention on Biological Diversity (CBD). In the autumn of 2024 Skúli Skúlason, the chairman of the board of Biodice, was appointed as the representative from the Ministry of Culture, Innovation and Higher Education in the policy group for the development of a biodiversity policy. This is a direct result of the successful workshop that was held in Iceland in April 2024. The policy group is aiming to publish their results in June 2025, and the work supports the outcomes of the Green Paper on Biodiversity (Grænbók um líffræðilega fjölbreytni íslenskra vistkerfa) that was made in 2022.

Additionally, there have been recent policy improvements related to national and regional spatial planning, land reclamation, and forestry and fisheries management. These improvements include some legislative measures and a clear focus on the ecosystem management approach. Although many key implementation steps remain unfinished, the Master Plan for Nature Protection and Energy Utilization (Rammaáætlun) is an example of a successful process. It contains holistic evaluation methods, based on scientific databases (including biodiversity data), to provide a foundation for decision making regarding the use of renewable hydro and geothermal energy sources and the protection of areas from such utilization.

Another recent positive example is that the Ministry of Food, Agriculture and Fisheries established a policy group in March 2023 to lead the work of defining Iceland's priorities regarding the protection of marine areas within Icelandic jurisdiction. A final report from the policy group, Marine Protected Areas (Verndarsvæði í hafi), was published in 2024, including recommendations regarding priorities for government action and which areas can be considered marine protected areas. The policy group believes that, given the current state of knowledge about marine ecosystems, it is a significant challenge to achieve the goal of protecting 30% of Iceland's exclusive economic zone by 2030, as outlined in the CBD. However, it is realistic to take immediate steps based on the existing

knowledge and governance system, and to define how this goal will be pursued in the coming years.

3. A lack of understanding of key concepts

Biodiversity is only superficially integrated into laws on spatial planning and is usually addressed in national, regional, and coastal plans, albeit at very varied levels. A positive example is that the protection of biodiversity is defined as one of the key issues in the new National Planning Strategy 2024–2038 (Landsskipulagsstefna). However, clear guidelines for biodiversity-inclusive spatial planning are missing for municipalities and necessary guidance is sorely needed. This is concerning, as one of the major obstacles identified in the [NBF workshop in Iceland](#) was the lack of knowledge about biodiversity within planning authorities, which affects decision-making. Furthermore, there is a general lack of understanding about invasive alien species (IAS) in Iceland and considerable disagreement regarding the use of potentially invasive species – especially in the context of carbon forestry.



Leading practice

Assessing Iceland's alignment with the GBF: A case study on the Ministry of Food, Agriculture, and Fisheries

The NBF project in Iceland was expanded by the establishment of a cooperation agreement with the Ministry of Food, Agriculture and Fisheries, for whom Biodice has conducted an analysis of how the legislations and policies relate to the GBF. In this collaboration, the Ministry of Food, Agriculture and Fisheries set a great precedent in assessing its sectors for connections to biodiversity actions. These sectors include land reclamation and forestry, agriculture, aquaculture, and fisheries. The assessment analysed how the GBF targets are being pursued within the institutions of the Ministry, and which stakeholders are involved. The assessment was divided into the following tasks:

1. Analysis of which GBF targets are related to the sectors of the Ministry, both generally and specifically;
2. Evaluation of how well the laws, regulations, and policies from the Ministry align with the targets of the GBF;
3. Evaluation of how well the projects of the Ministry of Food's institutions meet the targets of the GBF and how they are progressing; and
4. Analysis of stakeholders related to biodiversity and the sectors of the Ministry. This analysis can be used as a case study for other policy areas and other NBF member countries.

GBF target implementation in Iceland

Biodiversity has, in general, not been adequately integrated into Icelandic laws and policy. Many of the laws relevant to Targets 1–8 do not mention biodiversity but instead emphasize environmental matters and nature conservation. There are a few exceptions, such as the Nature Conservation Act (Lög um náttúruvernd) and the Act on Environmental Assessment for Projects and Plans (Lög um umhverfismat framkvæmda og áætlana), in which biodiversity is well integrated into the legal framework. Some action plans have integrated biodiversity in their policy: The Action Plan for Land Reclamation and Forestry (Land og líf) 2022–2026, the National Planning Strategy 2024–2038 (Landsskipulagsstefna), the Action plan for Agricultural Policy 2024–2040 (Aðgerðaáætlun landbúnaðarstefnu til 2040) and the Action Plan for Climate Change (Aðgerðaáætlun í loftslagsmálum) 2024. Furthermore, there are policies in development in the sectors of fisheries, aquaculture, wind energy, waste reduction, and others where biodiversity is expected to play a significant role.

Despite these, by the end of 2024, no one from the administration had been working on gathering information for the monitoring framework (GBF indicators). The status of implementation is therefore unknown for Targets 1–8 but it is clear that Iceland is not even close to reaching them.

Further information on GBF target implementation for Iceland and an extensive detailed policy review on Targets 1–8 is available on biodice.is/nbf-policy



Example Target 8: Minimize the Impacts of Climate Change on Biodiversity and Build Resilience

HEADLINE INDICATOR: none (relies on component and complementary indicators)

Climate change and biodiversity loss are not two problems which can be tackled separately but are intrinsically connected. Biodiversity is both the foundation for life and the foundation for the chemical processes that constitute our planet's climate. At the same time, anthropogenic climate change threatens to upset the patterns of biodiversity, which has the potential to further exacerbate climate change. Climate mitigation strategies that harm biodiversity will therefore be ineffective in addressing climate change, and vice versa. Target 8 of the GBF therefore requires that climate and biodiversity be thought of as integrated problems. This is a relatively new approach within the political way of thinking.

In 2024, the Icelandic government released an Action Plan for Climate Change ([Aðgerðaaætlun í loftslagsmálum](#)) containing over 150 action points to tackle climate change. Most of these action points do not mention biodiversity, except those relating to ecosystem restoration. The Action Plan for Land Reclamation and Forestry (Land og líf) calls for the mapping and monitoring of the effects of climate actions, such as forestry, on biodiversity. With the exception of forests to climate change, most of the actions in the Action Plan for Land Reclamation and Forestry (Land og líf) have not yet begun in Iceland, having only a proposed budget but no secured funding. It is important to note that all climate actions can have either positive or negative effects on biodiversity. It is therefore necessary to ensure that the effects of all climate actions on biodiversity are positive and contribute to its conservation. It is not enough to focus solely on carbon sequestration and reducing carbon emissions, as in the Paris Agreement, but attention must also be paid to ecosystem restoration and biodiversity conservation.

