

Developing a sustainable working platform for gathering biological data in the field

DAGMAR TRIEBEL¹, Wolfgang Ahlmer², Andreas Bresinsky², Oliver Dürhammer², Stefan Jablonski³, Alexandra Kehl³, Dieter Neubacher¹, Peter Poschlod², Gerhard Rambold⁴, Tobias Schneider³, Bernhard Volz³, Markus Weiss¹

¹Botanische Staatssammlung München and IT Centre of the Bavarian Natural History Collections, München, Germany

²University of Regensburg, Institute of Botany, Regensburg, Germany

³University of Bayreuth, Institute of Informatics, Bayreuth, Germany

⁴University of Bayreuth, Dept. of Plant Systematics, Bayreuth, Germany

The project is based on the development of the Diversity Workbench framework (www.diversityworkbench.net) and will expand the platform by the software application DiversityMobile for handheld devices or smartphones. The approach is to gain biological research data from the field by using mobile devices with GPS functionality and a digital imagery option. Several user interfaces for two major biological communities allow biodiversity scientists, non-professional experts in the field and ecologists to gather and store monitoring data or complex biological data already in the field. The user interface for the devices will be interchangeable and give access to taxonomic name, ecological descriptor, and general scientific term presets, and allow for selecting reference points in digitized topographic maps. The gathered data are transferred to a data repository at the IT centre of the Bavarian Natural History Collections (SNSB) via data replication between the databases involved and are further redistributed to end-users via various types of interfaces. Besides this integrated infrastructure, the data repository hosts schemata and generic interfaces for the data exchange with handheld devices, wrappers (ABCD schema) and external applications for data analysis and presentation. The complete dataflow and working environment is built up in cooperation between four research groups. In the course of the development, new strategies of complex data access and structuring will be modelled and tested. This especially concerns more-dimensional interrelations between organisms in a temporal and spatial context.