

## 21<sup>st</sup> EDGG Field Workshop: Diversity of grasslands and open habitats in the Archipelago Sea (Finland), 28 June – 6 July 2025

### Second Call

#### Introduction

The 21<sup>st</sup> EDGG Field Workshop will be the first ever held in Northern Europe. We will use the standardized, high-quality vegetation-plot sampling of EDGG (Dengler et al. 2016) to record vegetation composition, structural and environmental parameters across various open habitats in the Finnish Archipelago. Sampling will include standard 10-m<sup>2</sup> plots as well as nested-plot series (ranging from 1 cm<sup>2</sup> to 100 or 1000 m<sup>2</sup>, “EDGG Biodiversity Plots”) for vascular plants, bryophytes and lichens, with the possibility of incorporating additional taxonomic groups (e.g., insects or other invertebrates).

In addition to collecting grassland data from a region that is new for EDGG, our main goal is to contribute to the establishment of a long-term monitoring system for open habitats in the Finnish Archipelago, in collaboration with local organizers. This effort will create a valuable reference for tracking environmental changes and understanding habitat evolution over time. The collected data will be contributed to the GrassPlot database (Dengler et al. 2018) and serve as the basis for one or several scientific publications, as has been done in previous EDGG Field Workshops (for example, the recent ones: Bergauer et al. 2022; Cancellieri et al. 2024; Guarino et al. 2024; Khodosovtsev et al. 2024; Vynokurov et al. 2024).

This Field Workshop is organized prior to the European Grassland Conference (EGC), which will take place immediately afterwards in Oulu, Finland, from 7–10 July 2025. This timing allows participants to combine the fieldwork with scientific discussions and networking at the conference.

#### Study area

The Field Workshop will take place at the Archipelago Sea in southwestern Finland. The Archipelago Sea is one of the world's largest archipelagos by island count, forming a unique mosaic of water and islands. It is a biosphere reserve, and area for tens of Natura2000 sites (Skärgårdshavets Biosfärområde – Saaristomeren biosfäärialue). The southern part of the archipelago is a National park. Its marine areas are divided into three distinct zones based on environmental conditions:

- **Inner Archipelago:** Typically consists of large, forested islands separated by narrow straits, although wide bays and some bare islets also occur.
- **Intermediate Archipelago:** Features islands that are relatively close together, facilitating species dispersal due to short distances and sheltered conditions.
- **Outer Archipelago:** Dominated by the sea, with smaller islands surrounded by larger expanses of water. These habitats are exposed to wind, waves, saltwater spray, ice erosion, and strong sunlight, resulting in predominantly open and semi-open conditions with few forests.



Figure 1. Heathland on Örö Island. Photo: M. Mussaari.

The mineral soil areas of the islands in the Archipelago Sea have gradually risen from the sea over the past 1,000 years. All large islands with sufficiently nutrient-rich soil have been inhabited and used for agriculture from the Middle Ages until the 20<sup>th</sup> century. On these islands, land was converted into meadows as soon as it emerged due to land uplift. Beyond medieval settlements, a period of tenant farming and a population boom 100–200 years ago further expanded human activity, creating traditional landscapes on smaller islands in the outer archipelago. Additionally, the fishing culture has influenced vegetation patterns, particularly around fishing huts. Today, the grassland network of the Archipelago Sea is one of the most ecologically significant in Finland (Raatikainen et al. 2017). Traditionally used for grazing or mowing, grasslands are nowadays at different stages of succession, depending on when grazing ceased or was reintroduced.

The most prominent open habitats in the Archipelago Sea include the following types:

**Heaths:** Occur in archipelago and coastal areas, where traditional cattle farming – with regular burning and grazing – has played a crucial role in their formation and maintenance (Fig. 1). Heaths are classified into three types: dwarf shrub heaths, small grass heaths, and grass heaths. Typical species include *Empetrum nigrum*, *Calluna vulgaris*, *Vaccinium myrtillus*, and *Vaccinium vitis-idaea*. These communities develop

on various nutrient-poor soils, including rocky, gravelly, sandy, and moraine substrates, as well as thin mineral soils.

**Calcareous thermophilous meadows:** Found on calcium-rich soils, often on rocky slopes or valley edges, these meadows are highly species-diverse (Fig. 2). Characteristic species include *Briza media*, *Origanum vulgare*, *Filipendula vulgaris*, *Silene nutans*, and indicator mosses such as *Homalothecium lutescens*. This habitat type is rare and considered critically endangered due to a dramatic decline in area over recent decades.