The objectives of biodiversity restoration or conservation must be equally prioritized alongside climate actions. For example, land reclamation and forestry are best carried out using the guiding principles of the Ecosystem Approach, nature-based solutions, and sustainability. Land use is one of the largest contributors to Iceland's emissions, accounting for about 62% of total emissions in 2022. The largest causes of these emissions are degraded ecosystems, such as drained wetlands and soil erosion. Ecosystem restoration (e.g., in wetlands) and increasing vegetation cover are strong actions to reduce emissions and increase carbon sequestration. These actions also contribute to improving ecosystems' ability to adapt and enhance the services that ecosystems provide to humans and other living organisms. Ecosystem restoration and better land use is mentioned in the action plan for agriculture as a method for lowering emissions in agriculture (Target 2.3 of the action plan for agriculture).

Forestry is considered a strong climate action for carbon sequestration, but it can become complicated on the biodiversity front. This deserves special attention in Iceland where forestry commonly uses alien species which have become invasive and reduced biodiversity in other countries (Nuñez et al. 2017; Kourantidou et al. 2022). The EU has already increased requirements for the use of native species in restoration and climate actions. It is necessary to ensure that the goals of these climate actions promote biodiversity and ecosystem functions (e.g., through restoration) alongside emission reduction to meet the targets of the GBF and other international agreements.



Status in Finland

"Defence and sabotage actions affecting Nordic biodiversity must be recognised, and their harmful impacts on biodiversity should be compensated in Nordic countries."

Hanna-Kaisa Lakka, Postdoctoral Researcher at University of Jyväskylä.

Country-specific background

EU MEMBERSHIP: Yes.

PRIMARY ECOSYSTEMS AND NATURAL LANDSCAPE: Finland is a country of boreal forests and 168 thousand lakes, making this Nordic country's nature unique. Forest covers 86% of Finland's land area, comprising 26.3 million hectares so, unsurprisingly, the economy is partly based on forestry.

MAIN BIODIVERSITY CHALLENGES: Land use and intensive industrial forestry. To achieve the goal of 30% nature protection, Finland needs to achieve transitions in forestry practices that abandon harmful actions such as ditching, clear-cuts, removing stumps, and the use of fertilisers or pesticides. These intensive forestry practices also have an immense impact on the vitality of inland and coastal aquatic ecosystems. The abundance and diversity of freshwater systems will make aquatic ecosystems, in particular, crucial areas for biodiversity protection.

Key points

1. Finland failed to submit the Action Plan to the COP 16 meeting

At COP 16 in October 2024, parties to the CBD were expected to show the alignment of their NBSAPs with the GBF. Finland submitted a draft of national targets but not the NBSAP. While Nordic countries are committed to halting biodiversity loss over the next five years, Finland's success without a NBSAP heavily depends on political will and action. However, Finnish biodiversity policies are often delayed in the planning phase, making implementation, and monitoring the impact of biodiversity policies difficult. The lack of biodiversity actions by the government directly threatens the lives of numerous species on land, in inland waters, and in the Baltic Sea.

2. Urgent need to stop hostile nature policy

A range of hostile measures have recently been issued in Finland regarding nature. These policies aim at reducing the amount of biodiversity funding and weakening the obligations to implement EU and GBF agreements. Some of these hostile measures include cuts to the funding of the work related to Finland's IUCN Red List of Threatened Species. This decreases the quality and reliability of the IUCN biodiversity assessment in Finland.

An example of hostile action was when thousands of endangered freshwater pearl mussels died in August 2024 when logging machinery crossed the River Hukkajoki. The company Stora Enso, 10.7% owned by the Finnish state, violated the buffer zone along the river. Police are investigating the case as a severe environmental crime. The timber from Hukkajoki does not comply with the guidelines of either of Finland's timber certificates (FSC and PEFC) and cannot be used commercially, as the logging is suspected to be an environmental crime. A 50-meter buffer zone is recommended for freshwater pearl mussel habitats but has yet to be added to Finnish law. Furthermore, some expert groups, such as the Finnish Nature Panel and the Finnish Climate Change Panel, have shown that policy measures (a regulatory, financial, or voluntary instrument) can cause deforestation and biodiversity loss in Finland (Lakka et al. 2023 and references therein).

3. Biodiversity and safety are linked in Finland

War is a human crisis and a massive biodiversity crisis. The Winter War (1939–1940) lasted 105 days in 1939–1940 and 25,904 Finnish soldiers and 957 civilians died. Just over a year after the end of the Winter War, the Continuation War (1941–1944) began, in which 63,204 Finnish soldiers died. Since 2022, Finland's neighbour Russia

has been at war with another border neighbour, Ukraine. War can significantly reduce the human population in these small countries and leave behind nature crises as well, such as pollution and overuse of resources. In Finland's case, massive war reparations to the Soviet Union were paid partly from Finland's natural resource, timber.

An example of the connection between safety and biodiversity is the border fences. Finland will build approximately 200 kilometres of a barrier fence along the 1300-kilometer-long eastern border during 2023–2026. The purpose of the fence is to stop illegal immigration from Russia and reduce Finland's dependence on the effectiveness of Russian border control. The fence area, including a ditch and a road, will be 20 m wide and treeless. Trees have already been removed from 100 km of the fence area. It is a well-researched fact that fences disturb animal movement (Trouwborst et al. 2016). This aspect should be recognized, and the biodiversity lost should be compensated for when planning new protection areas in the border area with military fences.

4. Freshwater ecosystems are neglected in biodiversity actions

Numerous changes in forest policy and national forest economic use have contributed significantly to the decline of biodiversity and the state of nature in Finland. Therefore, the forestry sector cannot be excluded when biodiversity-related problems are discussed in Finland. However, this intense focus on forestry has led to the neglect of conservation actions in Finnish freshwater ecosystems.



Leading practice

The Forest Biodiversity Program METSO is a voluntary conservation program to protect privately owned forests. METSO aims to halt ongoing decline in the biodiversity of forest habitats and species and ensure that a favourable trend in forest biodiversity is established by 2025. It is the only government-supported tool for protection. Forest owners may offer their forests for protection through several different ways (e.g., permanent versus temporary) and are given the opportunity for nature management projects. Whichever avenue the owners take, they are financially compensated accordingly. There is, of course, still room for improvement. Since this is based on voluntary conservation of forests, the areas offered for protection probably do not represent high biodiversity or ecosystem connectivity. Finland should encourage the protection of new areas that enable connectivity and ensure that all ecosystem types and species are considered equally when selecting new conservation areas. The Finnish Nature Panel recommends that conservation actions should be implemented at the municipality level to ensure equal protection across the country (Lakka et al. 2023). Regardless, this is a great example of cooperation between the government and landowners to achieve conservation goals.

