



Data Request Form

To obtain data from the European Vegetation Archive (EVA), please first make an enquiry to the EVA database administrator Ilona Knollová (ikuzel@sci.muni.cz) whether the data meeting 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.

- Applicant's name:

Adam T. Clark¹, Petr Keil²

- Applicant's institutional address:

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- Applicant's e-mail:

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- Project title:

An equilibrium theory of biodiversity and ecosystem functioning: a 300-year perspective

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

We would like to use the EVA data in a planned [CEUS](#) grant project (a bilateral 3-year proposal for Austrian FWF and Czech GACR). The project is planned for 3 years, and involves Adam T. Clark (AC) and Petr Keil (PK) as PIs, and two planned postdocs, each working with one PI.

Important note: We pre-negotiated the access to the data with Milan Chytrý in fall 2020. Meanwhile, the grant proposal has been submitted and rejected (but with an encouraging positive feedback). Thus, we decided to resubmit the proposal in 2022. For this we would appreciate the access to at least the Austrian and Czech part of the EVA, so that we can conduct a **preliminary pilot data exploration** (one of the concerns of referees was that we should show that there is some spatio-temporal variation at all, i.e. that grasslands change). We will most likely need the entire dataset for the main analysis if the project is funded, i.e. in 2023.

The **main goal** of the project is to study historical dynamics of Central European grassland communities from the perspective of Equilibrium Theory of Island Biogeography (ETIB), extended to also consider the biodiversity-ecosystem functioning relationships (BEF), and to consider up to 300 years of historical land use data. The project will rely on our own field assessments of productivity and diversity (with a special focus on the Czech-Austrian border), extraction of historical land use data from Austro-Hungarian records (“Österreichisch-Ungarische Landesaufnahmen”), and utilization of third-party observational data such as EVA. Apart from field re-surveys of some sites, one way to obtain the critically important temporal community data from the static EVA plots will be a new spatio-temporal machine learning interpolation (currently being developed by PK).

The **work plan** is as follows: In the first stage of our project, we plan to quantify how ecological dynamics of grassland plant communities observed within plots (e.g. EVA plots) are influenced



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by changes in the size and age of the grasslands in which they are embedded. Based on the relationships identified in the first stage of the study, we next propose to quantify the relationship between grassland area and size vs. plot-level community temporal turnover rates. In the third stage of our project, we will apply our findings explain variability in net primary productivity among sites, and link it to species richness, turnover, grassland age, and area.

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

Yes, 2 postdocs – they will be hired if the project is awarded.

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

We plan to submit the grant proposal in spring 2022, and if awarded, the expected start of the project will be 2023. We expect to have the first publishable results around 2024-2025.

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

Our main focus is the area of the former **Austro-Hungarian Empire**, and we are after both historical and current **botanical releves from grasslands** in this area, particularly from current Austria, Czech Republic, Slovakia, Hungary, Slovenia, and parts of Ukraine and northern Italy.

- 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. Ideally any accuracy that allows to position a botanical plot into the correct larger grassland patch. If Lat-Lon are provided, but not precise, that's fine too.

- Vegetation types needed (syntaxa):

The project deals with grasslands, i.e. meadows, open habitats, pastures. The primary focus is Festuco-Brometea class, but other grasslands will be useful too.

- Other data selection criteria:

We are interested in plots from a widest temporal span possible, i.e. plots from the the "older" half of the EVA plots (those from prior to 2000), as well as more recent plots..

- Envisaged publications:

At least a half a dozen of papers for journals such as Journal of Ecology, Ecology Letters, Journal of Biogeography, and potentially high impact interdisciplinary journals.

- 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 for 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 from 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-



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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 – We don't plan to use traits.

- 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. 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 are ready to offer co-authorships according to conditions specified by the individual EVA custodians, and in line with the EVA Data Property and Governance Rules. We will keep any relevant database representative informed about the progress, with the option for them to also be involved in the research, as recommended above.

We are also ready to establish formal partnership between our institutions and the institutions of the EVA custodians. This includes arranging financial support for custodian/institutes assisting with the proposed project, for example by contributing towards a salary of a technician at the partner institution.

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

We haven't contributed to any part of the EVA database, and we aren't custodians nor deputy custodians.

The project will be conducted in collaboration with Helge Bruehlheide, Ute Jandt, Erik Welk, and Maria Sporbert from Halle, and they have fully endorsed it.

- 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>).
- In any result obtained based on this data, I will cite the EVA report paper (Chytrý et al. 2016; <https://doi.org/10.1111/avsc.12191>). 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.



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Graz, Prague, 1.4.2022

Adam T. Clark, Petr Keil