# Biodiversity informatics at the Western Australian Herbarium

**Plant Science and Herbarium**

## Project Core Team

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## Project status as of Oct. 29, 2020, 11:04 a.m.

Approved and active

## Document endorsements and approvals as of Oct. 29, 2020, 11:04 a.m.

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| **Project Team** | granted |
| **Program Leader** | granted |
| **Directorate** | granted |

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## Context

*FloraBase*, the web information system for the Western Australian flora, is the department's main means of communicating botanical taxonomic information. *FloraBase* draws from three corporate datasets maintained by the Herbarium, dealing with names (WACensus), specimens (WAHerb) and images (Imagebank). Managing the currency, authority, data quality and linkages between these datasets is an important task, both for the maintenance of *FloraBase* and for Western Australia's contributions to national and global plant information resources such as the Atlas of Living Australia (ALA) and the Global Biodiversity Information Facility (GBIF). WAHerb is the Herbarium's specimen database and is the sole source of specimen data used by *FloraBase*. Imagebank is the Herbarium's image collection.

## Aims

- Deliver authoritative taxon, specimen and image information on all Western Australian vascular plants, algae, fungi, lichens, mosses and slime moulds to a wide audience, using efficient, effective and rigorous web-based technologies.
- Deliver the department's biodiversity data to the internet using standards-compliant web services and data structures.

## Progress

- Determined the requirements for migration of WAHerb to new infrastructure.
- Reimplemented the FloraBase 3 database model using relational tables following a preliminary trial of a graph model.
- The user security layer was implemented, which will need further work to support departmental SSO if that gains OIDC capability.
- Implemented the following: initial design for review with the project team; Redis-based session management; draft ElasticSearch-based search feature for Advanced Search and Specimen Search; and draft support for editing taxon descriptions and making these searchable.
- Developed a draft data structure for WAHerb and WACensus data with Herbarium and Ecoinformatics staff that informs the data migration process and the software evaluation process.
- Maintenance of the following continued: the *FloraBase* application and content including upgraded infrastructure, regular *Nuytsia* sub-site updates to support ongoing journal releases and bug fixes; Imagebank; WAHerb including the addition of new fields and development of a migration path for the replacement collections management system; and the Publishing System including support for the changes made to fields, and the development of a migration path for WAHerb data.
- Evaluated options for a revised mapping infrastructure.
- Built a draft migration path for collectors and identifiers of specimens.

## Management implications

- *FloraBase* allows the community and department staff to retrieve the most recent information on the name, features, status and distribution of the 14,014 currently recognised native and naturalised Western Australian vascular plant taxa and 2,934 alga, fungus, lichen, moss and slime mould taxa. Species conservation and land management efforts across the State are made more effective by access to this authoritative information.
- WAHerb is the authoritative source of data for any application relying on Western Australian plant specimen data, and as such it is crucial to many applications, including *FloraBase*, Australasian Virtual Herbarium, the ALA and GBIF.

- Imagebank is the authoritative source of data for Western Australian vascular plant images, with full support for images of other taxon groups such as mammals, insects and fungi. It is also the source of data for other applications such as *FloraBase* and ALA.
- Involvement in national and international informatics collaborations enables Western Australia to participate fully in new developments in these areas, ensures that Western Australian data is made available to the broadest possible audience, and ensures that data from other sources can be integrated with local data for the more effective delivery of research outputs and outcomes.

## Future directions

- Continue the development of the WAHerb upgrade.
- Continue the development of FloraBase 3.
- Maintain the remaining applications and engage in the biodiversity informatics community.