

## Improving access and use of GBIF through infrastructure cooperation at the Iberian level

*Tuesday 24 September 2019 10:00 (30 minutes)*

The Global Biodiversity Information Facility (GBIF) is a global government-level effort to mobilise and make freely available online primary biodiversity data for all biological groups. Through GBIF, more than 1.3 billion records are currently available globally and 39 million for the Iberian Peninsula. Both Portugal and Spain implemented national data portals to facilitate users' access to biodiversity data in full context and advanced ways, not available at the global level.

The main drivers of biodiversity distribution are related to environmental and climatic factors. Species occurrences are not constrained by political borders. Therefore, access to biodiversity data for scientific and management purposes should be possible under a biogeographic context, enabling analysis of information in ecologically meaningful scopes. Moreover, information systems and technological platforms should promote cross-border cooperation, so that species distribution modelling, species invasion, red listing and other conservation efforts can be seamless performed by researchers and users at the Iberian level.

Many GBIF participants have adopted the opensource Atlas of Living Australia (ALA) platform, creating the community Living Atlases (LA), in which both Portugal and Spain participate. In these countries, the national portals are supported by cloud computing services provided by IBERGRID partners, INCD and IFCA, respectively. These portals have been operating for more than three years, providing thousands of accesses annually. The LA architecture is modular, including several APIs built on top of an infrastructure layer of databases (Cassandra, MySQL), file storage and indexes (SOLR). It is on the creation and configuration of this infrastructure layer that the cloud computing excels, particularly in testing and updating environments.

The web applications of LA platform provide information integration, allowing visualization of data on lists, maps, images formats and metadata. It is possible to create online reports of species lists based on localities or areas. Using spatial modules, biodiversity information can be crossed with geographic or spatial and environmental data, providing even more detailed reports. There are also analysis tools to perform species distribution modeling, red list assessments and other biodiversity-based analysis.

A single infrastructure of LA can support different portals using the hub module. In this way, it is possible to enable a thematic, an institutional or a regional portal. In this presentation, we will explore how the platform can be extended to share biodiversity data across Portugal and Spain, providing biogeographic-based facets that allows searches and analysis, without breaks due to administrative borders. We will also discuss how cloud-based services based on the grid computing community can facilitate this integration at the Iberian level, enabling also redundancy of security and availability of service. This shared vision between GBIF Portugal and GBIF Spain, in the scope of the national infrastructures PORBIOTA and LifeWatch-ES, may contribute to a better support to research studies and natural resource management at the Iberian level.

**Presenter:** FIGUEIRA, Rui

**Session Classification:** Plenary Session on Environmental Sciences