

DIVA-GIS

A Geographical Information System for the Analysis of Biodiversity Data

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This document briefly presents a geographical information system for the analysis of biodiversity data, called DIVA-GIS or DIVA.

What is DIVA-GIS?

DIVA-GIS (Version 5.2) is a geographical information system software package specifically designed for mapping and analyzing biodiversity data. DIVA is developed by Robert J. Hijmans, Luigi Guarino, Andy Jarvis, Rachel O'Brien, and Prem Mathur, supported by the International Plant Genetic Resources Institute (IPGRI), the International Potato Center (CIP), the UC Berkeley Museum of Vertebrate Zoology, the Secretariat of the Pacific Community and others.

What can you do with DIVA?

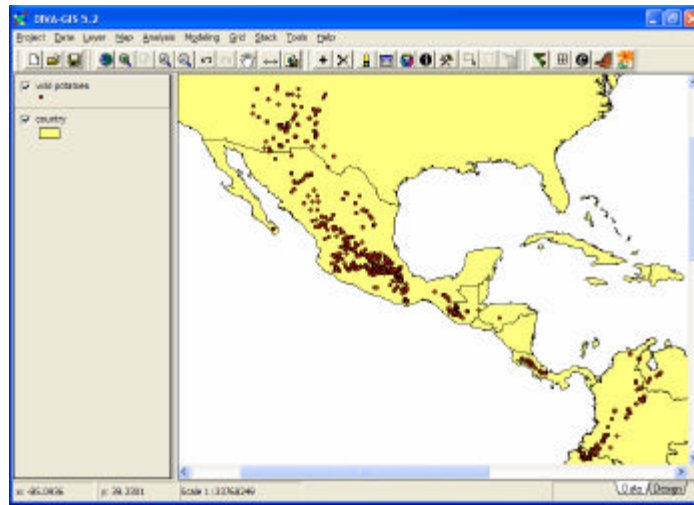
With DIVA, one can create maps of the geographical distribution of biodiversity (plant and animal species) of the collection sites. The analytical functions of DIVA allow mapping richness and diversity, (including based on DNA data; mapping the distribution of specific traits; identification of areas with complementary diversity; and analysis of spatial autocorrelation). DIVA can also extract and use climatic data for the prediction of the presence of species under different climatic regimes and present the climatic environment of data collection sites.

Downloading DIVA-GIS

DIVA software can be downloaded freely from (<http://www.diva-gis.org/down.asp>). In addition, a number of thematic maps and/or geo-referenced databases can be downloaded from <http://www.diva-gis.org/Data.htm> . All these maps and databases are in the public domain. The data is in either shape file or grid file format. Files have been compressed using the ZIP format. The data are not projected (i.e., in latitude/longitude). The maps appear as graphics files (GIF) that can be copied and pasted into another application.

Using DIVA

DIVA's main window has two sections: the map and the table of contents. The map uses the geo-referenced data, called "layers" or 'themes'. The table of contents provides the list of layers on the current map. The menu bar provides the DIVA-GIS functions, which include *Project, Data, Layer, Map, Analysis, Modeling, Grid, Stack, Tools* and *Help menus*. These are described in detail in the manual (Hijmans et al. 2005). The manual, tutorial and exercises can be downloaded from <http://www.diva-gis.org/Materials.htm> .



Applications

DIVA has been brought into wider use for the study of biodiversity. For an example of DIVA-GIS use you may refer the paper by Hijmans et al. 2001 entitled, “Geographic distribution of wild potato species”

(http://www.cipotato.org/DIVA/docs/AJB_wild%20potato%20geography_Hijmans%20and%20Spooner.pdf).

For those interested in other biodiversity mapping and software, the DIVA website (<http://www.diva-gis.org/>) includes a small number of excellent links.

Citations

Hijmans, R. J., Guarino, L. and Rojas, E. 2002, Diva-GIS version 2. A Geographical Information System for the Analysis of Biodiversity data. Manual. International Potato Center, Lima, Peru.

Hijmans, R. J., Guarino, L., Jarvis, A., O’Brien, R., Mathur, P., Bussink, C., Cruz, M., Barrantes, I. and Rojas, E. 2005, Diva-GIS version 5.2. Manual.

Hijmans, R. J. and Spooner, D. M. 2001. Geographic Distribution of Wild Potato Species, American Journal of Botany, 88(11): 2101-2112.
(http://www.cipotato.org/diva/docs/AJB_wild%20potato%20geography_Hijmans%20and%20Spooner.pdf)

Hijmans, R. J., Guarino, L, Cruz, M, and Rojas, E. 2001. Computer Tools for Spatial Analysis of Plant Genetic Resources data: 1 DIVA-GIS, Plant Genetic Resource Newsletter, No. 127: 15-19, International Potato Center, Lima, Peru. (http://www.diva-gis.org/docs/pgr127_15-19.pdf)