

## Two new websites on vegetation information

### **SEMHAVEG, a tool for consulting and downloading vegetation and habitat maps**

<http://www.ub.edu/geoveg/cat/semhaveg.php>

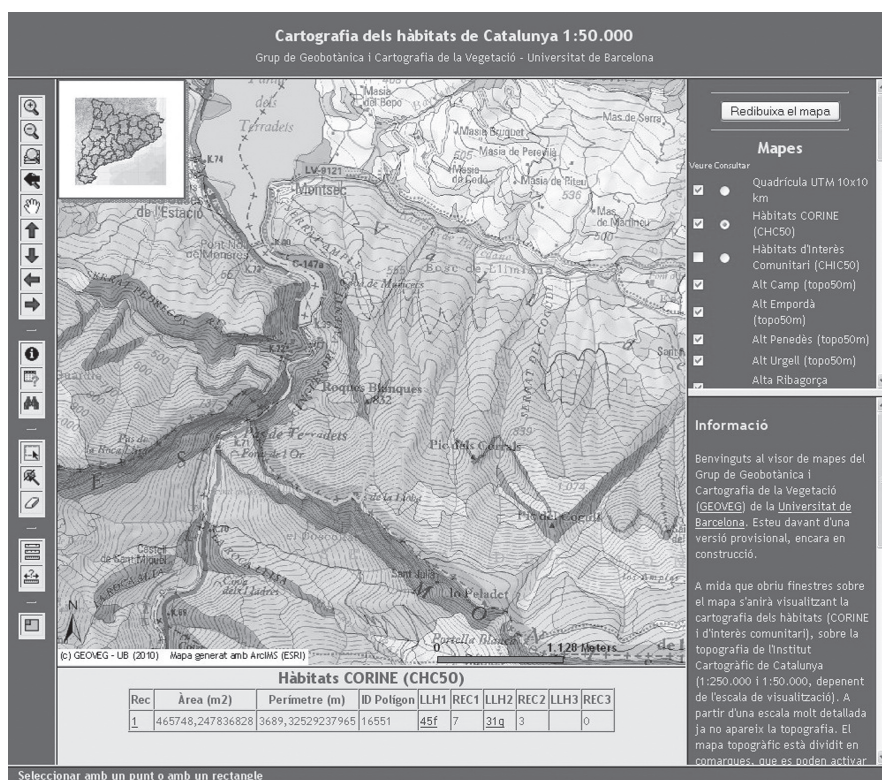
The Geobotany and Vegetation Mapping Research Group (Grup de Recerca de Geobotànica i Cartografia de la Vegetació - GEOVEG) of the University of Barcelona has in its website a vegetation and habitat map server, known as SEMHAVEG (Servidor de Mapes d'Hàbitats i de Vegetació). As well as offering the opportunity to download maps, the portal provides access to the group's web map services catalogue. Furthermore, users may consult the habitat cartography through an image viewer without the need to download it.

With regard to downloading the maps, the website provides access to the digital cartography documents developed by the research group over the last few years. Therefore the Vegetation Map of Catalonia sheets (to 1:50,000 scale) are available, both those so far published on paper, and the unedited ones produced over the last few years. Of the first group, a second updated and revised version is sometimes available. This project has benefited from the support of the Institute of Catalan Studies (l'Institut d'Estudis Catalans – IEC) and the Department of Environment and Housing (Departament de Medi Ambient i Habitatge - DMAH) of the Generalitat de Catalunya. The Habitat Map of Catalonia, to 1:50,000 scale, can also be downloaded (this project was undertaken in association with the DMAH). All maps are available in compressed ESRI interchange format (e00).

The research group's Web Map Services or WMS, are layers of cartographic information. Thanks to the internet, they can be added to applications compatible with the Open Geospatial Consortium (OGC) standards, without the need to download the original digital documents. SEMHAVEG has a catalogue of the WMP available, produced in collaboration with the Spatial Data Infrastructure of Catalonia (Infraestructura de Dades Espacials de Catalunya - IDEC) of the Cartographic Institute of Catalonia (l'Institut Cartogràfic de Catalunya - ICC). There are also links to other environmental cartography and reference catalogues, as well as to viewers which allow WMS to be loaded remotely.

The portal also offers the opportunity to access a map viewer which can be used to view the Habitat Map of Catalonia (to 1:50,000 scale) directly from the web browser, without the need for any particular software. This tool allows users to perform most of the visualisation functions expected in an application of this type, and at the same time consult the attributes of the habitat map.

The map server is constantly being updated, and therefore new maps or updated versions are frequently added as and when available. At the Geobotany and Vegetation Mapping Research Group, we hope that this service is helpful to interested map users or for those involved in the study and management of the natural environment.



**Figure 1.** One screen of the map viewer of SEMHAVEG, showing a habitat map.

## SIVIM, an on-line database of Iberian and Macaronesian vegetation

<http://www.sivim.info/sivi>

This database (Sistema de Información de la Vegetación Ibérica y Macaronésica - SIVIM) is conceived as a vegetation data system designed for capturing, hosting, editing, analyzing and outputting georeferenced vegetation data. It was created three years ago with the aim to be a helpful tool both in scientific research and in assessment of decision making on land planning and management.

SIVIM currently stores almost 95,000 phytosociological relevés, mainly from the Iberian peninsula and Balearic islands (Fig. 2), where data compilation has primarily focused so far. These relevés contain around 1,500,000 floristic records, which are now available for consultation not only in the SIVIM web but also in the national (<http://www.gbif.es>) and international (<http://www.gbif.org>) GBIF nodes. Around 1,500 scientific references (books and papers) have been screened for their inclusion into the database, the oldest dating from more than 80 years ago. One of the



**Figure 2.** Geographic distribution of the relevés computerized in SIVIM. Color intensity indicates the number of relevés in each cell of the UTM  $10 \times 10$  km grid.

project goals by the end of 2012 is to reach 125,000 Ibero-Macaronesian vegetation relevés which would represent two thirds of the lower estimation of accessible data in the territory covered by the database. During its first year of operation, the SIVIM web has received 22,000 visits for consulting or requesting data.

The SIVIM database includes fields for all the community descriptors commonly used in phytosociological relevés, but the structure of data is open to other kinds of metadata susceptible to be applied in particular analyses or sampling designs. Metadata fields can be exported and managed by users to carry out specific analyses under programs or packages other than those available at the SIVIM web.

Unlike other vegetation databases, SIVIM is conceived to offer direct and free on-line access to relevés, tables, and floristic, syntaxonomical or bibliographical records through versatile queries. The SIVIM portal currently offers the following query options:

- relevés of a particular syntaxon
- distribution area (map) of a selected syntaxon
- syntaxa or relevés in one or more (up to 6) selected UTM  $10 \times 10$  km grid cells
- syntaxa or relevés present in one or more selected localities
- syntaxa or relevés including one or more selected species
- taxa (and their frequencies) present in a selected syntaxon
- literature references containing relevés of a selected syntaxon

Data downloading of both relevés and tables is performed in XML format. This format is compatible with VegAna (DE CÁ CERES et al. 2003; <http://biodiver.bio.ub.es/vegana>). This is a software package of tools for vegetation analysis and edition, which is also freely available at the same web site. The *Quercus* module of *VegAna* allows data conversion from XML to other data formats common in numerical analyses of vegetation, as well as manipulation and edition of data prior to conversion.

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Albert FERRÉ, Xavier FONT & Josep M. NINOT