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:

  Matteo Marcantonio

- Applicant's institutional address:

  European Commission Joint Research Centre (EU JRC), Ispra, Italy

- Applicant's e-mail:

  Matteo.MARCANTONIO@ext.ec.europa.eu

- Project title:

  Biodiversity and management Impact assessment across European grasslands (BioDiverseGrasslands)

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

  EVA

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

  This research project is aimed at exploring the effects of management practices on grassland biodiversity across Europe. It is supported by the **European Commission's Joint Research Center**, specifically within the **D.5 Food Security Unit** of the Directorate on Sustainable Resources in Ispra, Italy, as part of the Agriculture & Environment & Climate initiative. The project's primary objective is to understand how various management strategies impact the biodiversity of European grasslands, with the ultimate goal of developing more sustainable grassland management practices at a continental scale.

  Grasslands are ecologically vital habitats in Europe, yet their biodiversity and ecological networks have been significantly altered, diminished, or disrupted due to various management practices. These changes threaten their essential roles in ecosystem functioning. Recent advancements have provided valuable tools to address these challenges. The Joint Research Center (JRC) has developed comprehensive databases cataloguing critical variables of grassland management across the European Union (EU). These databases offer detailed insights into the spatial distribution of managed grasslands, marking a significant step forward in our understanding of these ecosystems. They were created as part of extensive, multi-year projects, including CAPRI, an agri-ecological model for evaluating community agricultural policies, and the LAMASUS project, which produced new spatially explicit grass management maps for the EU.

  Furthermore, Eurostat's release of geospatial data on grassland management enhances

our ability to analyse these habitats. By integrating this information with vegetation survey data from the European Vegetation Archive (EVA), our study seeks to investigate how management practices influence both the taxonomic and functional diversity of plant species in European grasslands. The EVA dataset, combined with the newly available geospatial data, allows us to examine the complex interactions between management practices (such as grazing, mowing, and fertilization) and grassland plant communities.

Our approach involves synthesising data from the EVA with the latest databases on management practices. We will employ modern modelling techniques capable of processing large, spatially explicit datasets, including the Integrated Nested Laplace Approximation (INLA) modelling framework. This advanced Bayesian modelling framework is particularly suited for analysing complex spatial data efficiently. Through this analysis, we aim to contribute to the formulation of new directives for grassland management and conservation, aligned with the objectives of the new "EU nature restoration law" and green deal. This project represents an unprecedented opportunity to conduct a large-scale analysis of grassland management practices and their ecological impacts across Europe.

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

  Marijn Van Der Velde, Giovanni Strona, Alexis Jolis

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

  2024-2025

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

  Europe and adjacent areas (excluding the European part of Russia)

- 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?

  Plots need to be georeferenced (they should have degrees of latitude and longitude) and with a minimum projected coordinate accuracy of ~1 km.

- Vegetation types needed (syntaxa):

  Plant surveys from habitats categorised as one of the 55 EUNIS grasslands categories

- Other data selection criteria:

- Envisaged publications:

  Journals in Ecological Science (Journal of Ecology, Journal of applied ecology, etc)

- 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.

> We do not plan to deposit the source data

- **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.

> We offer co-authorship to a representative of each EVA database if this person is willing to provide intellectual contribution to this study and registers for this project in the EVA online form.

- **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.

> Milan Chytrý

- 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.

Ispra, Italy, 9 April 2024

Matteo Marcantonio