



# European Vegetation Archive Data Request Form



To obtain data from the European Vegetation Archive (EVA), including the ReSurveyEurope Database, please first enquire the EVA database administrator Ilona Knollová (ikuzel@sci.muni.cz) whether the data that meet your needs are available. If they are, please fill in the form below and submit it to Ilona or another member of the EVA Coordinating Board (or ReSurveyEurope Board if you ask for data from the ReSurveyEurope Database).

- Applicant's name:

Mirjana Ćuk

- Applicant's institutional address:

University of Novi Sad, Faculty of Science, Trg Dositeja Obradovica 2, 21000 Novi Sad, Serbia

- Applicant's e-mail:

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- Project title:

Diversity and classification of European inland sand-dune vegetation

- Are you asking for core EVA data (non-repeated vegetation surveys) or for ReSurveyEurope data (repeated vegetation surveys)?

I am asking for non-repeated vegetation surveys.

- Brief description of the aims and methods of the study:

In Europe, the habitats of inland sand dunes face a grave risk of endangerment, ranging from endangered to critically endangered status. These habitats are significantly impacted by human activities. Nonetheless, they hold immense importance for the preservation of biodiversity due to their association with species that have limited distribution and specific preferences. The objective of this project is to examine and consolidate the existing knowledge regarding the vegetation of dry grasslands on inland sandy soils across Europe. This project analyses and synthesizes the present knowledge of dry grassland vegetation on inland sandy soils of the whole Europe and provides a comprehensive overview of their diversity with a clearly defined classification system and formal definitions of high-rank syntaxa. Remarkably, no previous studies have undertaken such comprehensive analyses for inland sandy vegetation throughout Europe.

The main methodology in this project will be classification and statistical analysis of a European vegetation-plot database. The creation of the database and analyses will involve the following steps:

- The database will be formed from data obtained from the European Vegetation Archive and from additional published and unpublished data obtained specifically for this project.
- A network of international collaborators will be formed, including all scientists interested in inland sand dune vegetation and willing to participate in the analysis of this vegetation, as well as in the creation of joint publications.



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- The database will be classified using hierarchical divisive methods.
- Formal definitions of vegetation types will be created based on the criteria of presence, absence and abundance of sociological, functional and discriminating species groups following Chytrý et al. (2020);
- Additional data will be collected and used to describe differences between classified clusters, i.e. high-rank syntaxa of inland sand dune vegetation. Bioclimatic variables will be used for the interpretation of climatic gradients in the study area. They will be compiled for each plot in the database according to the coordinates from the global climate databases; indicator values for light, soil moisture, temperature, soil reaction will be used for ecological interpretation of vegetation pattern; percentage of life forms (Raunkiaer 1934) will be calculated for each plot; chorological spectrum will be determined based on the information in Pignatti et al. (2005) and Meusel and Jäger (1992). Biogeographical indicators i.e. continentality will be used in order to explain peripheral–central phytogeographic turnover in flora and vegetation on inland sand dunes (Berg et al. 2017). Other variables can also be used to describe vegetation patterns.
- Relationships between ecological/environmental data and species composition will be explored using direct and indirect ordination methods.
- All habitat types of inland sand dunes will be assessed in terms of the threats to their biodiversity using the IUCN Red List methodology, including the patterns of alien species distribution.

- Will someone else be involved in data editing or analysis in addition to the applicant?

Milan Chytrý, Andraž Čarni and members of their groups in Brno and Ljubljana.

- Estimated time of delivery of results (e.g., manuscript submission):

1-2 years.

- Geographic area needed (e.g., countries or range of geographic coordinates):

Whole of Europe excluding Russia and Macaronesian archipelagos.

- Do you need plots to be georeferenced? If so, what is the minimum accuracy of plot location (in metres or kilometres) needed for your project?

Georeferenced data are most desirable. Any accuracy is fine. However, data without coordinates will be (in limited extent) included in the analysis too.

- Vegetation types needed (syntaxa):

Classes: *Koelerio-Corynephoretea canescentis* and *Sedo-Scleranthetea*. Alliances: *Corynephorion canescentis*, *Koelerion glaucae*, *Armerion elongatae*, *Bassio laniflorae-Bromion tectorum*, *Festucion beckeri* (incl. *Trifolio arvensis-Sedion*) *Sedo albi-Veronicion dillenii*, *Festucion vaginatae*, *Thero-Airion*, *Veronico-Poion glaucae*, *Hyperico perforati-Scleranthion perennis*, *Scleranthion annui* (*Arabidopsis thalianae*), *Alyso alyssoidis-Sedion albi*, *Sedo-Cerastion arvensis*, *Tortello tortuosae-Sedion albi*, *Armerion juncea*, *Sileno conicae-Cerastion semidecandri*. Relevant EUNIS types: N15 – Atlantic and Baltic coastal dune grassland, R1P – Oceanic to subcontinental inland sand grassland on dry acid and neutral soils, R1Q – Inland



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*sanddrift and dune with siliceous grassland, R1R – Mediterranean to Atlantic open, dry, acid and neutral grassland, R11 – Pannonian and Pontic sandy steppe, R12 – Cryptogam- and annual-dominated vegetation on siliceous rock outcrops, R13 – Cryptogam- and annual-dominated vegetation on calcareous and ultramafic rock outcrops.*

*Related vegetation types: Festuco-Brometea (Festucion valesiaca, Koelerio-Phleion phleoidis), Arrhenatheretalia, Agrostion vinealis, Artemision ponticae, Ammophiletea (Elymion gigantei), Helichryso-Crucianelletea (Koelerion arenariae, Scabiosion ucranicae, Sileno thymifoliae-Jurineion kileanae) - crucial for defining the alliances of the target vegetation in the expert system*

- Other data selection criteria:

Only relevés from plots of 1-100 m<sup>2</sup> (but relevés without plot size information should be included).

