

Finland's submission for the intergovernmental consultation following up on the UNEA Resolution 5/5 (UNEP/EA.5/Res.5) on Nature-based Solutions

Finland aligns itself with the submission by the EU. Below we provide some national examples and case studies on how Nature-based solutions are promoted, measured and implemented in Finland. The examples cover national, regional and local scales, and may be implemented both in urban and rural contexts.

Nature-based solutions in Finland – examples of means and practices, by Finnish Environment Institute (Syke), edited by Riikka Paloniemi (riikka.paloniemi@syke.fi)

The Finnish National Adaptation Plan (NAP2030) as a promoter of nature-based solutions

Johan Munck af Rosenschöld, Johan.MunckafRosenschold@syke.fi

In line with EU's strategy on adaptation to climate change adopted in 2021, in Finland's new national adaptation plan (NAP) 2023-2030, the role of nature-based solutions (NBSs) is clearly emphasized. As of now, nature-based solutions have become increasingly prominent in Finnish adaptation planning, but they are not yet widely adopted. Finland is well placed to increase the use of nature-based solutions in areas such as land-use planning, stormwater management, urban development, and water management in agriculture and forestry. With this in mind, one of the objectives included in the Finnish NAP is that "Nature-based solutions are well established and have increased society's preparedness to climate risks, improved water protection while increasing biodiversity by 2030".

To reach this objective, NBSs in both urban and rural areas will be promoted. The NAP sets out to increase national-level steering and incentives as well as ensure that guidance and manuals on stormwater management and green infrastructure practices are up to date. The different design options, feasibility, and maintenance of NBSs will be explored. In addition, NBSs are sought to be mainstreamed in water management in agriculture and forestry with the help of research, communication, and providing monetary aid.

Multi-Criteria Decision Analysis supporting the implementation of nature-based solutions

Mika Marttunen, mika.marttunen@syke.fi

Making the multiple benefits of nature-based solutions visible has been considered important to accelerate their implementation. Obstacles to the implementation of nature-based solutions are often the complexity of assessing benefits and long-term impacts, the sectoral distribution of management and planning in the organisations responsible for planning, and the challenge of finding funding as the benefits are distributed differently and wider than using traditional measures. One way to improve the situation is to comprehensively and systematically assess the multiple benefits of nature-based solutions, which will help to identify, structure and illustrate their impacts.

Syke has applied Multi-Criteria Decision Analysis (MCDA) in several water management and urban planning cases and the experiences have been positive.

BENEFITS OF MCDA

- Provides a structured framework for the planning
- Supports synthesis of information and helps to identify data gaps and uncertainties
- Supports participants' learning and comprehensive understanding of the planning situation
- Supports systematic and transparent evaluation of alternatives
- Possibility to compare monetary and non-monetary impacts and identify trade-offs
- Facilitates discussion in a multi-stakeholder group
- Supports finding balanced and sustainable solutions

Forest and compensation

Liisa Varumo, liisa.varumo@syke.fi, & Suvi Huttunen, suvi.huttunen@syke.fi

NBS comprise a wide variety of actions, some of which fall under rather traditional biodiversity restoration and protection. In the context of forest ecosystems, these actions can be realized as part of biodiversity offset policies. These policies aim to balance development and conservation by striving for no net loss of biodiversity. To support the creation of well-functioning offsetting, the renewed Nature Protection Act (and related Degree) includes rules for conducting offsetting in Finland. The rules are designed using best available scientific knowledge and learned lessons from cases in other countries.

Preservation and restoration of forests provides several ecosystem services such as carbon sequestration, recreation, air and water quality management and erosion protection. Providing offsets has also been seen as a potential business opportunity for private forest owners through for example different habitat banking schemes by which they can offer their forests as offsets. However, Finland also has excellent knowledge and capacities to promote the offsetting of biodiversity degradation caused by forestry and this opportunity should be further explored since standing forests is a primer NBS.

In Finland biodiversity offsetting currently primarily means, that biodiversity degradation carried out in development projects have been offset in forest ecosystems, given that the degradation has also occurred in an equivalent ecosystem. This was the case of the [biodiversity offsetting pilot in Lahti](#) and also parts of the possibly to be opened Sakatti mine by [Anglo American was offset by the purchase of a large](#) forest are in Inari, part of the intact forest landscape (IFL) network.

