

THE MANGROVE REFERENCE DATABASE AND HERBARIUM

Massó i Alemán Sergi¹, Carine Bourgeois¹, Ward Appeltans², Bart Vanhoorne², Nathalie De Hauwere², Piet Stoffelen³, Andre Heughebaert⁴ and Farid Dahdouh-Guebas^{1,5}.

¹ Laboratoire de Complexité et Dynamique des Systèmes Tropicaux, Département de Biologie des Organismes, Université Libre de Bruxelles (ULB) - Campus du Solbosch.
CP 169, Avenue Franklin D. Roosevelt 50, 1050 Brussels, Belgium
E-mail: sergimasso@gmail.com

² Flanders Marine Institute (VLIZ), InnovOcean site, Wandelaarkaai 7, 8400 Oostende, Belgium

³ National Botanic Garden of Belgium, Bouchot Domain, Niewelaan 38, 1860 Meise, Belgium

⁴ Belgian Biodiversity Platform, Université Libre de Bruxelles (ULB) - Campus de la Plaine, CP 257, 1050 Brussels, Belgium

⁵ Biocomplexity Research Team, Laboratory of General Botany and Nature Management, Mangrove Management Group, Vrije Universiteit Brussel (VUB), Pleinlaan 2, 1050 Brussels, Belgium

The main objective of the online Mangrove Reference Database and Herbarium is to give a current and historic overview of the global, regional and local distribution of true mangrove species. This database has been initiated in 2001 by the Vlaams Instituut voor de Zee (VLIZ) and the Flanders Marine Data and Information Center (VMDC) in collaboration with the Université Libre de Bruxelles (ULB) and the Vrije Universiteit Brussel (VUB). All the data are based on records containing species location information (literature, maps, herbaria, expert access, etc...) and all mangroves species (approximately 75) display distribution information from many study sites around the world. All the mangrove zones around the world are recorded in this database and a particular species list is available for those sites that have been studied or sampled. This can be viewed and zoomed on easily using a GIS-interface. In addition, the database provides information and pictures of plant physiognomy and ecological adaptations to the intertidal mangrove habitat. Attention is also paid to the nomenclature, systematic (incl. the most recent phylogeny of APGII) as well as vernacular (information can be visualized on synonyms, vernacular names and direct child taxa). Finally, all the information in the database is completed by a Mangrove Reference Herbarium in collaboration with the National Botanical Garden of Belgium and the Belgian Biodiversity Platform, while collaboration with other international herbaria is furthered. Herbarium boards can be consulted using webtools to zoom in on diagnostic characteristics.

In summary, the Mangrove Reference Database and Herbarium (abbreviated to 'Mangroves ' in Aphia) has different purposes:

- to provide a **relational database** for all true mangrove plant species using an expandable taxonomic tree;
- to display a **fact sheet** for each mangrove plant species including basic information with photographs, a scanned herbarium specimen and distribution data;
- to provide a **searchable online distribution map** for each species based on point-locations submitted by researchers world-wide (through papers, herbaria or through online access). The aim is to display historic as well as current distribution maps by filtering the data in the database with the respect to the time the fieldwork/collection was done;
- to preserve a **herbarium reference specimen** for each true mangrove species;
- and, on a longer term, to provide an **automated determination key** to identify mangroves world-wide.

This online Mangrove Reference database is an additional step in the knowledge of mangrove species distribution through several examples in many study sites. It is a dynamic database that gives a widespread view of literature, herbaria and other references on mangrove distribution and invites researchers to collaborate on understanding the functioning of this threatened ecosystem.

The database is continually updated and can be accessed through:

<http://www.vliz.be/vmdcdata/mangroves/>