Project description

1. Who makes the proposal

Programmet for småsamfund i Norden (SSN)

2. Project name

Invasive species in Nordic islands. Prevention & Early Detection and Rapid Response
Invasive arter i nordiske øsamfund. Forebyggelse & tidlig opdagelse og hurtig udryddelse

3. Project period

2026

4. Project purpose

This project has several purposes:

To be a foundation to establish/improve **effective management of invasive alien species** (IAS) in each of the participating islands: Åland, Bornholm, Faroe Islands, Greenland, and Iceland with emphasis on *Prevention* and *Early Detection and Rapid Response* (EDRR), including the following:

- To describe the work that has been done so far and what needs to be prioritised, regarding legislation, action plans and biosecurity work in general, etc.
- Make/update pathway analyses and other relevant analyses to acquire new or updated knowledge about the potential IAS species and their most probable pathways to participating islands,
- Make recommendations about effective management of IAS in the participating islands, and
- To share knowledge and experiences between relevant authorities and other relevant actors specifically the soon to be established Nordic IAS Network"

The project will contribute to the participating countries'/regions' knowledge base on how, in practice, it is possible to reduce the number of invasive species entering the islands, and more specifically to give the nature administrations an insight into relevant tools and methods available.

5. Background

The spread of invasive alien species is a major threat to nature, nature's contribution to people, and to a good quality of life. Globally, IAS and their impacts are increasing rapidly and are predicted to continue rising in the future. The spread of IAS is a leading cause of biodiversity loss globally and in Europe. But fortunately, IPBES also concludes that AIS and their negative impact can be prevented and mitigated through effective management, and that ambitious progress to manage biological

invasion can be achieved with integrated governance[1]. The cost that invasive species incur on Nordic economies (mostly excluding the small islands) is estimated to be 8.35 billion USD,[2] and islands are highlighted as special priority areas to prevent invasive species under Kunming-Montreal target 6.

The detrimental effect of IAS has been on the agenda in many countries for the last few decades.

One of the first efforts in northern Europe to fight IAS was made within the European Network on Invasive Alien Species (NOBANIS) established and funded by the Nordic Council of Ministers as a response to the recommendations coming from the CBD (Convention of Biological Diversity) 6th meeting of the Conference of Parties in 2002. NOBANIS started as a Nordic cooperation, involving Denmark, Finland, Iceland, Norway (including Svalbard and Jan Mayen), Sweden, the Faroe Islands, Greenland, and Åland. In 2015, NCM and NOBANIS issued the report *IAS Pathway Analyses and Horizon Scanning for countries in Northern Europe*[3] as a response to the fulfilment of the Aichi target 9 under the CBD and the European Union (EU) Biodiversity Strategy 2020 target 5. The report summarizes the knowledge on the most significant pathways of introduction for IAS in the region[4]. Iceland and Faroe Islands are represented in the report as 'Islands of the North Atlantic Ocean'. Svalbard was part of the 'Nordic region'. Unfortunately, the NOBANIS network has ended. The *Global Register of Introduced and Invasive Species* (GRIIS) has to some degree replaced NOBANIS[5].

The Arctic Council has also dealt with the challenge of reducing the threat posed by invasive species. In 2017, the working group for Conservation of Arctic Flora and Fauna (CAFF) and the working group for Protection of the Arctic Marine Environment (PAME) published *Strategy and action plan on invasive species*[6]. The report concludes that only a few invasive species are in the Arctic, but that the number is expected to increase due to climate change. The strategy recommends that the countries need to establish a mode of prevention. According to the strategy, biological invasion is a context-specific phenomenon that changes through time and across landscapes; therefore, measures to address invasive alien species need to be timely and fit for purpose.