Nature-based solutions in urban areas

Kati Vierikko, kati.vierikko@syke.fi

The concept of urban NBS can be understood broadly as all green areas (e.g. large forest patches, parks) and single green structures (e.g. a street tree, a green roof, a stormwater pond) that provide benefits/solutions for certain/multiple societal challenges and simultaneously support biodiversity (e.g. IUCN definition for NBS). For example, in SMARTer Greener Cities (2020-2023) project we divided all green areas to three types of NBS: remnant, hybrid and novel, and estimated their proportion in two residential areas in Helsinki (Nyberg et al. 2020, p. 54-57).

However, often planning and implementation of NBS in urban environments are very much focused on climate resilience and measures to improve water management (flooding, stormwater, restoration) in cities. Quite many cities in Finland are already familiar with the concept of NBS and have implemented nature-based stormwater management systems (Fig.1). Quite often city authorities considered that nature-based stormwater systems also support biodiversity (Kopperoinen et al. 2021). Some cities have adopted green factor tool to support implementation of NBS in new construction sites. For example, the city of Vantaa

supports NBS in public areas and on privately-owned plots by using a plot-specific green factor tool in all detailed plans.

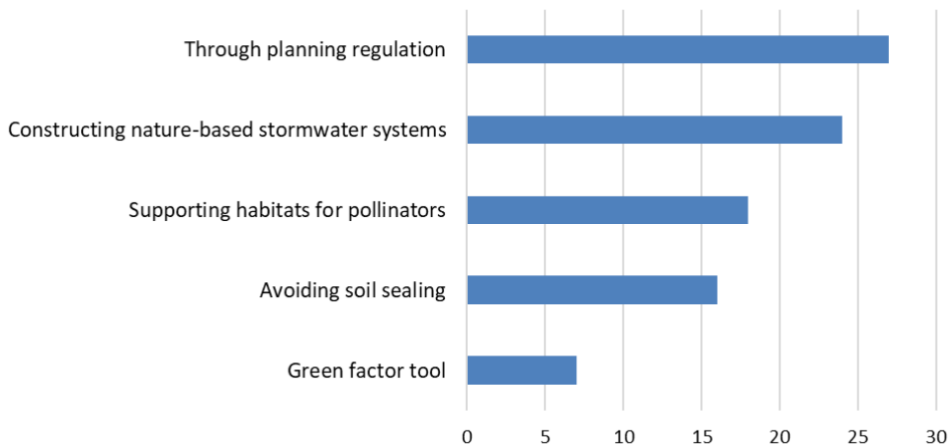


Figure 1. Measures to support biodiversity in cities and number of cities that have implemented these measures (N= 40). Source: Kopperoinen et al. 2021

Restoration

Saija Koljonen, saija.koljonen@syke.fi

A key to successful restoration is targeting large enough landscape units (Koljonen et al. 2023). Actions that weaken the ecological state of habitats have wide-reaching effects. For example, drainage and ditch maintenance are detrimental for both forest and inland water habitats. Damage cannot be reduced simply by using sedimentation ponds or constructed wetlands. Rather, comprehensive, catchment level planning is needed. This is specifically underlined with brooks, streams, rivers and lakes where linkage between the ecosystems is inevitable.

References:

Koljonen et al. 2023. [Preventing biodiversity loss with ecological restoration by Suomen ympäristökeskus - Finnish Environment Institute - Finlands miljöcentral - Issuu. Policy Brief.](#)

[Kopperoinen, L., Vierikko, K., Kasvio, P., Hietaranta, E. 2021: Tavoite 11: Kaupunkien viherryttäminen. Julkaisussa: Kärkkäinen, L. & Koljonen, S. \(toim.\). Arvio EU:n biodiversiteettistrategian vaikutuksista Suomessa. Luonnonvara- ja biotalouden tutkimus 75/2021. Luonnonvarakeskus, Helsinki. s. 233-251](#)

Nyberg, E., Tiitu, M., Nieminen, H. and Vierikko, K. 2020: Socio-ecological structure in Kuninkaantammi and Kalasatama study sites. Power report. Finnish Environment Institute. [https://smartergreenercities.com/wp-content/uploads/2022/06/Smarter Greener Cities WP3 power report2021 Nordforsk updated 170620 22.pdf](https://smartergreenercities.com/wp-content/uploads/2022/06/Smarter_Greener_Cities_WP3_power_report2021_Nordforsk_updated_170620_22.pdf)