GBF target implementation in Finland

Biodiversity agreements such as the GBF have been added to Finland's nature protection law, making it a powerful agreement for environmental policy. Finland also follows EU legislation, which has slowed biodiversity loss in all 27 EU member states, including Finland. Examples of such nature-friendly EU policies include the new Nature Restoration Regulation, which put the EU Biodiversity Strategy for 2030 into action and is the first continent-wide, comprehensive law of its kind. The Nature Restoration Regulation is a key element of the EU Biodiversity Strategy, which sets binding targets to restore degraded ecosystems. The Regulation aims to restore ecosystems, habitats, and species across the EU's land and sea areas, enabling the long-term and sustained recovery of biodiverse and resilient nature. Another example of nature-friendly EU policies is the ban on the hunting of birds with lead shot in wetlands, which has protected around 1 million birds from dying of lead poisoning each year. The power of EU law should not be underestimated.

Many key commitments of the Finnish EU Biodiversity strategy are relevant to GBF Targets 1–8. Despite this, more urgent action and monitoring are needed to ensure effective implementation and accountability in protecting biodiversity. The Finnish Nature Panel has provided guidelines on which indicators to use and how to measure improvements in nature to fulfil EU commitments (Lakka et al. 2023). Many of these same actions will also fulfil GBF targets, however, GBF-specific

actions are being finalized and are still pending official Finnish government decisions. Policy development in EU countries should focus on streamlined plans and determined action. Action is the only way to achieve effective nature policy and the only way to stop the ecosystem degradation and biodiversity crisis.

Further information on implementation on GBF Targets 1–8 for Finland is available on biodice.is/nbf-policy.



Example: Target 6. Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact

HEADLINE INDICATOR: Rate of invasive alien species establishment

The GBF contains the commitment to prevent and manage established invasive alien species and decrease the rates of introduction and establishment of other known or potential invasive alien species by at least 50% by 2030. Invasive alien species (IAS) are animals, plants, pathogens, and other organisms that are non-native to an ecosystem, spreading to new areas with human intervention, which may cause environmental harm or negatively affect human health. They can have significant negative impacts on the economy. Between 1960 and 2021, the total cost of invasive species was EUR 7.94 billion in Nordic countries (likely an under-

estimation): Norway (EUR 3.07 billion), Denmark (EUR 2.09 billion), Sweden (EUR 1.38 billion), Finland (EUR 1.06 billion), and Iceland (EUR 24.20 million) (Kouratidou et al., 2022).

As of 2024, Finland had 29 harmful IAS, eight species groups, and two hybrid species on the national list. Fifteen of these are plants, four mammals, eight amphibians, two molluscs, and one hybrid bird. In addition to the GBF target, EU countries will be responsible for ensuring that the number of endangered and near-threatened species threatened by IAS decreases by 50%. This means that IAS in the next Finland Red List should threaten only a maximum of 31 endangered and near-threatened species (reduced from 63 species in 2019) (Hyvärinen et al., 2019). Finland will publish the next Red List of threatened species in 2029.

In Finland, the most harmful invasive alien plant species to Red-Listed species are garden lupin (*Lupinus polyphyllus*), and Japanese rose (*Rosa rugosa*) (Lakka et al., 2023). It is estimated that 72 and 48 Red List species are threatened by garden lupin and Japanese rose respectively (Jauni et al., 2023). The most harmful invasive alien mammals to Red listed species are the American mink (*Neogale vison*) and the raccoon dog (*Nyctereutes procyonoides*).

In order to reach both the GBF and EU targets, prioritization of certain areas and species will be crucial. Wherever possible, the immediate removal of IAS plant populations in areas of rapid dispersal (e.g., close to ditches, rivers, inland waters, and the Baltic Sea) is highly recommended. Since chemical removal of IAS adversely affects native fauna, mechanical removal techniques are best. Furthermore, Finland's management actions should prioritize halting the establishment of any IAS in biologically valuable areas, particularly in Lapland, where no IAS have been observed and native fauna has not yet been disturbed.

Finland has made progress in addressing invasive alien species under Target 6 of the GBF, but challenges remain. Although strategies and advisory bodies are in place, ongoing efforts and resources are needed to manage and reduce their impact effectively.



Status in Denmark

"Safeguarding biodiversity requires large, cohesive areas of nature, which are currently lacking in Denmark. We need transformative changes to address this issue."

Carsten Rahbek, Center for Macroecology, Evolution and Climate, University of Copenhagen.

Country-specific background

EU MEMBERSHIP: Yes.

PRIMARY ECOSYSTEMS AND NATURAL LANDSCAPE: Natural ecosystems in Denmark are fragmented and relatively small. More than half of the Danish land area is used for farming, which makes farmers the main landowners and primary caretakers of ecosystems. Agriculture therefore poses a major challenge to the goal of increasing the size of protected natural areas. Denmark is also the densest populated of the three countries, which also contributes to the challenges.

MAIN BIODIVERSITY CHALLENGES: Intensive land use and farming leaves little room for wild nature and also has spillover effects on the health of coastal waters due to agricultural pollutants. To achieve the goal of 30% nature protection both on land and the sea, Denmark needs to reduce the land area used for farming. There is disagreement on what areas are truly "protected" and Denmark needs a useful definition of this term.

Key points

1. No overall assessment of the GBF targets for Denmark

No official governmental assessment has been prepared concerning the Danish status and progress towards the GBF targets adopted in 2022. Nor have any independent institutions, such as universities or associations, prepared such assessments. Despite the agreed international obligations, the Danish NBSAPs mainly address the targets through qualitative lists of various activities and initiatives, mainly focusing on a few targets. Overall, there are currently few political initiatives with a direct focus on Denmark living up to the targets. This is in spite of the fact that decades of monitoring reports have consistently documented the very poor condition of Danish nature and biodiversity.

2. The official status of Target 3 has been disputed

Regarding Target 3 in GBF (30% of land, waters and sea conserved), the Danish NBSAPs report that 15% of the land area is protected. At sea, protected areas will cover 29%, after implementation of existing plans. However, the Danish Biodiversity Council, appointed by the government, has disputed these figures. It estimates that only 1.6% should count with certainty as protected area on land. Another 5.5% should be assessed further, while the remaining areas under different formal protection schemes are subject to either forestry or intensive agriculture, or insufficient legal protection. At sea, only around 2% should count, while the rest is insufficiently protected and/or subject to benthic trawling.