Another very relevant document is the *Guideline for invasive species planning and management on islands*[7] published by IUCN (International Union for Conservation of Nature), containing checklists

[1] IPBES (2023). Summary for Policymakers of the Thematic Assessment Report on Invasive Alien Species and their Control of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Roy, H. E., Pauchard, A., Stoett, P., Renard Truong, T., Bacher, S., Galil, B. S., Hulme, P. E., Ikeda, T., Sankaran, K. V., McGeoch, M. A., Meyerson, L. A., Nuñez, M. A., Ordonez, A., Rahlao, S. J., Schwindt, E., Seebens, H., Sheppard, A. W., and Vandvik, V. (eds.). IPBES secretariat, Bonn, Germany.
https://doi.org/10.5281/zenodo.7430692

[2] Kourantidou, M., Verbrugge, L. N. H., Haubrock, P. J., Cuthbert, R. N., Angulo, E., Ahonen, I., Cleary, M., Falk-Andersson, J., Granhag, L., Gíslason, S., Kaiser, B., Kosenius, A. K., Lange, H., Lehtiniemi, M., Magnussen, K., Navrud, S., Nummi, P., Oficialdegui, F. J., Ramula, S., … Courchamp, F. (2022). The economic costs, management and regulation of biological invasions in the Nordic countries. *Journal of Environmental Management*, *324*, 116374. https://doi.org/10.1016/j.jenvman.2022.116374

[3] Invasive Alien Species TemaNord 2015:517

[4] (PDF) Invasive Alien Species in Scandinavia [accessed Sep 2024].

[5] Global Invasive Species Database

[6] CAFF and PAME. 2017. Arctic Invasive Alien Species: Strategy and Action Plan, Conservation of Arctic Flora and Fauna and Protection of the Arctic Marine Environment Akureyri, Iceland. ISBN: 978-9935-431-65-3

[7] 2018-030-En.pdf

setting out the essential components of a comprehensive and effective invasive management programme covering 'Foundations', 'Information and prioritisation' and 'Management action'.

In December 2022 the *Kunming-Montreal Global Biodiversity Framework*, under CBD, entered into force. One of its 23 global targets is about invasive species. Under the headline *Reducing threats to biodiversity*, Target 6 specifically mentions islands as *priority sites*:

Section H. Global targets for 2030 / Reducing threats to biodiversity

TARGET 6 Eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services by identifying and managing pathways of the introduction of alien species, preventing the introduction and establishment of priority invasive alien species, reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 per cent by 2030, and eradicating or controlling invasive alien species, especially in priority sites, such as islands.

In 2024, at a workshop in Naturvårdsverket in Stockholm an attempt was made to establish a Nordic network on IAS, yet without any tangible results.

Invasive species in Nordic islands. Prevention and Early detection and rapid response – effective management

Four general approaches are used to minimize the impact of invasive alien species - each associated with a different stage in the invasion process:

1. Prevention (keeping invasive alien species from entering a new ecosystem)
2. Early Detection and Rapid Response (EDRR) (detecting and responding to an alien species before it becomes established and poses harm)
3. Eradication (removing the entire population of an alien or invasive alien species); and
4. Control (containing or otherwise managing the population of an invasive alien species to minimize spread and impacts)

This project has a heavy focus on the first two stages in the invasion process: 1) Prevention and 2) Early Detection and Rapid Response. Stage 3 and 4 will also be addressed, but in a more general way to give an overview over relevant actions in Nordic or comparable islands. Since, according to IPBES[1], eradication has been successful, especially for small and slow-spreading populations of invasive alien species in isolated ecosystems, examples of eradication efforts in Nordic islands are included in the project.

According to IPBES[1], prevention and preparedness are the most cost-effective options and thus crucial for managing the threats from invasive alien species. Prevention can be achieved through pathway management, including strictly enforced import controls, pre-border, border and post-border biosecurity, and measures to address escape from confinement. Prevention has been particularly effective in islands. Preparedness includes border surveillance, early detection, and rapid response planning, and is critical to reduce rates of establishment. Horizon scanning and risk analysis can support prevention and preparedness by prioritizing emerging invasive alien species. Sustained and adequate funding, capacity-building, technical and scientific cooperation, transfer of

technology, monitoring, relevant and appropriate biosecurity legislation and enforcement, and quarantine and inspection facilities are necessary for establishing effective prevention measures.

