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:
  Chaolian Jiao
- Applicant's institutional address:
  No. 26 Hexing Road, Harbin, Heilongjiang Province, China
- Applicant's e-mail:
  dickhiahiaha@gmail.com
- Project title:
  Linking Fine Root Traits to Species Fitness across Environmental Gradients
- Are you asking for core EVA data (non-repeated vegetation surveys) or for ReSurveyEurope data (repeated vegetation surveys)?
  Core EVA data only (non-repeated surveys)
- Brief description of the aims and methods of the study:

  Research Aims:
  This doctoral research examines how belowground functional traits (fine root traits) influence species ecological success across environmental gradients. The central question is whether plant species follow strict trait optimization strategies or whether multiple viable trait combinations can coexist under similar environmental conditions.

  Specifically, I aim to:
  1. Test how root functional traits (tissue density, diameter, specific root length, N/P content) relate to species abundance and dominance patterns across ecosystems
  2. Quantify whether trait-fitness relationships vary along environmental gradients (climate, soil, disturbance)
  3. Examine whether phylogeny and mycorrhizal associations independently shape these patterns

  Methods:
  I am integrating three major global fine root trait databases (GRoot, FRED, TropiRoot; covering ~2,100 species and ~12,000 trait observations) with vegetation plot data. For European species, I will also utilize root trait data from the TRY database, which contains substantial temperate and European species coverage. The analysis will use Joint Species Distribution Models (JSDMs) to simultaneously account for environmental filtering, species co-occurrence patterns, and trait effects on species performance.

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

No

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

2026.12

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

Yes

- 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, georeferenced plots are required for my analysis.Minimum accuracy needed: 1 km resolution would be ideal for matching with gridded climate data (e.g., WorldClim, CHELSA) and soil databases (e.g., SoilGrids). However, I can work with coarser resolutions (up to 10 km) if finer coordinates are not available due to landowner privacy or other confidentiality concerns. The primary requirement is sufficient precision to extract environmental covariates from global gridded datasets.

- Vegetation types needed (syntaxa):

I require broad coverage across major terrestrial vegetation types rather than specific syntaxonomic units. Specifically: - Forests (deciduous, coniferous, mixed) - Shrublands - Grasslands (including meadows, steppes, and alpine grasslands) - Other widespread European vegetation types I am primarily interested in natural and semi-natural vegetation, as human-modified areas may introduce confounding factors related to management practices rather than environmental filtering. Therefore, I would prefer to exclude vegetation from highly human-modified areas (e.g., urban habitats, agricultural fields).

- Other data selection criteria:

Please include only plots with: - Species abundance or cover data (exclude presence/absence only data) - Georeferenced locations (coordinates available) - Plot size: No minimum size requirement. I understand that non-forest vegetation types (grasslands, shrublands) are typically sampled in smaller plots (e.g., 1-25 m^2), which are perfectly acceptable for my analysis. Forest plots ≥ 0.1 ha are preferred where available, but standardized plots of any size are suitable as long as abundance/cover data are recorded.

- Envisaged publications:

I plan to prepare the following publications from this research:

1. Primary paper: "Testing root trait optimization versus multiple-strategy hypotheses across global vegetation gradients" - examining whether trait-fitness relationships support strict optimization or allow multiple viable strategies. Target journals: Journal of Ecology, Ecology Letters, or Global Ecology and Biogeography.

2. Potential follow-up papers examining:
   - Regional patterns in trait-fitness relationships
   - Role of mycorrhizal associations in mediating trait effects
   - Phylogenetic constraints on trait strategies

Timeline: Manuscript preparation within 12-18 months of data receipt.

All publications will:
- Properly cite the EVA database following required citation format
- Acknowledge all data contributors
- Offer co-authorship to EVA custodians if interested and if their contribution extends beyond data provision

I am also open to collaborative publications with EVA members if there is mutual interest in joint research questions.

- 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.

I understand that original EVA data cannot be deposited in public repositories.

If journal requirements necessitate data archiving, I will deposit only a reduced dataset containing:
- Species codes (not names) with trait values
- Coarse coordinates (10-50 km resolution)
- Only variables used in the analysis

I will seek Custodian permission before depositing any data beyond this minimal information.

- 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 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: https://www.iavs.org/page/governance_code-of-proffesional-ethics). 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.

I understand and will follow EVA Rules and IAVS Code of Professional Ethics regarding co-authorship arrangements.

My planned approach:

1. Identification of key data contributors:
Once I receive the data, I will identify databases that contribute substantially to the final dataset (e.g., >5% of plots used in analysis, or data from unique vegetation types or underrepresented regions).

2. Invitation for collaboration:
I will contact the custodians of these key databases to:
- Inform them about the project objectives and methods
- Invite a representative expert (not necessarily the custodian themselves) who has expertise relevant to the project topic
- Discuss potential for intellectual contribution beyond data provision (e.g., interpretation of regional patterns, ecological context, manuscript review)

3. Active engagement:
Throughout the project, I will:
- Regularly update potential co-authors on project progress (at key milestones: data analysis phase, preliminary results, draft manuscript)
- Seek input on interpretation of results, especially for region-specific or vegetation-type-specific patterns
- Provide opportunities for substantive contribution to the manuscript

4. Final authorship decisions:

Final co-authorship will be determined based on actual contributions following IAVS ethics guidelines. Contributors who provide intellectual input beyond data provision (analysis assistance, results interpretation, manuscript writing/revision) will be offered co-authorship. Those who provide data only will be acknowledged in the acknowledgments section.

5. Transparency:
All potential co-authors will be informed of authorship criteria at the project outset, and I will communicate openly about authorship decisions as the project develops.

I am genuinely interested in collaborative science and welcome input from EVA database experts who can enhance the quality and interpretation of this research.

- 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.

This application is supported by Zdeňka Lososová, Masaryk University, Brno, CZ (contributor of EU-CZ-001 Czech National Phytosociological Database and custodian of CZ33_MUCampus_culturalmeadowExp)

- 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.

Harbin, China

25 November 2025

Chaolian Jiao