**Acidic herb-rich dry meadows:** Occurring on non-calcareous, nutrient-poor soils, these small patches are dominated by low herbaceous plants rather than grasses. Typically found on sunny slopes or near large stones in pasture areas, representative species include *Campanula rotundifolia*, *Pilosella officinarum*, *Dianthus deltoides*, and *Galium verum*. These meadows are rare and highly sensitive to encroachment and eutrophication.

**Mesic meadows:** These species-rich habitats develop on mineral soils with intermediate moisture levels (Fig. 3). Historically maintained by grazing or mowing, mesic meadows support a diverse range of herbaceous species and contribute significantly to biodiversity. They typically form on unmodified soils and may represent former forest clearings or drained swamps.



Figure 2. Dry grasslands on Berghamn Island. Photo: M. Mussaari.



**Wooded meadows.** Wooded meadows are areas with regularly mown natural herbaceous vegetation and scattered trees and shrubs (Fig. 4). In the Finnish Archipelago, they were historically formed and maintained due to their importance for fodder production in the region's harsh conditions. Fodder was collected not only from the meadows but also from the trees, making these habitat complexes particularly valuable for traditional agriculture. These meadows typically developed in the most productive areas, often on calcareous soils, and are highly diverse in the Finnish context. Characteristic species include *Primula veris*, *Melampyrum cristatum*, *Geranium sanguineum*, *Filipendula vulgaris*, and *Dactylorhiza sambucina*.

In addition to the grassland types described above, there are other, less frequent habitat types scattered across the islands, often occupying small areas. These include rocky outcrops, wet grasslands and fens, as well as brackish salt marshes. If suitable sites are available, these habitats may also be included in our sampling. The diverse environmental conditions and long history of both natural processes (such as land uplift and marine exposure) and human land use in the Finnish Archipelago have created a rich mosaic of open habitats. This landscape provides an excellent setting for long-term ecological monitoring and research into the factors shaping these unique vegetation communities.

#### Our sampling sites

- *Örö* and *Hiittinen*. Esker islands in the outer archipelago. Örö is a former military island, while Hiittinen is still an inhabited village island. These islands feature heathlands, dry grasslands, shore meadows, and rocky areas, primarily on acidic soils.
- *Seili*. An island with a deep history, having served as a leprosy and mental hospital before becoming a research site for forestry. Today, it is a conservation area with a research station. The island has meadows, former fields, dry grasslands, and shore meadows, primarily on acidic soils.
- *Berghamn Village: Boskär* and *Berghamn*. A group of rocky islands in the outer archipelago with a history of land management spanning over 40 years (Figs. 5, 6). This area contains diverse grasslands and one of Finland's rare well-managed wooded meadows. Historically, the villagers of Berghamn collected fodder from surrounding islands. The soils here are calcareous.



Figure 3. Mesic meadow on Seili Island. Photo: M. Mussaari.



### Short itinerary of the Field Workshop

The approximate sampling locations are shown on Fig. 4.

#### Day 1. 28 June

Meeting in Turku at 9:00. Travelling to Kemiö, sampling on Kemiö, and onward transfer to Kasnäs. Taxi-boat to Öro Island. Accommodation at Öro.

#### Day 2. 29 June

Sampling on Öro Island, with guides from ELY-center and Metsähallitus. Accommodation at Öro.

#### Day 3. 30 June

Morning sampling on Öro Island. Possible sampling at Hiittinen with a smaller group. Travel back to Turku via ferry and bus. Accommodation in Turku.

#### Day 4. 1 July

Travel to Nauvo and ferry to Seili Island. Sampling on Seili Island with guides from ELY-center. Accommodation at the Archipelago Research Institute.

#### Day 5. 2 July

Sampling on Seili. Accommodation at the Archipelago Research Institute.

#### Day 6. 3 July

Transportation via taxi-boat to Berghamn. Sampling at Berghamn and Boskär. Accommodation at Berghamn (Fig. 5).

#### Day 7. 4 July

Sampling at Berghamn and Boskär. Accommodation at Berghamn.

#### Day 8. 5 July

Boat transportation to Houtskar and Korppoo, sampling there. Return to Turku in the evening. Accommodation in Turku.

#### Day 9. 6 July

Sampling of meadow vegetation near Turku (optional).

### Technical information

#### Accommodation and travelling

We will stay at five different locations during the Field Workshop. To keep the costs down and make the event more accessible, we have chosen basic accommodation options, including huts. As a result, several nights will require the use of sleeping bags, and we kindly ask participants to bring their own. The accommodation includes:



Figure 4. Wooded meadow on Boskär Island. Photo: M. Mussaari.



