



EVA Annual report (2022)

Dear EVA friends,

This is the 6th annual report of the European Vegetation Archive (EVA) summarizing the status of our database consortium, projects, and publications.

The number of [EVA databases](#) has reached **105** in April 2022, including **1,915,226 vegetation plots**, of which 88% were georeferenced and 60% were assigned to phytosociological syntaxa. From these plots, 75% may be accessed under the semi-restricted regime and 13% under the restricted regime, while the other 12% are open access. In total, EVA data have been made available for **148 research projects** (see the full list [here](#)).

A new achievement of EVA in the last year has been the establishment of **ResurveyEurope**, a new initiative for collecting and analyzing fine-scale plant community resurvey data (relevés, plots) from Europe (more info [here](#)). Until now, we have collected almost 40 thousand plots that have been resurveyed at least once.

The EVA consortium published **14 papers** in the last year (since the last annual report). We highlight three new contributions for understanding the patterns and underlying mechanisms of alien plant invasions in Europe ([Fristoe et al. 2021](#), [Guarino et al. 2021](#), [Pouteau et al. 2021](#)) and the use of EVA data for assessing ecological and human factors in citizen science projects focusing on plants ([Marcenó et al. 2021a](#), [Marcenó et al. 2021b](#)). Forest communities were also analyzed to unveil large-scale diversity patterns ([Loidi et al. 2021](#)) and the response of *Primula elatior* to local and landscape variables ([Van Daele et al. 2021](#)). Other two papers focused on continental species niches ([Hájek et al. 2021](#)) and the prospects of ecological restoration ([Kreyling et al. 2021](#)) in European fens. The EVA data also has been used to estimate sampling effort of weed vegetation in comparison with alternative data sources ([Bürger et al. 2022](#)), the co-occurrence patterns of drought-sensitive species ([de Jonge et al. 2021](#)), the realism of species distribution models ([Hellegers et al. 2020](#)), and the competitive success of herbaceous plants under UV-B doses ([Zedek et al. 2022](#)).

Since the database started in 2012, EVA has contributed to **60 journal papers**, 10 technical reports, and 85 presentations at scientific conferences. For an updated list of all publications, please visit [the EVA webpage](#).

As always, we congratulate the EVA project leaders and all data contributors for these achievements, looking forward to seeing new projects and results in the next year.

Borja Jiménez-Alfaro, Ilona Knollová and the EVA Coordinating Board

April 2022



EVA PROJECTS FINISHED

- Accounting for competition between species in large-scale species distribution models – Melinda de Jonge.
- BioScore 3.0 – A species-by-species model to assess anthropogenic impacts on terrestrial biodiversity in Europe – Marjon Hendriks.
- Success of holocentric chromosomes: natural competition experiment on a global evolutionary scale – Petr Bureš.
- Invasion potential of the European endemic flora – Robin Pouteau.
- Temperate Deciduous Forests of Western Eurasia – Javier Loidi.
- Managing plant species translocations: using genomic tools to unravel interactions between adaptation to climate and adaptation to habitat fragmentation – Frederik Van Daele.
- Knowledge and learning through Social Networks: How many data for nature conservation and monitoring are we overlooking? – Riccardo Guarino.
- Understanding functional diversity pattern across European grasslands – Coline Boonman.
- Invasibility of Mediterranean habitats by alien vascular plants, a case study from Sicily – Riccardo Guarino.
- Ecology and management of *Helosciadium repens* – John Janssen.
- Geographical patterns of plant families in European vegetation – Martin Večeřa.
- Vegetation of rewetted fens – Florian Jansen.
- Adaptation to temperature and drought in gentian plants originating from their distribution edges – Hanne De Kort.

EVA PROJECTS CANCELLED

- Gap analysis of the distribution data on vascular plants throughout Europe on the example of two families, Brassicaceae (Cruciferae) and Caryophyllaceae – Jozef Šibík.
- Modelling climatic niche of North American tree species – Martina Sychrová (EVA data not needed).
- The importance of soil pH data in broad-scale distribution modelling of European plant species – Šárka Špáníková (EVA data not needed).
- ETC / BD task 1.2.2.2 Support to the Pollinators Initiative – David Paternoster (EVA data not needed).

NEW EVA PUBLICATIONS

Bürger J., Küzmič F., Šilc U., Jansen F., Bergmeier E., Chytrý M., Cirujeda A., Fogliatto S., Fried G., Dostatny D.F., Gerowitt B., Glemnitz M., Gonzáles-Andújar J.L., Hernández Plaza E., Izquierdo J., Kolářová M., Lososová Z., Metcalfe H., Nečajeva J., Petit S., Pinke G., Rašomavičius V., von Redwitz C., Schumacher M., Ulber L. & Vidotto F. 2022. **Two sides of one medal: arable weed vegetation of Europe in phytosociological data compared to agronomical weed surveys.** Applied Vegetation Science 25: e12460.

de Jonge M.M., Benítez-López A., Hennekens S., Santini L., Huijbregts M. A., & Schipper A. M. 2021. **Conditional love? Co-occurrence patterns of drought-sensitive species in European grasslands are consistent with the stress-gradient hypothesis.** Global Ecology and Biogeography 30: 1609-1620.