3. Institutional links between science and policy

Denmark has established a strong framework to support the link between science and policy concerning biodiversity, nature, and environment. Most prominent are The Biodiversity Council (Biodiversitetsrådet) and the Climate Council (Klimarådet), established in 2015 and 2020 as advisory bodies to guide governmental policies. The members of the councils are independent university scientists appointed by the government, but the government has no obligation to follow their recommendations. The Danish Ministry of Environment, together with the universities, has also established a national office hosted and run by the universities to communicate the work of IPBES and encourage Danish scientists to participate.

4. Sector integration is increasing

Recent initiatives seem to promote coordination across sectors in Danish nature, biodiversity, and environmental policy, which has traditionally been strongly divided.

One example is the "[Agreement on a Green Denmark](#)" ("Den Grønne Trepert") made in 2024 between the government, the agriculture and business community, and a green NGO. It involves abandoning agriculture on 400,000 hectares of land (10% of Denmark) to benefit the aquatic environment and climate as well as nature and biodiversity. Another example is the "Biodiversity Partnerships" (Biodiversitetspartnerskabet) established by the Ministry of Environment, the Federation of Danish Industries, and the universities. These partnerships have created "idea catalogues" with recommendations for how businesses can minimize their biodiversity impacts or even improve the status of biodiversity.

5. Public and political awareness is increasing

While there are currently few concrete political initiatives that focus on Denmark living up to the agreed GBF targets, there is an increasing concern for biodiversity loss. This is being expressed by the general public interest and increasing focus from the private sector. A dramatic increase in the number of media reports supports this observation, as do several recent political agreements. A simple search for how often the word "biodiversitet" (biodiversity) appeared in the Danish Media via the database *Infomedia* (which includes internet media, regional and local media, local weekly newspapers, magazines, national newspapers, news services, radio, and TV) illustrates this increasing focus starting in 2019–2020.

6. Movement towards change

Denmark benefits from having a relatively strong legal and institutional framework in place which can be used as a foundation for improvement when seeking to achieve the GBF targets. Denmark also benefits from having a very strong research sector, where scientists have been working across disciplines to provide policy advice that considers both ecological and climate factors, as well as economic and societal considerations. These scientific efforts are supported institutionally by the formation of independent, government-funded councils (e.g., the Biodiversity Council and the Climate Council), which provide a link between science and policy making. In general, it seems that Denmark is in a transitional phase where the political actors in parliament and government have demonstrated awareness that structural changes are necessary to preserve nature and they have taken some steps in that direction. Whether these steps are sufficient is a matter of contention, but at least they are indicative of a cultural shift and a willingness to address the issues. At the same time, there is a strong tendency in civil society to push for more changes to address both biodiversity and climate issues. In summary, there is a clear movement towards changes in Denmark expressed both at the scientific, policy and societal level, but at this point, it is too early to say how these changes will be implemented or what effects they will have.



Leading practice

In January 2024, the Danish government called for negotiations between the government, the lobby and interest group for agricultural industries, some labour unions, the Danish association of municipalities, the largest organisation of employers, and one environmental NGO (Danmarks Naturfredningsforening). The purpose of the negotiations was to come to a comprehensive agreement on the future of agricultural land use in Denmark. What resulted was referred to as "The Green Tripartite" ("Den Grønne Trepert", 2024). This included plans to decrease both nitrate and greenhouse gas emissions from agriculture, mainly for the benefit of the coastal environment and the climate (aligning with GBF Targets 7 and 8). Converting farmland into natural areas would also benefit biodiversity (addressing GBF Targets 1–3), however, this effect depends very much on how and where it is implemented.

The agreement proposes changes of about 15% existing Danish farmland and close to 10% of the total Danish land area for afforestation, restoration of wetlands, and other actions. The afforestation will include both unmanaged forest and plantations for wood production. As this conversion of farmland requires action by private landowners, the agreement sets aside a new "Green Area Adjustment Fund" (Den Grønne Arealfund") for public purchase of land and for private initiatives for

land changes. Furthermore, the agreement introduces a greenhouse gas tax on agriculture and animal production which is, to our knowledge, the first of its kind in the world.

This agreement could potentially be the most important initiative affecting biodiversity and environment in Denmark in recent times and for many years to come, and it is certainly presented as such to the public. However, the practical consequences and implications of its implementation are still uncertain and will hopefully become clearer in the future. Concerns and criticisms include that isolated changes in land use in small areas may not be connected enough for sustaining thriving ecosystems, emission taxes are too low and have too many loopholes to be effective, and the reliance on voluntary actions and participation is not a strong guarantee of proper implementation. It is, however, interesting and positive that this plan indicates a more comprehensive "systems approach" to tackle the integrated issues of climate, pollution, biodiversity, land use and agriculture, rather than treating them as separate issues. Additionally, the political process was somewhat aligned with the principles of the Ecosystem Approach by bringing some of the relevant parties together to encourage them to come to an agreement.

GBF target implementation in Denmark

The primary obstacle for biodiversity conservation in Denmark is related to intensive land use, which takes up space for nature and affects the coastal waters and ocean due to agricultural nutrient pollutants. Thus, the focus in Denmark has been on the GBF targets related to land use (Targets 1–3) as well as the issue of pollution (Target 7) as it relates to land use. Furthermore, Denmark does have a relatively strong institutional structure for scientific capacity building and knowledge transfer (Targets 20–21). Other issues addressed by Targets 4–8, such as sustainable trade and harvest of wild species (Target 5), invasive alien species (Target 6), and impacts of climate change on biodiversity (Target 8) are partially covered by a combination of EU regulations and Danish laws. However, there are still significant gaps in restrictions and enforcement, especially as relates to benthic trawling and marine invasive species.

Further information on implementation on GBF Targets 1–8 for Denmark is available on biodice.is/nbf-policy.



Example: Target 3. Conserve 30% of Land, Waters and Seas by 2030

HEADLINE INDICATOR: 3.1 Coverage of protected areas and OECMs

Given that the overarching obstacle to Denmark's achievement of the GBF targets is land use (which concerns both land and ocean), the focus is on reports and initiatives that relate to Targets 1–3 on spatial planning/management, restoration, and conservation.