2 nights at Örö (some participants will stay at the Örö Upseeritoimisto Hostel, while others will share 6-person accommodation in the renovated huts).

- 1 night in Turku (Hesehotelli Turku bus station).
- 2 nights at Seili (Archipelago Research Institute).
- 2 nights at Berghamn in huts.
- 1 night in Turku (Meri-Karina).

For transportation on the mainland, we will use a rented 9-seat minibus and private cars. Longer-distance transportation between islands will be provided by taxi-boats, while shorter-distance transport will be by public transport.

### Travel information

The Field Workshop will begin in Turku, Finland, where participants will meet at 09:00 on 28 June. The exact meeting location will be provided to registered participants closer to the start of the event. The workshop will conclude on 6 July in Turku, at Hotel Meri-Karina (the final night's accommodation) at 09:00. On this day, we plan to sample meadows near Turku, traveling by public transport. Participation in this final day is optional, and all interested participants are welcome to join.

### Fees

The fees cover all costs for meals, travel, and accommodation, starting at 09:00 on 28 June and ending at 09:00 on 6 July. The fees for full participation are as follows:

- 770 EUR for students (including PhD students) who are IAVS members
- 870 EUR for postdocs, senior scientists, or other regularly employed persons who are IAVS members
- 870 EUR for students (including PhD students) who are not IAVS members
- 950 EUR for postdocs, senior scientists, or other regularly employed persons who are not IAVS members

Payment must be made directly into the bank account before the start of the Field Workshop. By request, it is possible to pay in cash on the first day of participation (for people who do not have access to money transfer). Bank account details will be provided to registered participants upon confirmation of participation. The fees include a small buffer, so if costs are lower than expected, some refund may be possible. In the event of cancellation, we will refund the fees to the extent that the cancellation results in a cost reduction.



**Figure 5. Grasslands and our accommodation (the hut) at Berghamn, with the surrounding landscape. Photo: M. Mussaari.**



### How to apply

To apply for participation, please submit a motivation letter (about 200 words) to the Field Workshop coordinators, Denys Vynokurov ([denys.vynokurov@gmail.com](mailto:denys.vynokurov@gmail.com)) and Jürgen Dengler ([dr.juergen.dengler@gmail.com](mailto:dr.juergen.dengler@gmail.com)), with the subject line “EDGG Field Workshop”. In the letter, explain why you are interested in participating and how you plan to contribute to the success of the workshop, both during and after the event. We expect all participants to contribute equally to sampling, plant determination, sample processing, data postprocessing, and related tasks. In general, only EDGG members can participate in EDGG Field Workshops. However, non-members who apply will be considered for free membership in the EDGG.

The application deadline is **21 March 2025 (Friday, 24:00)**. Confirmation of participation and the results of travel grant applications will be provided no later than 15 April 2025. If the number of applications exceeds available places, participants will be selected on the basis of their motivation and the competences they offer.

In the case of oversubscription, we may offer an option of participation in the first Field Workshop (Maritime and Ligurian Alps, Italy, 28 May – 5 June 2025), if places are still available. Please indicate in your registration whether you would be interested to participate in the second workshop instead, in this case.

Preference will be given to those who are able to identify bryophytes and lichens or analyze the collected soils.

For those who have already participated in at least three EDGG Field Workshops, the motivation letter is not required. Along with your motivation letter, please include the following information in your application email:

- Name
- Age
- Professional status (e.g., PhD student, postdoc, professor, unemployed)
- Affiliation
- Address
- Mobile phone number (for contact purposes, e.g., if you get lost in the field)
- Dietary requirements (no/vegetarian/other: please specify)
- Request to join EDGG (if you are not already a member)
- Travel grant application (Yes/No)
- Willingness to participate in the second Field Workshop (Maritime and Ligurian Alps, Italy, 28 May – 5 June 2025) in case of oversubscription.

Experts in other taxonomic groups, such as grasshoppers, leafhoppers, spiders, butterflies, fungi, or soil metagenomics, are also welcome to apply if they are willing and able to carry out sampling that allows for joint analysis with vegetation diversity data. Such applicants are asked to discuss the potential sampling design with the Field Workshop coordinators, Denys Vynokurov and Jürgen Dengler, prior to applying.



Figure 6. Map with approximate locations of the 21<sup>st</sup> EDGG Field Workshop in Finland (28 June – 6 July 2025).

### Travel grants

A limited number of travel grants (approximately 1750 EUR in total) will be available, provided by our parent organization, IAVS, exclusively for IAVS members in 2025. Priority for travel grants will be given to the following groups:

- Students and applicants from low-income countries
- Active participants of previous Field Workshops
- Individuals who have agreed to organize future Field Workshops or contribute additional expertise, such as soil analysis, or the sampling and identification of taxonomic groups other than vascular plants.