As mentioned, an important part of preventing the invasion of alien species is to *identify and manage pathways*, i.e. establish knowledge on how new species find their way to the islands. Knowledge of pathways is a prerequisite for effectively preventing invasion and the establishment of invasive species. It is high time to put actions in place to achieve Target 6. While this work is a high priority globally, small communities often do not have the necessary resources to implement "action plans" on specific invasive species.

Risk analyses based on science and traditional/Indigenous and local Knowledge, as well as horizon scanning, can be used to inform regulations that either permit or prohibit the entry of certain alien species at jurisdictional borders.[6]

6. The content of the project

The content of the project is described below. The project's focus is terrestrial species.

1. Describe **legislation** on IAS, e.g.:
    a. Comparison on regulation on import of IAS, on paragraph as well as on species level, including comparisons of the lists which typically are in the exhibits to the order for IAS.
    b. Describe related regulations, e.g. veterinary and agricultural, and the interfaces between relevant responsible authorities. How does the regulation consider risks posed by tourism and from the import of pets?

2. Describe **actions plans** for IAS, including national/regional goals, e.g.:
    a. What actions have been implemented and/or which goals reached?
    b. Describe other possible action plans or similar documents for AIS in other Nordic islands.
    c. What is the status in reaching "Target 6" of the Kunming-Montreal Agreement? What has been done, what is planned, and what more could be done also in relation to the *Invasive Alien Species' Toolkit for Target 6 of the Kunming-Montreal Global Biodiversity Framework*[8]

3. Describe current **biosecurity** work, e.g.:
    a. Institutional arrangement and the content of the tasks. What has been done up until 2026? Cooperation between institutions, countries, and regions,
    b. The roles of different authorities/institutions, e.g. customs, municipalities, and national authorities,

[8] CBD Toolkit for Target 6

c. Practices regarding the import and handling of alien species and of 'blind passengers',
d. Special efforts to protect sensitive nature/species/islands,
e. Registration of IAS (responsibility, methods, process, criteria used and how does these relate to identified pathways),
f. Overview and comparison of current registration of IAS (status, progress) on species level for each island/nation,
g. Describe the academic basis and the criteria used for determining if a specific species is invasive? What are the requirements for documentation?
h. When is it safe to assume that a species considered invasive in one country is also invasive in neighbouring countries? To what degree can such assumptions be transferred between countries or even islands? Examples?
i. Has eradication (removing the entire population of an alien or invasive alien species) actions found place in Nordic islands or other comparable islands and with what degree of success?[9]
j. Emphasize species that are under "Control" (i.e. containing or otherwise managing the population of an invasive alien species to minimize spread and impacts) in the participating islands.
k. Participation/cooperation in regional or international work.

4. Make an **analysis and identify and assess pathways** that pose the greatest risk of biological invasions in the participating countries. Use tools such as **risk analysis, horizon scanning[10], and site-based prioritization** (as recommended in ARCTIC Action 2.1[11]).

5. Describe the probable **pathways** for invasive species to the participating countries/islands:
    a. Make a vector analysis, including risks related to tourism.
    b. Make suggestions for illustrations, see 13.

6. With basis in recent IPBES or similar publications on IAS, formulate **recommendations about effective 'Prevention and Early Detection and Rapid Response' management** specifically for the participating islands, e.g. horizon scanning, import control and border biosecurity, pathway management, risk analysis, surveillance and diagnostics.
   Focus should be on tangible and realistic recommendations that are possible for relatively small administrations to implement.

7. Assess the potential for **inter-island knowledge/experience sharing**, e.g.:
    a. Set up a catalogue over actions/measures that can be transferred and give examples of good practice.

[9] Home - DIISE Database of Island Invasive Species Eradications

[10] Horizon scanning: the systematic examination of future potential threats and opportunities that can contribute to the prioritization of invasive alien species of concern and the means to address their introduction and spread.

[11] Recommendation in CAFF Arctic Invasive Aline Species, Strategy and Action Plan 2017.

b. What are the benefits for small administrations to participate in a possible existing network for IAS. Should such a network be established?

