

sPlot - A new tool for global vegetation analyses

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Abstract

© 2019 International Association for Vegetation Science Aims: Vegetation-plot records provide information on the presence and cover or abundance of plants co-occurring in the same community. Vegetation-plot data are spread across research groups, environmental agencies and biodiversity research centers and, thus, are rarely accessible at continental or global scales. Here we present the sPlot database, which collates vegetation plots worldwide to allow for the exploration of global patterns in taxonomic, functional and phylogenetic diversity at the plant community level. Results: sPlot version 2.1 contains records from 1,121,244 vegetation plots, which comprise 23,586,216 records of plant species and their relative cover or abundance in plots collected worldwide between 1885 and 2015. We complemented the information for each plot by retrieving climate and soil conditions and the biogeographic context (e.g., biomes) from external sources, and by calculating community-weighted means and variances of traits using gap-filled data from the global plant trait database TRY. Moreover, we created a phylogenetic tree for 50,167 out of the 54,519 species identified in the plots. We present the first maps of global patterns of community richness and community-weighted means of key traits. Conclusions: The availability of vegetation plot data in sPlot offers new avenues for vegetation analysis at the global scale.

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Keywords

biodiversity, community ecology, ecoinformatics, functional diversity, global scale, macroecology, phylogenetic diversity, plot database, sPlot, taxonomic diversity, vascular plant, vegetation relevé

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