The final decision on grant allocation will depend on the combination of these factors. The amount awarded to each grantee is not fixed; it will be based on the available funds, the demonstrated need of the applicant, and their relevance to the success of the Field Workshop. Due to the limited funds, travel grants will most likely cover only part of the registration fee. In exceptional cases, they may also cover travel expenses to attend the event.

IAVS grantees are required to actively contribute to the success of the Field Workshop, both during and after the event. Post-Field Workshop tasks typically include data entry, sample analysis, and the identification of plant specimens. Failure to fulfill these responsibilities may result in ineligibility for future travel grants for EDGG events.

### References

- Bergauer, M., Dembicz, I., Boch, S., Willner, W., Babbi, M., Blank-Pachlatko, J., Catalano, C., Cykowska-Marzencka, B., Gehler, J. (...) & Dengler, J. 2022. Scale-dependent patterns and drivers of vascular plant, bryophyte and lichen diversity in dry grasslands of the Swiss inneralpine valleys. *Alpine Botany* 132: 195–209.
- Cancellieri, L., Sperandii, M.G., Rosati, L., Bellisario, B., Franceschini, C., Aleffi, M., Bartolucci, F., Becker, T., Belonovskaya, E. (...) & Filibeck, G. 2024. Drivers of vascular plant, bryophyte and lichen richness in grasslands along a precipitation gradient (central Apennines, Italy). *Journal of Vegetation Science* 35: e13305.
- Dengler, J., Boch, S., Filibeck, G., Chiarucci, A., Dembicz, I., Guarino, R., Henneberg, B., Janišová, M., Marcenò, C., (...) & Biurrun, I. 2016. Assessing plant diversity and composition in grasslands across spatial scales: the standardised EDGG sampling methodology. *Bulletin of the Eurasian Dry Grassland Group* 32: 13–30.
- Dengler, J., Wagner, V., Dembicz, I., García-Mijangos, I., Naqinezhad, A., Boch, S., Chiarucci, A., Conradi, T., Filibeck, G., (...) & Biurrun, I. 2018. GrassPlot – a database of multi-scale plant diversity in Palaeartic grasslands. *Phytocoenologia* 48: 331–347.
- Guarino, R., Vynokurov, D., Dengler, J., Berastegi, A., Biurrun, I., García-Mijangos, I., Janišová, M., Lonati, M., Nikolei, R. (...) & Nota, G. 2024. (Re)discovery of four annual vascular plant species in dry grasslands in the Southwestern Alps (NW Italy). *Palaeartic Grasslands* 62: 28–33.
- Khodosovtsev, A., Darmostuk, V., Dembicz, I., Dengler, J., Moysiyanenko, I. & Kuzemko, A. 2024. *Circinaria ucrainica* sp. nov., a new species from sand dunes of the Lower Dnipro valley (Ukraine). *The Lichenologist*. 56: 159–167.
- Raatikainen, K.J., Mussaari, M., Raatikainen, K.M. & Halme, P. 2017. Systematic targeting of management actions as a tool to enhance conservation of traditional rural biotopes. *Biological Conservation* 207: 90–99.
- Vynokurov, D., Aleksanyan, A., Becker, T., Biurrun, I., Borovyk, D., Fayvush, G., García-Mijangos, I., Magnes, M., Palpurina, S. (...) & Dengler, J. 2024. Dry grasslands and thorn-cushion communities of Armenia: a first syntaxonomic classification. *Vegetation Classification and Survey* 5: 39–73.

#### Local organizers:

**Aapo Ahola**, [aapo.ahola@syke.fi](mailto:aapo.ahola@syke.fi)

**Kukka Kyrö**, [greta.kyro@metso.fi](mailto:greta.kyro@metso.fi)

**Maija Mussaari**, [majja.mussaari@ely-keskus.fi](mailto:majja.mussaari@ely-keskus.fi)

**Liina Salonen**, [liina.salonen@ely-keskus.fi](mailto:liina.salonen@ely-keskus.fi)

#### EDGG organizers:

**Jürgen Dengler**, [dr.juergen.dengler@gmail.com](mailto:dr.juergen.dengler@gmail.com)

**Stephen Venn**, [stephen.venn@biol.uni.lodz.pl](mailto:stephen.venn@biol.uni.lodz.pl)

**Denys Vynokurov**, [denys.vynokurov@gmail.com](mailto:denys.vynokurov@gmail.com)



Figure 7. Grassland management at Berghamn. Photo: M. Mussaari.