8. Based on relevant national communications strategies on IAS and their successfulness, recommend actions on **information and communication and public understanding**, e.g.:
    a. Good examples. Evaluations. What has been successful?

9. Assess the minimum requirements for **effective prevention management**, regarding funding, capacity-building, technical and scientific cooperation, transfer of technology, monitoring, biosecurity legislation and enforcement, and quarantine and inspection facilities.

10. Make suggestion for a toolbox for the administrations to use.

11. Produce an **implementation plan for the project.** One general and one for each participating country.

12. Formulate a **policy brief** for each participating country/area. Translate to local languages. Include country/area specific illustrations of IAS pathways to the islands.

13. To effectively **communicate** the results to relevant partners a substantial amount of the funding for the project is bookmarked for communication efforts. See box 12 about communication.

For all tasks (no. 1-13) and where relevant, make internal comparisons between the participating countries and external comparisons with other Nordic countries/islands, e.g. Anholt, Læsø, Gotland, Svalbard, Jan Mayen or elsewhere.

Deliverance/outcome:

1) Report
2) Implementation plan
3) Policy brief
4) Communication plan and its implementation, (see box 12)

7. Method

The applicants can suggest the best methods or make combination of several, e.g.

- Literature review
- Desk top analysis
- Interviews with relevant institutions/individuals

This spring (2026) NMR's Biodiversity programme did make a call for a project about IAS with several purposes, among others the establishment of a Nordic network and a Nordic platform to create opportunities for better cooperation in the field of IAS. [See here: Nordic Collaboration on Invasive Alien Species: Networks, Resources, and Early Warning Systems]. The call will also cover Nordic islands, but since these island communities face different challenges in relation to IAS and therefore require a special emphasis, this specific call is directed towards unique challenges faced by Nordic islands, specifically: Bornholm (DK), Åland, Faroe Islands, Greenland and Iceland, and the nature conservation authorities in these countries/regions.

Some publications about invasive species, not exhaustive:

Country/ Area	Title
Bornholm / DK	Handlingsplan mod invasive arter, Miljøstyrelsen 2017 Ny handlingsplan er i høring frem til den 25. februar 2026. Den kan ses her: IAS - Handlingsplan 2026.pdf og Høringsdetaljer - Høringsportalen
Faroe Island	Janus Hansen L, Jenna Wong L, Pagad S (2020). Global Register of Introduced and Invasive Species - Faroe Islands. Version 1.6. Invasive Species Specialist Group ISSG. Checklist dataset https://doi.org/10.15468/zdkyjf accessed via GBIF.org on 2025-12-17. Jensen, J., Thorning-Lund, F., & Hammer, S. (2023). Supplement to Faroe Islands botanical list with 64 species or subspecies including rare, new and potentially invasive species with comments. *Nordic Journal of Botany*, *7*. https://doi.org/10.1111/njb.03586 Hammer, S., & Jensen, J. (2021). Discoveries and fate of six ant (Hymenoptera, Formicidae) species on the Faroe Islands. *BioInvasions Records*, *10*(1), 28–32. https://doi.org/10.3391/bir.2021.10.1.04 Hammer, S., & Jensen, J.-K. (2019). The invasion of two species of social wasps (Hymenoptera, Vespidae) to the Faroe Islands. *BioInvasions Records*, *8*(3), 558–567. https://doi.org/10.3391/bir.2019.8.3.11 Thomsen, E., Kongsstovu, S., Dahl, H., & Mikalsen, S.-O. (2019). Ctenolepisma longicaudata (Escherich, 1905): a common, but previously unregistered, species of silverfish in the Faroe Islands. *BioInvasions Records*, *8*(3), 540–550. https://doi.org/10.3391/bir.2019.8.3.09
Greenland	Jacobsen I B D, Nymand J, Pagad S (2020). Global Register of Introduced and Invasive Species - Greenland. Version 1.3. Invasive Species Specialist Group ISSG. Checklist dataset https://doi.org/10.15468/vz64c9 accessed via GBIF.org on 2025-12-17. DENTIFICATION AND RISK ASSESMENT OF POTENTIAL INVASIVE SPECIES IN GREENLAND WATERS dce2.au.dk/pub/SR391.pdf Gårdman, V., Lund, H., & Vilhelmsen, L. (2025). Establishment and rapid spread of social wasps (Hymenoptera: Vespinae) in Greenland. *Insect Conservation and Diversity*. https://doi.org/10.1111/ICAD.70023;REQUESTEDJOURNAL:JOURNAL:17524598;JOURNAL:JOURNAL:17524598;WGROUP:STRING:PUBLICATION
Iceland	Invasive Species Specialist Group ISSG (2022). Global Register of Introduced and Invasive Species - Iceland. Version 1.1. Checklist dataset https://doi.org/10.15468/b7u941 accessed via GBIF.org on 2025-12-17.