In 2020, the Danish parliament voted on an agreement ("Natur og Biodiversitetspakken") which included the establishment of an advisory body, The Biodiversity Council (*Biodiversitetsrådet*), to guide government policies. The members are independent university scientists appointed by the government, and the council is governmentally funded, but the government has no obligation to follow its recommendations. Based on their interpretation of the relevant EU-guidelines on protected areas, combined with targeted area analyses, the Biodiversity Council estimates that only 1.6% of the Danish land area and 1.9% of the sea can currently be counted as protected with certainty while another 5.5% of land and 0.5% of the sea could potentially be considered protected depending on further assessment of specific areas and their management. No areas on land or sea in Denmark currently qualify as strictly protected but the council estimates that the areas already protected could eventually achieve that status. There is thus

an immense discrepancy between this interpretation and the areas reported as protected by the Danish government. As mentioned above, the Danish NBSAP reports that 15% of the land area is protected, and 29% of the sea will be protected, after implementation of existing plans.

The reason for this discrepancy is the lack of agreement on what counts as "protected". Many areas in Denmark with an official status of "protected" (including the Natura 2000 areas) are only legally protected against specific activities, or only specific species or habitats are protected. In most areas, the protection schemes do not include a general protection of the biodiversity and natural ecosystems. Another issue is that some officially "protected areas" in Denmark on land are subject to agriculture and forestry or include areas with summer cabins or permanent human settlements. The Biodiversity Council argues that such areas should not count as "protected nature". The same applies for formally protected areas that are subject to benthic trawling.

There is thus no official consensus on what the word "protection" entails. This is not merely a Danish issue, but part of a general European tendency of lax national implementation of EU nature laws. For example, destructive fishing is prevalent inside the Natura 2000 network and bottom trawling occurs in 86% of the European area officially designated to protect bottom habitats. We expect that disputes over these definitions will continue in Denmark but recognize that there are signs in both government statements, civil society and science-based policy documents pointing towards giving more content to the concept of "nature protection" in Denmark.



NBF workshops

The Nordic Biodiversity Framework (NBF) organized three workshops in 2024. The first one was held in Iceland in April, the second in Finland in October and the third in Denmark in December. Further details and information about the workshops, recordings and results are available on <https://biodice.is/nordic-biodiversity-framework/>

Workshop 1 in Reykjavík, Iceland, April 23rd, 2024

The aim of the workshop was to analyse and discuss the issue of biodiversity as it appears in Icelandic administration. The workshop was well attended by representatives from nearly all Icelandic Government Ministries, their institutions, and other related entities that work with biodiversity issues at the highest level of administration. After introductory presentations, the participants met in discussion groups with the intent of 1) connecting people across administrations and 2) sharing information on the state of affairs and examining whether the projects of ministries and government agencies reflect the importance of biodiversity and contribute to the fulfilment of the goals of the GBF policy. Themes included: 1) understanding of biodiversity, 2) how projects (planned and ongoing) on biodiversity and the GBF goals are progressing, and 3) cooperation between stakeholders and cooperation between ministries/ institutions. Analysis of the focus groups showed that there is generally a shallow understanding of the concept of biological diversity, except where experts in life sciences work. Although the issue affects the work of all participants to some extent, the connection was unclear in many cases. Participants specifically mentioned biodiversity's links to public health and prevention, the global goals and sustainable development, climate change, and planning issues. Participants mentioned many obstacles to projects on biodiversity, including weak administration and lack of resources, and made enthusiastic and useful suggestions for improvement. Detailed results from the workshop are available on biodice.is/nbf-workshop-in-iceland.

Main outcomes

- The connection between biodiversity and planning was recognized by participants as necessary, even though they are often disconnected. This is especially the case since there are great external demands (e.g., from the European Union), but there is a lack of information, education, and funding to satisfy them.
- Obstacles to biodiversity projects: weak administration, lack of research and data, access to information and dissemination, conflicts of interest, lack of resources and capacity, misaligned priorities, and lack of accountability.
- Suggestions for improvement: clearer and more effectively communicated information, better access to data, strengthened cooperation across institutions and Ministries, increased funding, the involvement of stakeholders in planning processes, and the establishment of a Biodiversity Council.

Workshop 2 in Helsinki, Finland, October 7, 2024

The workshop's objective was to explore specific GBF targets and their implementation in Finland. Participants were representatives from Finnish Ministries, institutions, companies, NGO's, the Finnish Nature Panel, universities, and others. Presentations explained the structure of the GBF as well as the status of implementation in Iceland and Finland. These were followed by a survey given to conservation scientists and experts about Target 3 ("30 by 30"). The preliminary results identified will (inner drive or intention to act) as the main barrier to successful conservation in land, sea and inland waters and underlined the importance of equal protection for all biomes. Two panel discussions focused on the limited freshwater protection in Finland (Target 3: "30 by 30") and the impacts of pesticide use on human health and biodiversity. Recordings from the workshop's presentations and panel discussions are available on biodice.is/nbf-workshop-in-finland.

Main outcomes

- Finland has great potential to conserve freshwater ecosystems and species and a great responsibility for freshwater resources in Europe. Conservation actions should treat all biomes equally – land, sea, and inland waters.
- Endangered species (Red Listed Species) should not be hunted. [For example](#), the Common Eider was listed as an endangered species in Finland in 2019 but over 4,000 of them were hunted in 2019–2023. International and national laws should not allow hunting or fishing of endangered species. Likewise, Finland should update the hunting law and remove Red Listed Species from the list of hunted species.

- Chemical taxes are urgently needed to lower environmental contamination, mitigate biodiversity loss, and avoid chemical risks for humans. Finland should follow Denmark's example in implementing pesticide taxes on harmful chemicals, which lowers environmental contamination, mitigates biodiversity loss, and avoids chemical risks for humans.
- Chemical treatments in nature are not the best way to eliminate invasive or harmful alien invasive species. Chemicals do not affect only the target species but kill or harm many other species directly or indirectly and can lower the vitality of ecosystems. Alternative methods for chemical treatments should always be considered the first and the best methods to address invasive species-related problems.
- Safety and biodiversity are linked. Countries' actions to improve internal safety may impact biodiversity, and sabotage during times of peace can have an unwanted effect on biodiversity. Defence and sabotage actions affecting Nordic biodiversity must be recognised, and their harmful impacts on biodiversity should be compensated in Nordic countries.
- The fact that policymakers can exert agency in many ways – through laws, regulations, and biodiversity funding – goes hand in hand with their ability to change the wellbeing of Nordic nature. All these aspects of policymaker actions come with a responsibility to safeguard the present and future Nordic nations and nature.