Nature-based solutions, insights from Metsähallitus, Parks & Wildlife Finland

- Metsähallitus, Parks & Wildlife Finland has been following the discussions on Nature-Based Solutions (NBS) especially in the context of different multilateral environmental agreements, in particular the Convention on Biological Diversity and the Ramsar Convention. The term is not widely used in our organization nor in our guiding documents so far, though the work of Parks & Wildlife Finland largely promotes (directly or indirectly) NBS in Finland on state-owned land and water areas. Overall, we are happy to share further insights and experiences e.g. on
 - Management of protected areas
 - Habitat management and restoration
 - Stakeholder collaboration on the aforementioned, including with indigenous peoples
- Parks & Wildlife Finland has gained extensive experience on ecological restoration and management practices in protected areas. Especially wetland restoration will be in focus to deliver the goals of the EU Biodiversity Strategy for 2030 as well as targets of the EU's future Nature Restoration Law.
 - Restoration of the natural water flow, which has been cut off by drainage ditches. In e.g. Hydrology LIFE project, actions to reconnect mires with their watersheds, returning waters to protected peatlands (*vesienpalautus*) ([see background in Finnish](#)). Further information in English: https://tapio.fi/wp-content/uploads/2021/05/IPC_2021_Tiina_Ronkainen.pdf.
 - Some best practices of Parks & Wildlife Finland have been compiled into handbooks e.g.:
 - Ecological restoration and management in boreal forests - best practices from Finland (2012), <https://julkaisut.metsa.fi/en/publications/show/1111>
 - Ecological restoration in drained peatlands - best practices from Finland (2014) <https://julkaisut.metsa.fi/en/publications/show/1733>
 - Peatland restoration is one key NBS often mentioned, we have extensive knowledge on the practices of different methods of restoration, as well as e.g. on the monitoring of peatland restoration: <https://www.metsa.fi/en/nature-and-heritage/habitats/finnish-board-on-ecological-restoration-fber/fber-mire/>
- Nature's health benefits: Healthy Parks, Healthy People programme: <https://julkaisut.metsa.fi/julkaisut/show/2112>
- In 2021, Metsähallitus, Parks & Wildlife Finland organized a side-event at the IUCN World Conservation Congress, "Biodiversity, human well-being and nature-based solutions: Best practices"
 - The recording is available online: <https://www.youtube.com/watch?v=v1OHQzTO3ak>,
- The IUCN National Committee of Finland promoted nature-based solutions when awarding the Finnish Biodiversity Award on this theme in 2020. Parks & Wildlife Finland participated in the selection process of the winner.

NBS use and practices in Finland – needs and development

- The concept, its criteria and the scale of NBS need further development. There is still relatively little knowledge on NBS and the term on the local & practitioner level. Training capacity need attention e.g. land-use planners on local, regional and national scale.
- Global standards/criteria for NBS is important. IUCN definition emphasises the importance of functioning ecosystems as the tool for achieving societal benefits of NBS. Herewith it would be important to maintain this approach in order to safeguard biodiversity.
- The NBS impacts, outcomes and its benefits need evaluation, validation and assessment for measuring outcomes on national level. Biodiversity, ecological sustainability and climate benefits, should be emphasized, especially in light of trade-offs between different benefits.

Other examples:

- Report Synergies between climate and biodiversity objectives in laws, policies and management practices: <https://www.norden.org/en/publication/synergies-between-climate-and-biodiversity-objectives-laws-policies-and-management>
- Nordic Council of Ministers, report “Working with Nature-Based Solutions, Synthesis and mapping of status in the Nordics”. (Finnish Natural Resources Institute has taken part in the work) : <https://pub.norden.org/temanord2022-562/>
- Snowchange cooperative has a landscape rewilding programme: <http://www.lumi.fi/landscape-rewilding-ennallistamisohjelma/>

Further information

Sanna-Kaisa Juvonen

Sanna-Kaisa.Juvonen@metsa.fi

Senior Specialist, International Affairs
Metsähallitus, Parks & Wildlife Finland

Tiia Tanskanen

Tiia.tanskanen@metsa.fi

Senior Specialist, International Affairs
Metsähallitus, Parks & Wildlife Finland