	Invasive plant species | Náttúrufræðistofnun Íslands (ni.is) Wasowicz P, Óskarsdóttir G, Þórhallsdóttir ÞE (2025) Lodgepole pine (*Pinus contorta* Douglas ex Loudon) invasion in subarctic Iceland: evidence from a long-term study. NeoBiota 97: 47-66. https://doi.org/10.3897/neobiota.97.134047 Wasowicz, P., Sennikov, A. N., Westergaard, K. B., Spellman, K., Carlson, M., Gillespie, L. J., Saarela, J. M., Seefeldt, S. S., Bennett, B., Bay, C., Ickert-Bond, S., & Väre, H. (2020). Non-native vascular flora of the Arctic: Taxonomic richness, distribution and pathways. *Ambio*, *49*(3), 693–703. https://doi.org/10.1007/s13280-019-01296-6 Wasowicz, P., Przedpelska-Wasowicz, E. M., & Kristinsson, H. (2013). Alien vascular plants in Iceland: Diversity, spatial patterns, temporal trends, and the impact of climate change. *Flora - Morphology, Distribution, Functional Ecology of Plants*, *208*(10–12), 648–673. https://doi.org/10.1016/J.FLORA.2013.09.009
Aland	Handlingsplan för bekämpning av främmande arter på Åland, 14.12.2021

8. Project goal (which change the project shall contribute to)

1) Reducing negative impact of IAS on islands in the Nordic region
2) Increase knowledge and cooperation about how relevant administrations in the participating countries/regions can start and/or proceed with implementation of new actions/mitigations to prevent further invasion of alien species.
3) Present ways to strengthen the national legislation
4) Contribute knowledge to the *Nordic IAS Network* (to be established by Nordic Nature Programme (NCM)).

9. Target group

The outcome of this project will mostly be relevant for authorities directly involved in the administration of invasive species, i.e. nature protection agencies, municipalities, customs authorities and similar

ePrimary target groups:

Policymakers shaping IAS-related legislation and regulations of the five focus communities

National and local authorities and municipalities in the focus communities, such as:

environmental authorities responsible for IAS management

customs authorities

local IAS experts

Secondary target group:

the public audience

10. Which Nordic countries will benefit from the project and how?

Åland, Greenland, Iceland, Faroe Island and Bornholm (Denmark) will have direct benefits, but all Nordic countries will benefit, since there are many islands in the Nordic area, other than the participating islands.

11. What is the project budget?

800.000 DKK

12. How should the project results be communicated and to whom? Should funds be earmarked for communication purposes?

The project shall include a robust communication plan describing the format of information and communication channels used for reaching the defined target groups (see part 9) aimed at the target groups, including:

a) Online webinar
b) Local networking: workshops in each participating country, in the native/official language of the country, preferably.
c) Inter-island networking: an on-line workshop where representatives from the participating countries - with basis in the report - each give a presentation explaining the national work on IAS, also to seek whether there is potential for further communication or potential cooperation.
d) Illustrations of IAS pathways, one for each island

Other communication initiatives that support making the project's results beneficial to relevant authorities and amongst the public

As an example of a communication product, illustrations or graphics showing the IAS pathways to each island is preferable.

Provision shall be made for funding for communication measures within the project's budget framework.