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:

  Marta Gaia Sperandii

- Applicant's institutional address:

  Department of Botany and Zoology, Masaryk University, Brno, Czech Republic

- Applicant's e-mail:

  mgsperandii@sci.muni.cz

- Project title:

  VegTrends: Assessing long-term trends in the vegetation of European habitats and evaluating the effectiveness of protected areas

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

  ReSurveyEurope data

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

  VegTrends (funded as ERA Postdoctoral Fellowship under the 2021 Horizon Europe scheme *HORIZON.4.1 - Widening participation and spreading excellence -* https://doi.org/10.3030/101090344) aims at producing **the first comprehensive and representative report of temporal trends in the vegetation of European open habitats**. The project has two specific objectives addressed through two work packages: (i) *assessing temporal trends in the vegetation of open (i.e. non-forested) European habitats* and (ii) *evaluating the effectiveness of protected areas (Natura2000 + Emerald Network) in conserving the vegetation of open European habitats*.

  Concerning the first aim, historical surveys will be first classified into habitat types using robust classification methods. Long-term vegetation changes will be then quantified within individual habitats, at the community and at the species level, using dissimilarity metrics (or other appropriate metrics summarising temporal patterns) accounting for multiple diversity facets. Partitioning frameworks will be implemented to disentangle the role of underlying mechanisms (e.g. turnover and nestedness and related methods), and null models will be used to test for the stochasticity of observed trends. Additional aims will include assessing whether changes in different diversity facets converge or diverge in their magnitude and direction, as well as identifying habitats, species and geographical areas that experienced the strongest changes (using regression techniques or related methods).

  As to the second aim, the protection status of each plot will be assessed as a first step. Biological variables summarising changes in the habitat conservation status, and representative of multiple

diversity facets will be then computed. The effectiveness of protection status on the conservation status of selected focal species will also be evaluated by computing metrics summarising their trends in time. Data will be pre-processed using matching techniques (or related methods) to reduce the effect of confounding variables, and the effectiveness of protected areas (on both habitats and individual species) will be most likely assessed using appropriate regression techniques (or related methods). Finally, potential drivers of differences in the effectiveness of protection will be identified by including in the models variables expressing patterns and temporal trends in the surrounding landscape.

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

Members of the Vegetation Science Group at Masaryk University; Members of the Spatial Science in Ecology and Environment Group at Czech University of Life Science

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

Two manuscripts should result out of this project: the first one will be presumably submitted around December 2023, and the second one around December 2024.

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

Europe (excluding Russia, Anatolia and the Caucasus)

- 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?

Yes! The more accurate, the better – but I might also consider, at the stage of data analysis, weighting observations according to their relocation accuracy.

- Vegetation types needed (syntaxa):

All non-forested vegetation types

- Other data selection criteria:

The minimum time span between first and last survey should be at least 5 years. In case of experimental plots, I would only need control plots.

- Envisaged publications:

Two scientific publications in well-established international, peer-reviewed journals focused on ecology, macroecology or conservation.

- 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.

> Being funded under the Horizon Europe framework, VegTrends has to adhere to open science principles such as openness, transparency and reproducibility. It is thus likely that the manuscripts will be submitted to such journals. In that case, we will first try to deposit the synthetic metrics computed at the analysis stage (instead of the original vegetation-plot data). Should the journal be insisting on requesting the storage of the original vegetation-plot data, we will only deposit the necessary data to reproduce the analysis and make them as anonymous as possible. This might include e.g. replacing species names with codes, exact plot coordinates with coarse grid-cell coordinates, removing header data or implementing similar measures.

- **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.

> Yes

- **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 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.

> Co-authorship will be offered to *one* representative (the custodian, or a person delegated by the custodian) for each ReSurveyEurope dataset included in the analysis, provided that: (i) the custodian (or delegated person) expresses interest in this project by filling in the EVA online form for this and (ii) for each dataset, the plots *actually* used in the final analysis (i.e. selected after a first screening and, if needed, the implementation of a resampling procedure) represent more than 2% of the final number of plots used (or 1% in case of biogeographically important regions not represented in other databases). Co-authors will be asked for intellectual input in the interpretation of results and to provide comments on the manuscript. ReSurveyEurope data custodians not included as co-authors will be mentioned in the Acknowledgments section.

- **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-IT-020 (ReSurveyEurope, custodian: Alicia T.R. Acosta)

- 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.

Brno, November 14th 2022

Marta Gaia Sperandii