Workshop 3 in Copenhagen, Denmark, December 10–11, 2024

The two-day workshop was highly successful and very well attended (physically and online) by a broad representation of institutional and societal representatives from research, policy, private sector, think tanks and civil society. However, despite being invited, no government representatives were able to attend. The objectives of the workshop were to: 1) compare the efforts to protect biodiversity and implement the GBF targets in Iceland, Finland, and Denmark; 2) explore what these countries can learn from each other; and 3) to share and discuss strategies for biodiversity protection with different stakeholders and practitioners. The starting point for the discussion was the main preliminary findings of the NBF project, which were presented by the project participants and in a draft document. The presentations were followed by focused and in-depth discussions among workshop participants, ranging from scientists and researchers to representatives from non-governmental organisations, think tanks, and civil society stakeholders. As well as functioning as a synthesis exercise for the NBF project, the workshop was also meant to provide inspiration for non-government stakeholders on how they can best support efforts to safeguard and restore biodiversity. From the discussion segments, it became evident that while no member country in the NBF project (Iceland, Denmark, and

Finland) is fulfilling its obligations to the CBD, there are great opportunities for sharing experiences and best practices in the Nordic countries regarding biodiversity. Recordings from the workshop's presentations are available on biodice.is/nbf-workshop-in-denmark.

Main outcomes

- **GOVERNMENT ACCOUNTABILITY:** *"Despite various efforts and non-governmental pressures, the governments of Iceland, Denmark, and Finland have largely failed to comply with the effective implementation, action, and reporting of the GBF targets."*
Skúli Skúlason, Icelandic Museum of Natural History and Hólar University.
- **NON-STATE ACTORS' ROLE:** *"The Trepert Minister's refusal to present DK biodiversity goals and plans at the Nordic Workshop on biodiversity highlights the importance of non-state actors in protecting biodiversity."*
Katherine Richardson, Research Centre on Ocean, Climate, and Society, University of Copenhagen.
- **INFRASTRUCTURE DIFFERENCES:** *"Denmark and Finland have the best infrastructure, while Iceland lacks a public biodiversity council. At this workshop, we share experiences, learn, and adapt to help Iceland's complex ecosystems".*
Skúli Skúlason, Icelandic Museum of Natural History and Hólar University.
- **ACTION AND EMPOWERMENT:** *"We are all waiting for politicians to tell us what to do, but what can we do to make it easier for them to move forward with necessary actions?"*
Katherine Richardson, Research Centre on Ocean, Climate, and Society, University of Copenhagen.
- **POLYCENTRIC GOVERNANCE:** *"Dynamic ecosystems require dynamic management! Locals are often better at responding to changes than centralized governments are. Polycentric governance is key to empowering people to take care of nature."*
Ole Sandberg, Researcher at University of Iceland.
- **RECOGNITION OF HARMFUL IMPACTS:** *"Defence and sabotage actions affecting Nordic biodiversity must be recognised, and their harmful impacts on biodiversity should be compensated in Nordic countries."*
Hanna-Kaisa Lakka, Postdoctoral Researcher at University of Jyväskylä.
- **BIODIVERSITY HISTORY IN ICELAND:** *"The history of biodiversity is relatively brief due to the special nature of Iceland."*
Snorri Sigurðsson, Icelandic Institute of Natural History.

- **DENMARK'S BIODIVERSITY CHALLENGES:** *"Safeguarding biodiversity requires large, cohesive areas of nature, which are currently lacking in Denmark. We need transformative changes to address this issue."*
Carsten Rahbek, Center for Macroecology, Evolution and Climate, University of Copenhagen.
- **PLASTIC WASTE IMPACT:** *"Plastic waste near Arctic waters poses a risk to biodiversity. People in the area know this, but it needs wider recognition. Policymakers' actions come with a responsibility to safeguard the Nordic nations' nature now and in the future."*
Hanna-Kaisa Lakka, Postdoctoral Researcher at University of Jyväskylä.
- **PROTECTED AREAS:** *"Biodiversity actions should take place to enlarge and connect existing protected areas of high conservation values. This has been echoed by many speakers during the workshop with the Nordic Network on Biodiversity."*
Anders Horsten, Nature Policy Advisor, Danish Society for Nature Conservation (DN)
- **NATIONAL BIODIVERSITY LAW:** *"We know what it takes and how to prioritize in order to revert the loss of biodiversity. What we need is a national biodiversity law."*
Signe Normand, Aarhus University, Chairperson, Danish Biodiversity Council.

Further outcomes are discussed in the next chapter "Synthesis", as they pertain more widely to NBF member countries.



Synthesis

"Denmark and Finland have the best infrastructure, while Iceland lacks a public biodiversity council. At this workshop, we share experiences, learn, and adapt to help Iceland's complex ecosystems".

Skúli Skúlason, Icelandic Museum of Natural History and Hólar University.

"We are all waiting for politicians to tell us what to do, but what can we do to make it easier for them to move forward with necessary actions?"

Katherine Richardson, Research Centre on Ocean, Climate, and Society, University of Copenhagen.

Protecting Nordic biodiversity

Iceland, Finland, and Denmark have very different infrastructures for protecting biodiversity, but there are common threads and lessons to be learned through comparison (Table 2). Some of the main differences between NBF member countries were political, primarily as regards EU membership, which is an important factor for biodiversity conservation and environmental protection. Many of the laws and regulations used by Denmark and Finland come directly from the EU legislative and regulatory framework, making legislation easier. However, these EU regulations are not always directly written into national legislation but only referred to, leading to the regulations being more obscure. Without EU membership, on the other hand, Iceland must write and pass its own laws on matters that do not relate to the EEA trade agreement. Having to create its own legislation means that the information is more readily available. In many cases, however, the political structures in Iceland struggle to keep up with both legislation and enforcement of the many environmental challenges.

TABLE 2. Simple comparison of nature, policies, infrastructure, and main challenges in the NBF member countries (Iceland, Finland, and Denmark).

	ICELAND	FINLAND	DENMARK
Key aspects of nature	Volcanic island, marine areas	Forests and freshwater systems	Semi wild nature, coastal areas
EU	No	Yes	Yes
NBSAP for 2024	No	Yes ¹	Yes ²
Biodiversity advisory board	No	Yes	Yes
IPBES	No ³	Yes	Yes
Infrastructure	Weak	Strong	Strong
Main challenges	Weak infrastructure	Forestry and urbanization	Urbanization and agriculture

1: Yes, draft, but not approved by the government.

2: Yes, but disputed by the Danish Biodiversity Council.

