Visualising and communicating genome-led biodiversity discovery in Australia

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Knowing what species are where is fundamental to research and conservation of Australia's unique biodiversity. Genomics-led biodiversity exploration has accelerated over the last decade, and this has revealed large numbers of newly-discovered species. However, accessing the most up to date biodiversity information is difficult. This project will enhance an existing tool in the Atlas of Living Australia, enabling the creation of a publicly-accessible searchable interface, and the permanent accessioning of these updated biodiversity data (including taxon-specific DOIs). This project will create an ongoing repository of the most recent, standardised, scientist-verified biodiversity data, freely available for public use by any and all interested stakeholders.

Start date

3 June 2019

Expected completion date

21 October 2019

Investment by ARDC

$49,999

Co-investment partners

Centre for Biodiversity Analysis, Ecology & Evolution, Research School of Biology, The Australian National University

Australian National University

Lead node

Centre for Biodiversity Analysis

1. Production and release of an updated version of the Phylolink application on the Atlas of Living Australia.

This release includes development of a database for the permanent accessioning of data as visualisations, and the generation of a DOI for each visualisation.

2. Improved data FAIRness.

Visualisations will be searchable, and download of data, including metadata, will be made possible.

3. Search interface

A search interface will allow users to find information on taxonomic groups of interest. Character data will have descriptions of each trait. Experts will have the ability to upload a photo of each trait for ease of use.

4. Workflow development

The development of a workflow for dataset publication to ensure quality of visualisation and associated metadata, including a clearly defined CC-BY (Aus) license.

5. Communications plan development

The development of a communication plan for awareness raising and uptake.

6. Completion of project

Project outcomes will be presented at an ARDC Data and Services Summit in October 2019.

Core features

Data repository

A centrally managed data repository for scientist verified biodiversity data, with persistent links via DOI.

Data accessibility

Improved FAIRness of biodiversity data for a broad range of users, including open access to previously paywalled information.

Communication strategy

A plan for facilitating awareness raising and uptake.

Who is this project for?

- State and Federal Environment Departments
- Ecologists
- Policy makers
- Researchers

What does this project enable?

Researchers can be easily recognised for their contributions to the data collection. The metadata associated with each DOI lists authors, so that each visualisation can be cited. Authors of visualisation will be able to include them in their lists of non-peer reviewed scientific outputs. As the data will also be able to downloaded, we believe we will have also enabled research on phylogenetics, species distributions and occurrences that requires large numbers of expert-verified data. We believe improved visualisation of species complexes will improve collaboration among biodiversity scientists, as well as between them and users of this information.

We believe the primary benefit of our improved platform will be government agencies and private industries that require updated information on species distributions and taxonomy for their work. We anticipate that this will improve environmental assessment and reporting across all regions of Australia, and the impact will only grow with time and engagement.

Handy resources

- Final Report [PDF 64KB]
- FAIR Assessment [PDF 61KB]
- Presentation [PDF 900KB]
- Atlas of Living Australia – a collaborative, digital, open infrastructure that pulls together Australian biodiversity data from multiple sources, making it reusable.
- Phylolink – a collection of tools through which biodiversity can be explored from a phylogenetic (or tree of life) perspective.
- Centre for Biodiversity Analysis – a collaborative initiative of the ANU, CSIRO and University of Canberra.

Centre for Biodiversity Analysis

Centre for Biodiversity Analysis, Ecology & Evolution, Research School of Biology, The Australian National University

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