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Tools for visualisation of biodiversity data retrieved through the data portal, against dedicated GIS layers

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	BOKU, Universität für Bodenkultur Wien, Austria
	ICLARM, International Center for Living Aquatic Resources Management, Malaysia
	IRD, Institut de Recherche pour le Développement, France
	UDE, Universität Duisburg-Essen, Germany
	IUCN, International Union for Conservation of Nature, Switzerland
	UOXF.AC, Oxford University, UK
	UB, Universitat de Barcelona, Spain
	UFZ, Helmholtz Zentrum für Umweltforschung, Germany
	UCL, University College of London, UK
	EAWAG, Eidgenössische Anstalt für Wasserversorgung, Abwasserreinigung und Gewässerschutz, Switzerland
	UCBL, Université Claude Bernard - Lyon 1, France
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	ECOLOGIC, Ecologic GmbH Institut für Internationale und Europäische Umweltpolitik, Germany
	EC-ERC, Commission of the European Communities - Directorate General Joint Research Centre, Italy
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BIOFRESH

Biodiversity of Freshwater Ecosystems: Status, Trends, Pressures, and Conservation Priorities

Project no. 226874

Large scale collaborative project

Tools for visualisation of biodiversity data retrieved through the data portal, against dedicated GIS layers

Deliverable number	D1.2
Deliverable name	Tools for visualisation of biodiversity data retrieved through the data portal, against dedicated GIS layers
WP no.	WP 1
Lead Beneficiary (full name and Acronym)	Royal Belgian Institute of Natural Sciences ,RBINS
Nature	Database
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Delivered	yes
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Comments	Report sent only in M17 in order to include an update of the new version of the portal launched 28/03/11

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PU	Public	✓
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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In case the report consists of the delivery of materials (guidelines, manuscripts, etc)

Delivery name	Delivery name	From Partner	To Partner

Introduction

WP1 (lead RBINS) is in charge of the creation of the BioFresh biodiversity data portal, designed for providing users free and universal access to information on freshwater biodiversity. A first (beta) version of this portal, with basic functionality, was launched mid August and moved to the data subdomain (http://data.freshwaterbiodiversity.eu/) of the BioFresh website in September. In order to make the portal useful for scientists and water managers, we need to extend the database and further develop the mapping tools for visualizing the occurrence data. This report details this progress and reflects the version of the data portal launched on 28/03/2011.

Developments since the launch of the preview version
Since the launch of the data portal, we have received a number of comments, mostly on the consistency with the BioFresh-website and the user interface for searching. These have been integrated in a ticket system for follow-up and have gradually been integrated.

New developments on the database include the full integration of the Freshwater Animal Diversity Assessment (FADA) Project (http://fada.biodiversity.be/) dataset, which presently contains around 31'000 accepted species names. For these species, we harvested GBIF distribution data (over 10 million distribution records) and thus considerably extended our database.

In parallel to extending the content on the portal, we worked on improving its look and feel. This includes two major aspects. First, a redesign of the search and search results page, with the integration of a disambiguation page, differentiation between species and occurrence searching. Secondly, the mapping interface has been moved to a completely different technology, which allows to visualize (occurrence) data in both shapefile format (faunistic regions) and point data format.

Technical details mapping environment
For mapping geospatial data, we are using OpenLayers in combination with GeoServer and a PostgreSQL/PostGIS database. The use of GeoServer allows us to share and edit geospatial data and provides an easy way to connect to existing data/maps such as Google Maps. On top of this, we use OpenLayers (open source JavaScript library) to show map data on our web pages.

Screenshots

Fig. 1: Updated homepage of the data portal with integrated search pane. The new search possibilities differentiate between occurrence and species search. For occurrence search, a number of filtering options are offered.

Fig. 2: Example occurrence results, highlighting the layers pane, which allows the user to select specific map layers. Current options include Köppen climatic regions, FADA faunistic regions corresponding to the species searched for and GBIF occurrences for this species.

Fig. 3: Species occurrence details, offering the option to view the information in GBIF.

Future developments
Content-wise, future developments obviously include further extending the number of interoperable datasets that are integrated, including FishBase, IUCN redlist data, further linking to data at Catalogue of Life. In addition, an important development is offering the possibility to download data through the data portal (currently, we offer this possibility on-request to project members).

Technology-wise, we'll invest quite some effort in improving the performance of the system, integrating fuzzy-search algorithms and further improving the included GIS tools.