3. The Minister of the Environment, Energy and Climate confirmed Iceland's membership in IPBES in April 2025.

Additionally, different governance strategies can greatly affect the implementation of policies. Comparatively speaking, Iceland has relatively weak governance where there is a great distance between passing formal laws and the creation of the institutional structures necessary to manage and enforce the laws. In some cases, this is an advantage since it may allow different parties to work things out without having to resort to legislative enforcement. There is a general tendency in Iceland to understand that companies, municipalities, science and policy-based institutions, and civil society have shared interests in nature protection and need to work together. The lack of centralized government enforcement leaves room for the flexibility required for the Ecosystem Approach. However, this relies heavily on strong communication and cooperation, which can break down easily due to conflicting interests and other factors. Superficially, Denmark is nearly the opposite case of Iceland. It has a relatively strong government where decisions at the top level are expected to be carried out at lower levels. Denmark has institutional

structures for environmental and ecosystem management, but top-level decisions can be slow and influenced by political complexities. Finland's infrastructure can be strong and forward-looking at the same time. Forestry is heavily integrated into Finland's political structures. When environmental problems are related to economy and infrastructure, environmental policy is often designed to support the collection of maximum benefits from nature. A future challenge for Finland is to create a sustainable political structure.

Overview of workshops

The goals, topics, and format of each workshop reflected the needs and interests of each host country (Table 3). Nevertheless, common themes and obstacles did emerge which may represent pan-Nordic issues. The success of these workshops lay partially in the fact that they occurred at all, providing space for collaborative and even groundbreaking discussions between various stakeholders and representatives from other nations.

TABLE 3. Comparison of the three workshops hosted in Iceland, Finland, and Denmark in 2024. The goals, topics, and format of each workshop reflected the needs and interests of each host country. While most results from the presentations, panels, discussions, and focus groups involved were country-specific, some themes repeatedly emerged that may indicate pan-Nordic issues and obstacles.

WORKSHOP	DESCRIPTION
Iceland Reykjavík April 23 2024	<i>COOPERATION AND BARRIERS IN INTEGRATING BIODIVERSITY INTO POLICY ACTIONS</i> Participants: Representatives from Icelandic Ministries, institutions, universities, municipalities, NGOs and others. Focused group discussions: Exploring the general understanding of biodiversity, progress of biodiversity- related projects, and status of cooperation between stakeholders and ministries/institutions. MAIN RESULTS: 1. Lack of strategies in planning due to poor understanding of biodiversity 2. Weak biodiversity-related governance 3. Lack of data, access to information, and dissemination

Finland Helsinki October 7 2024	<i>TOWARDS A BIODIVERSITY LOSS-FREE NORTH</i> Participants: Representatives from Ministries, institutions, companies, expert groups, universities, private sector and other. Survey: Communicating Conservation Status to Policy: Pros and cons about the 30% protection needs of land, sea and inland waters Panel discussions: Exploring freshwater protection (GBF: Target 3) and chemical pollution (GBF: Target 7) MAIN RESULTS: 1. Finland has great potential to conserve freshwater ecosystems and species, but these are often neglected 2. Chemical taxes are urgently needed to lower environmental contamination, mitigate biodiversity loss, and avoid chemical risks for humans. 3. Biodiversity and safety are linked
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Denmark Copenhagen December 10–11 2024	<i>PROTECTING AND RESTORING BIODIVERSITY IN THE NORDIC REGION</i> Participants: Representatives from Danish institutions, universities, private sector, think tanks and civil society. Plenary discussions: What is the role of leading practices and non-governmental stakeholders in future Nordic initiatives addressing biodiversity? MAIN RESULTS: 1. Leading practices exist in each NBF country that others can learn from 2. No NBF country is fulfilling their obligations to the CBD 3. Non-governmental stakeholders are crucial for biodiversity protection in Denmark
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Main messages

- **COMPARATIVE LESSONS:** Iceland, Finland, and Denmark have very different infrastructures for biodiversity protection. While the threats vary – ranging from business interests to defence activities – common challenges highlight the need for collective action. Following the example and leading practices of the other Nordic countries would be one way to start. For example, Finland

should follow Iceland's example of the cooperation of Icelandic ministries and stakeholders. Insufficient engagement from different ministries may partly explain a delay in reporting and the low implementation rates of GBF targets in Finland. Additionally, following Denmark's example to implement a pesticide tax on chemical toxins would benefit both Iceland and Finland.

- **A UNIFIED NORDIC BIODIVERSITY STRATEGY** and approach is essential. Such a framework can address the tension between economic development and environmental stewardship. Furthermore, harmonizing the definitions of concepts, such as "protected areas" and "biodiversity", across countries and in alignment with CBD and EU guidelines emerged as a top priority.
- **LOCAL EMPOWERMENT:** Dynamic ecosystems require dynamic management. Polycentric governance models that empower local communities to act as custodians of biodiversity were highlighted as key to success.
- **NON-STATE ACTORS:** The synthesis workshop in Denmark emphasized the critical role of non-state actors in driving biodiversity protection, as evidenced by the participation of leading experts and stakeholders. It highlighted the importance of ongoing discussions fostering actionable solutions and demonstrated the power of collaboration in addressing complex sustainability challenges.
- **LIMITED ASSESSMENTS OF GBF GOALS:** Even though the GBF was meant to be taken as a whole, with all targets working together toward the long term goals, it was evident from the workshop discussions that the Nordic governments often focused on only a few targets while completely neglecting others. Furthermore, NBSAPs from the NBF member countries were incomplete, unapproved by governments, or have not even been submitted to the most recent CBD COP. Together, these highlight a general need for more assessments to contribute to the GBF goals and targets. It is likely, however, that this concern stems from other underlying issues such as the lack of resources.
- **MEASURING SUCCESS:** A monitoring framework (GBF indicators) is needed to measure the success of the GBF implementation process. Using the monitoring framework as a guide throughout the entire policy process would be beneficial for measuring implementation efforts of the GBF. Current implementation status should be transparent in each country and results made public. Environmental policy should also guide the implementation process to ensure that positive progress is made.
- **LACK OF RESOURCES** may well be a universal problem, especially when working towards improving the environment. The Nordic countries are no exception. The lack of resources was discussed in some capacity in each of the workshops as a major obstacle to achieving GBF targets and other biodiversity actions.