- Fristoe T.S., Chytrý M., Dawson W., Essl F., Heleno R., Kreft H., Maurel N., Pergl J., Pyšek P., Seebens H., Weigelt P., Vargas P., Yang Q., Attorre F., Bergmeier E., Bernhardt-Römermann M., Biurrun I., Boch S., Bonari G., Botta-Dukát Z., Bruun H.H., Byun C., Čarni A., Carranza M.L., Catford J.A., Cerabolini B.E.L., Chacón-Madrigo E., Ciccarelli D., Čušterevska R., de Ronde I., Dengler J., Golub V., Haveman R., Hough-Snee N., Jandt U., Jansen F., Kuzemko A., Kůzmič F., Lenoir J., Macanović A., Marcenò C., Martin A.R., Michaletz S.T., Mori A.S., Niinemets Ü., Peterka T., Pielech R., Rašomavičius V., Růšňa S., Dias A.S., Šibíková M., Šilc U., Stanisci A., Jansen S., Svenning J.-C., Swacha G., van der Plas F., Vassilev K. & van Kleunen M. 2021. **Dimensions of invasiveness: Links between local abundance, geographic range size, and habitat breadth in Europe's alien and native floras.** Proceedings of the National Academy of Sciences of the USA 118: e2021173118.
- Guarino R., Chytrý M., Attorre F., Landucci F. & Marcenò C. 2021. **Alien plant invasions in Mediterranean habitats: an assessment for Sicily.** Biological Invasions 23: 3091-3107.
- Hájek M., Těšitel J., Tahvanainen T., Peterka T., Jiménez-Alfaro B., Jansen F., Pérez-Haase A., Garbolino E., Carbognani M., Kolari T. H. M., Hájková P., Jandt U., Aunina L., Pawlikowski P., Ivchenko T., Tomaselli M., Tichý L., Dítě D., Plesková Z. & Mikulášková E. 2022. **Rising temperature modulates pH niches of fen species.** Global Change Biology 28: 1023–1037.
- Hellegrers M., Ozinga W.A., Hinsberg A., van Huijbregts M.A.J., Hennekens S.M., Schaminée J.H.J., Dengler J. and Schipper A.M. 2020. **Evaluating the ecological realism of plant species distribution models with ecological indicator values.** Ecography 43: 161-170. (Note: this publication was not mentioned in previous EVA reports)
- Kreyling J., Tanneberger F., Jansen F. van der Linden S., Aggenbach C., Blüml V., Couwenberg J., Emsens W.-J., Joosten H., Klimkowska A., Kotowski W., Kozub L., Lennartz B., Liczner Y., Liu H., Michaelis D., Oehmke C., Parakenings K., Pleyl E., Poyda A., Raabe S., Röhl M., Rücker K., Schneider A., Schrautzer J., Schröder C., Schug F., Seeber E., Thiel F., Thiele S., Tiemeyer B., Timmermann T., Urich T., van Diggelen R., Vegelin K., Verbruggen E., Wilmking M., Wrage-Mönnig N., Wolejko L., Zak D. & Jurasinski G. 2021. **Rewetting does not return drained fen peatlands to their old selves.** Nature Communications 12: 5693.
- Loidi J., Chytrý M., Jiménez-Alfaro B., Alessi N., Biurrun I., Campos J.A., Čarni A., Fernández-Pascual E., Font Castell X., Gholizadeh H., Indreica A., Kavğacı A., Knollová I., Naqinezhad A., Novák P., Nowak A., Škvorc Ž., Tsiropidis I., Vassilev K. & Marcenò C. 2021. **Life-form diversity across temperate deciduous forests of Western Eurasia: A different story in the understory.** Journal of Biogeography 48: 2932-2945.
- Marcenò C., Padullés Cubino J., Chytrý M., Genduso E., Gristina A., La Rosa A., Salemi D., Landucci F., Salvatore P. & Guarino R. 2021a. **Plant hunting: exploring the behaviour of amateur botanists in the field.** Biodiversity and Conservation 30: 1-14.
- Marcenò C., Padullés Cubino J., Chytrý M., Genduso E., Salemi D., La Rosa A., Gristina A., Agrillo E., Bonari G., Giusso del Galdo G., Ilardi V., Landucci F. & Guarino R. 2021b. **Facebook groups as citizen science tools for plant species monitoring.** Journal of Applied Ecology 58: 2018-2028.
- Pouteau R., Biurrun I., Brunel C., Chytrý M., Dawson W., Essl F., Fristoe T., Haveman R., Hobohm C., Jansen F., Kreft H., Lenoir J., Lenzner B., Meyer C., Moeslund J.E., Pergl J., Pyšek P., Svenning J.-C., Thuiller W., Weigelt P., Wohlgemuth T., Yang Q. & van Kleunen



M. 2021. **Potential alien ranges of European plants will shrink in the future, but less so for already naturalized than for not yet naturalized species.** *Diversity and Distributions* 27: 2063–2076.

Van Daele F., Honnay O. & De Kort H. 2021. **The role of dispersal limitation and reforestation in shaping the distributional shift of a forest herb under climate change.** *Diversity and Distributions* 27: 1775-1791.

Zedek F., Veselý P., Tichý L., Elliott T., Garbolino E., de Ruffray P. & Bureš P. 2022. **Holocentric plants are more competitive under higher UV-B doses.** *New Phytologist* 233: 15-21.