BIOTABase – a data base software for biodiversity monitoring

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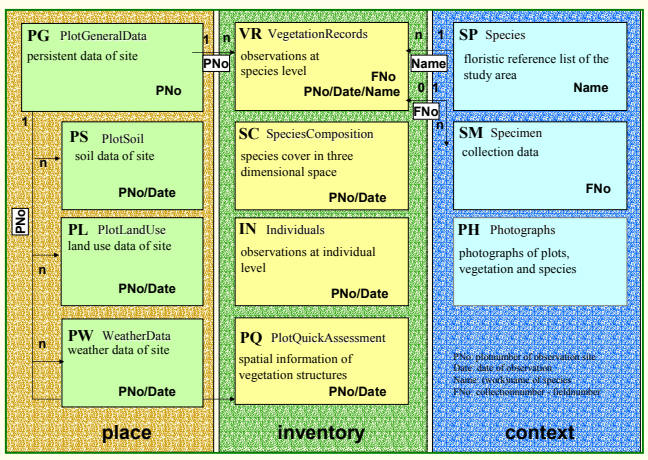
A permanent plot in a BIOTA biodiversity observatory in Leliefontein / South Africa

What is BIOTABase: BIOTA AFRICA and GLOWA Impetus aim at an integrated transdisciplinary approach towards sustainable land use and conservation of biodiversity in Africa. Within the frame of these projects the software BIOTABase has been developed. The main goal of BIOTABase is the structured storage of vegetation observations under consideration of soil, climate and land use data.

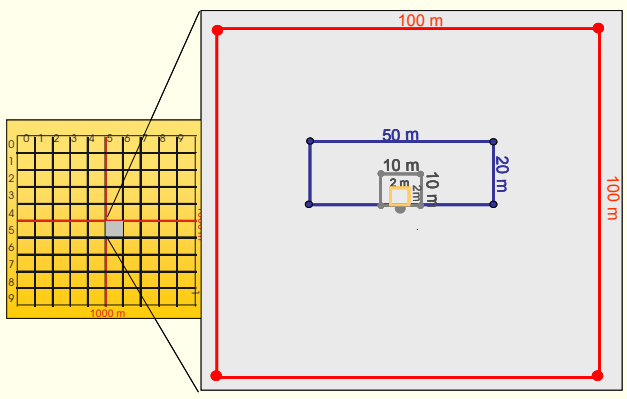


Structure of BIOTABase

What is BIOTABase able to do: BIOTABase is able to store vegetation data in combination with environmental information. Vegetation cover values can be stored according to vegetation strata. Observations can be directly linked to the respective records of the collected specimens. The process of taxonomic identification of specimens can be documented.

It is possible to build up (or import) a taxonomic reference list for the study area in order to facilitate data input and to check nomenclature. Photographs can be administrated and linked to site, relevé and species data. Of course data input is supported by several tools (quality checks, input support) to make the life of users as easy as possible.

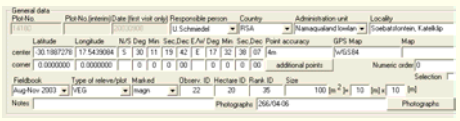
Special features of BIOTABase: Traditionally, a relevé number relates to a vegetation record at a certain moment and a certain place. Hence this number includes two different types of information: the location and the date of the relevé. In BIOTABase though, this information is kept separately in order to store permanent plots in an adequate way. This has great advantages for the statistical analysis of large datasets and time series. Nested plot data, e.g. biodiversity observatories of BIOTA AFRICA can be modeled and handled. Species inventories can be compiled according to the spatial hierarchy of the study sites.



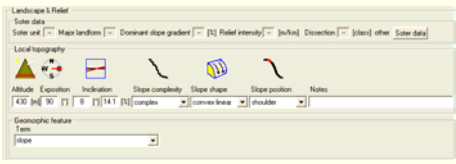
Nested plot design of BIOTA biodiversity observatories

Further special features: BIOTABase connects field observations with herbarium collections. The results of identification processes can be used to update observation records automatically. This update procedure can be organized in a controlled way in order to rename either just the single record with the respective collection number or all records with the same field name.

Screenshots: The form **"**Plot general data" contains the time invariable parameters such as coordinates and topographical characteristics. "Plot soil data" stores time dependent abiotic and biotic soil information. "Vegetation records" are also time dependent. "Species composition" uses these data to show the floristic composition and structure of the relevé.



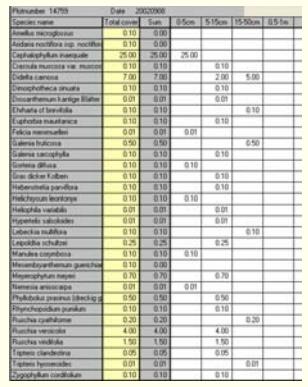
Plot general data (position)



Plot general data (topography)

Plot soil data

Vegetation records



Species composition

The following features are of highest importance:

- BIOTABase facilitates the amalgamation of the different databases from several partners in international cooperation projects.
- BIOTABase offers tools for quality control with respect to taxonomic correctness.
- BIOTABase allows continuous data updating.
- BIOTABase links field observations and herbarium administration.
- BIOTABase joins image documentation with field observations.
- BIOTABase provides the data structure to analyse times series.

Interfaces:

BIOTABase provides interfaces to: CANOCO, Juice, MS-Office, and GIS-Applications.

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