- **LACK OF EFFECTIVE POLICIES:** Biodiversity plans are often disconnected from planning and policy decisions, as is the case in Iceland. For example, Iceland needs firmer paths to implement laws, regulations, and international agreements for biodiversity. Intentional and unintentional delays in developing and executing action plans are far too common in all NBF countries. This issue may stem from previously discussed points, such as the lack of understanding of key concepts, lack of resources, and lack of assessments.
- **FOCUS ON KEY ISSUES:** Some key issues and GBF targets arose repeatedly in the workshops. Freshwater conservation is a key component of biodiversity protection in all Nordic countries but was discussed particularly for Finland. Conservation actions should treat all biomes equally – land, sea, and inland waters. Another repeated issue was the call for restrictions on hunting endangered species (Red Listed Species).
- **INCREASED AWARENESS:** Despite the negative messages and misunderstandings, some positive news did arise during the workshops. Public and political awareness and interest are on the rise in the Nordic countries. This was evident among the political stakeholders who participated in the Icelandic workshop. There was a general willingness to learn and a shared interest from the Icelandic governmental administrative sector in removing barriers to a holistic approach to biodiversity protection. Additionally, in Denmark, there is a measurable trend in the increased frequency of mentions of the word "biodiversitet" (biodiversity) in Danish media.
- **RESPECTING AND PROTECTING NORDIC NATURE:** The Nordic countries must recognize their role as primary caretakers of some of Europe's most unique and sensitive ecosystems.

Emerging themes

One of the purposes of bringing people together from different countries and sectors in the three country workshops was to explore the usage of words and concepts among those working to protect biodiversity, and whether we are in agreement on what they mean. Several themes emerged throughout the workshops that are worth commenting upon.

BIODIVERSITY: The word "biodiversity" itself can often have unclear or conflicting definitions which lead to misunderstandings and confusion. This was showcased, in particular, in the workshop in Iceland among governmental representatives. At best, these misunderstandings led to inaction and at worst, actions that are actually harming biodiversity. The number of species is often miscommunicated or misunderstood as the most important component of biodiversity, when in reality, it is much more nuanced than that. This misunderstanding has led to the intentional

introduction and use of alien species in native ecosystems, which may be harmed if these species become invasive.

PROTECTION: The concept of “protected areas” is a common thread throughout the GBF targets. However, it is not always well defined, and different agencies can operate with different interpretations. This was evident especially during the Danish workshop, where it was explicit from the beginning that the Danish Biodiversity Council and the Danish government hold very different definitions. Although both lean upon documents and definitions from the European Union, the Biodiversity Council's definition is much stricter than the governmental definition. This discrepancy leads to very different assessments of how much area can be considered “protected” and a discussion centring on the *quality* of protected areas. What criteria should be used for selecting areas to be protected – e.g., size or habitat? This lack of clarity often overshadows the importance of selecting areas for protection which fulfil the criteria of having value for *biodiversity*. Unfortunately, areas that would naturally be flourishing native ecosystems are also often areas valuable for human habitation and other human activities, which could leave the least fertile and least biologically flourishing areas to be declared “nature protected areas”. Such a move could easily be made, for example, in Iceland, where it is possible to declare the uninhabitable highlands protected. This would certainly not be without value, but if it is done merely to achieve a quantitative goal without taking into account the biological significance of different ecosystems, it could be dangerous, as it would leave more biodiverse habitats unprotected. Furthermore, protection focused on the most accessible or dominant habitat risks neglecting other important habitats. This is exemplified by conservation efforts focused primarily on forests in Finland and agroecosystems in Denmark.

A discussion among experts at the Danish workshop centred around the value (or lack thereof) of semi-protected areas (those that fall between fully protected and not protected) and of urban biodiversity efforts. Should biodiversity protection focus only on “untouched nature” where human activities are strictly limited? Or is there also value in the areas where there is a necessary interaction between humans and nature? This discussion can be pushed even further in questions of intrinsic value. Presupposing the intrinsic value of nature and biodiversity, which does not need to be justified by other values, greatly affects decisions about its protection. The Danish Biodiversity Council has worked with metrics including the size and coherence of the area, the abundance of biodiversity, the health of the ecosystems, and other relevant factors, but no established international consensus has yet been reached on these fundamental questions.

ECOSYSTEM APPROACH: The Ecosystem Approach is the underlying principle in implementing all actions related to the CBD, and thus the GBF targets. Its practices and principles are necessary for overcoming differences and encouraging cooperation and participatory co-management. The workshop discussions

suggested that scientists and practitioners who are involved in hands-on implementation of conservation management, whether in civil society or private sector, seemed to have an intuitive understanding of this. However, it was also plain in the workshops that there is still a need for the CBD to make an effort to increase the knowledge and understanding of this guiding principle – even among experts in the field – and to integrate consistent guidelines for implementation in the description of the targets. More detailed information on the Ecosystem approach can be found on biodice.is/the-ecosystem-approach.

THEORY OF SCIENCE: Some discussions, especially in the concluding Danish workshop, revolved around deeper underlying theoretical differences in the conceptions of nature and science. For example, a view of nature as predictable with universal laws lends itself to a view of science with mathematical modelling of these laws. On the other hand, a view of nature as unpredictable, messy, and complex lends itself to a different view of the role of science: as the attempt to see and expect patterns and regularities while acknowledging more context-dependency. This parallels a broader discussion within the sciences, such as the division between “natural science” and “social science”. Given that biodiversity protection necessarily involves human factors, input from the social sciences is necessary. Further complications can arise with differences in perspective between what has been labelled scientific knowledge and what is categorized as indigenous or traditional/local knowledge. While these can support each other, it is necessary to engage in respectful dialogues, as they typically rely on different schemes of justification which can lead to miscommunication, and thus to failures of cooperation and management.

These underlying discussions are not necessarily issues of one position being wrong or right. Different positions and uses of words can be valid in their own right and have relevant, important perspectives and insights. The problem arises when we are using the words in different ways without realizing, and thus speak past each other. Biodiversity protection benefits from considering diverse perspectives and values, which can be highlighted by encouraging discussions across fields and among stakeholders. This is the “whole of society approach” emphasized in the Ecosystem Approach. Therefore, it can be useful to have more clarity on where the disagreements lie and how words are used. These are all relevant and important discussions which show the practical importance of “philosophical” or semantic disagreements. Such disagreements are not always explicit, which can result in unnecessary conflicts and miscommunication. To avoid further confusion, it would be very useful if international bodies like the CBD were to create more practical guides to what constitutes key concepts.

Together, the NBF workshops were a strong step in continuing important work to secure a thriving future for Nordic biodiversity. This project provided valuable insights into the status of biodiversity understanding and implementation, growth

points, and leading practices to model after. In many ways, the Nordic nations were not aware of the responsibility and extent of their commitments when they signed the GBF agreement. That is why these workshops, discussions, and comparisons were necessary. Successful completion of the GBF commitments requires such collaboration and willingness to learn from each other. This report represents a tool that is meant to be built upon and lays the groundwork for a pan-Nordic plan for implementing the GBF.



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