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:
  Jukka Forsman, Mikko Peltoniemi
- Applicant's institutional address:
  Natural Resources Institute Finland (Luke), Latokartanonkaari 9, 00790 Helsinki FI
- Applicant's e-mail:
  jukka.forsman@luke.fi; mikko.peltoniemi@luke.fi
- Project title:
  Modelling the future of EU forest biodiversity
- Are you asking for core EVA data (non-repeated vegetation surveys) or for ReSurveyEurope data (repeated vegetation surveys)?
  We ask for both core EVA data and ReSurveyEurope data
- Brief description of the aims and methods of the study:

Background & Aims - Securing ecosystem services and functioning under climate change requires safeguarding biodiversity. SafeNet EU Horizon studies the conservation and management of biodiversity in forests, with particular focus on old-growth forest. To do this, we need a better understanding of how species will respond to future climate and land use scenarios. Our aims (A): A1) Predict biodiversity of forest-dwelling species under current and future climate, land use, and forest management scenarios; A2) Using our predictions alongside other relevant data (e.g., tree cover maps), map scenarios for future forest area expansion and management in Europe, and map current and potential future migration routes and corridors among primary old-growth forests and high-conservation value forests. We anticipate at least three manuscripts from the project.

Methods – Our work occurs in the framework of SafeNet: a new Horizon EU project that aims to safeguard biodiversity and carbon-rich forest networks in Europe. Phase 1: Compilation of data: We will compile a database on the distributions, traits, and taxonomy of species in Europe. To do this, we will use existing pan-EU repositories on species occurrences (e.g., EVA, GBIF, PREDICTS) and traits (e.g., TRY for vascular plants), and the latest taxon-specific phylogenetic trees (e.g., from sPlot for vascular plants). We will prioritise trait data relating to species' abilities to adapt to changing environmental conditions, e.g., habitat specialization and dispersal ability. We will compile a second database of spatial-explicit environmental covariates (e.g., climate and forest growth and structure) under current and future climate and land

management scenarios. The SafeNet databases will not be published, and requests for data access will be directed to EVA and other repositories (if wanted). Phase 2: Modelling: To achieve A1, we will use the recent HPC implementation of HMSC joint species distribution model ('JSDM') and our Phase 1 data to predict and produce spatial-explicit high-resolution maps of biodiversity over European forests. These extrapolated biodiversity maps will be published as part of the Open Access policy requested by the European Commission. Analyses will be conducted at the levels of species, species richness, and functional and phylogenetic diversity. To achieve A2, JSDM outputs will be used in conjunction with ORCHIDEE and GLOBIOM-G4MX (both forest growth and land-use models) and a novel connectivity analysis (built network structure based on graph theory).

Impact – SafeNet will establish spatially-temporally explicit, high-resolution predictions of European forest-dwelling biodiversity as a function of different climate and management scenarios, and advise future forest management across Europe. We anticipate findings will inform future IPCC/IPBES reports, and guide the implementation of policy including the EU Biodiversity, Forest, and Bioeconomy strategies.

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

Co-applicants include Michael Pashkevich, Otso Ovaskainen, Nerea Abrego, Mira Kajanus.

Pashkevich has the same institutional affiliation as the lead applicants. Ovaskainen, Abrego and Kajanus have affiliation with University of Jyväskylä (Seminaarinkatu 15, 40014 Jyväskylä FI)

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

SafeNet is a 54-month project. We anticipate manuscripts using the requested data to be submitted by May 2032 at latest, with the first manuscript being submitted in early or mid 2027.

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

We request data from plots in Europe (including non-EU European countries like UK, Norway, Switzerland, Russia, and Belarus, but excluding European countries' overseas territories / regions / departments). We ask for trait data from TRY at the species-level for species detected in European plots. We have made a concurrent request for data to sPlot – as outlined in the *Supplement to the Governance and Data Property Rules of the sPlot Working Group: Agreement with the European Vegetation Archive (EVA) for using sPlot data in European studies.* As such, we have asked sPlot for associated phylogenetic relatedness data for species detected in European plots. We ask for raw data at the highest spatial-temporal resolution possible, and accompanying site-specific covariates (e.g., elevation, aspect, slope) as available.

- 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. If possible, we ask that coordinate uncertainty is provided with the data, as the minimum geolocation accuracy needed for our project will be decided at a later date.

- Vegetation types needed (syntaxa):

We ask for data on all vegetation types. We ask data from terrestrial habitats, including orests, non-forest, anthropogenic, etc., habitats, as we will use these data to inform our JSDM simulations that consider not only forests, but also how land use change effects may affect the distribution of species.

- Other data selection criteria:

We ask for all occurrence data (i.e., species observations at a location in time), including from EVA Core and ReSurveyEurope, and trait data that are available for European plots, as defined above. We do not have a date range (i.e., data from any year).

- Envisaged publications:

We anticipate at least three scientific paper resulting from SafeNet and that make use of these data. The first will focus on predicting the biodiversity of EU biodiversity under current and future climate, land use, and forest management scenarios. The second will focus on mapping scenarios for future forest area expansion and management in the EU. The third will focus on identifying current and potential future migration routes and corridors among primary old-growth forests and high-conservation value forests, considering benefits to biodiversity. If additional potential manuscripts are considered, we understand that we must re-request data use from EVA.

- 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 data from EVA.

- 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: 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.

  Custodians who contribute more than 2% of the species occurrence data in the SafeNet database will be considered as a co-author. However, we note that the database will likely feature hundreds of datasets and potentially hundreds of millions of species occurrences. The final output will not directly link to any data, but to spatial-explicit high-resolution maps of biodiversity over Europe. All contributing data providers will be acknowledged in SafeNet outputs in which their data are used, and informed about the project's progress (including receiving email notification of project outputs relating to their data).

- 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.

  We have not actively contributed to EVA databases, but we are very willing to collaborate with EVA.

  Our supporting custodian is Risto Virtanen, University of Oulu, Finland

- 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.

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Helsinki, FI 21 March 2025

Jukka Forsman and Mikko Peltoniemi