- Envisaged publications:

Two papers in international journals.

- Data deposition. Some journals require data used for the analysis to be stored in a public repository to ensure the repeatability of the analysis. According to EVA Rules, you are not allowed to store the original vegetation-plot data obtained from EVA. However, if you plan to publish in such a journal, you may deposit a reduced EVA-derived dataset that (1) would make it possible to repeat the analysis published in the paper and (2) does not contain any information not used in the analysis. For example, such a dataset can contain only a subset of species (e.g., only angiosperms or only neophytes), or replace species names with codes, or replace species cover values with presences/absences, or remove all the header data, or replace the exact plot coordinates by coarse grid-cell coordinates etc. If you plan to deposit reduced information from vegetation plots, please describe here what might be deposited. If the project developed so that you needed to deposit more information than specified here, you would need to ask specific permission from the Custodians of the EVA databases used in your analysis before the dataset is deposited.

- Plant trait data from the TRY consortium. If you plan to combine your analysis of vegetation-plot data with plant trait data, you can also request a dataset of 18 gap-filled traits for a large number of plant taxa prepared by the TRY consortium. These traits include Leaf area, Specific leaf area, Leaf fresh mass, Leaf dry matter content, Leaf C, Leaf N, Leaf P, Leaf N per area, Leaf N:P ratio, Leaf delta15N, Seed mass, Seed length, Seed number per reproductive unit, Dispersal unit length, Plant height, Stem specific density, Stem conduit density, and Conduit element length. This dataset can be provided to you by the EVA manager together with the vegetation-plot data. If you use this dataset, you must inform about your project the TRY data contributors who might be potentially interested and invite them as potential co-authors, assuming they will make an intellectual contribution to your paper. The list of the TRY data contributors will be sent to you together with the gap-filled trait dataset.

No

- Specification of the co-authorship arrangements in publications based on the requested data. Note that the EVA Rules recommend that co-authorship is offered to a representative of each database providing data that are particularly important for the project (e.g., a relatively large proportion of the final dataset used in the analyses or data from unique vegetation types or under-represented geographic areas). This database representative should be an expert in the topic of the project (not



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necessarily the custodian or deputy custodian), and this person should contribute to the project more than just by providing the existing data, e.g. by intellectual contribution to the concept of the paper, preparation of new data, or helping with data analysis, interpretation of the results or writing parts of the paper (see the IAVS Code of Professional Ethics: <http://iavs.org/Governance/Code-of-Professional-Ethics.aspx>). The project leader should enable active participation by regularly informing potential co-authors about the progress of the project from its early stage. The project leader should also make final co-authorship arrangements based on the real input of the individual contributors.

Mirjana Ćuk will be the lead author of the planned publications. Co-authorship in papers will be offered to a representative of each database that will be represented by at least 5% of relevés of sand-dune vegetation included in the final analysis (i.e. after stratified selection from the basic data sets) or fewer for databases from vegetation types or regions with general lack of data. For co-authorship, we expect active participation by checking and interpreting the results, providing conceptual ideas or contributing to paper writing.

- Eligibility of the applicant to receive EVA or ReSurveyEurope data. Specify to which EVA or ReSurveyEurope database the applicant has contributed; if the applicant is not the custodian or deputy custodian of an EVA or ReSurveyEurope database, give a name of a custodian or deputy custodian who supports this data request.

EU-RS-003 Database of Forest Vegetation in Republic of Serbia & EU-RS-004 Vegetation Database of Northern Part of Serbia (AP Vojvodina) (4953 plots, semirestricted access)  
Custodian: Mirjana Krstivojević Ćuk

- I agree with the terms of EVA Data Property and Governance Rules as approved on 26 May 2012 (<http://euroveg.org/download/eva-rules.pdf>).
- If I ask for ReSurveyEurope data, I agree with the terms of ReSurveyEurope Data Property and Governance Rules as approved on 6 April 2022 (<http://euroveg.org/download/resurveyeurope-rules.pdf>).
- In any result obtained based on EVA core data (non-repeated vegetation surveys), I will cite the EVA report article (Chytrý et al. 2016; <https://doi.org/10.1111/avsc.12191>). In any result obtained based on the ReSurveyEurope data (repeated vegetation surveys), I will cite the ReSurveyEurope report article as soon as it is published. In addition, I will cite individual source databases used in my project (if possible, in the list of References; if not possible, at least as a list of databases in the electronic supplementary material).
- If I ask for the plant trait data from TRY, I agree to invite to my project the TRY data contributors following the list received from the EVA database manager.

Novi Sad, Serbia

June, 26<sup>th</sup>, 2023.

Mirjana Ćuk