

DEVELOPING AN eFLORA OF WESTERN AUSTRALIA



WHY AN eFLORA?

Conventional printed flora resources will be replaced by a contemporary electronic guide, or eFlora, that will provide comprehensive, up-to-date information to a wide audience. This integrated taxonomic and descriptive resource on native and naturalised plants for Western Australia will deliver greater efficiency and more certainty in species identification.

ONE CONVENIENT RESOURCE

- Built-in keys and tools to identify species in a reserve, bioregion or other area.

VAST, COMPREHENSIVE AND FLEXIBLE INFORMATION DELIVERY

- Search, filter and package species in different formats for different audiences.

GREATER CERTAINTY

- Fast and accurate species identification means greater certainty in environmental impact assessments.

EASY ACCESS + MAINTENANCE

- Website access with future mobile applications.
Quick to update as knowledge grows.

Authoritative guides to the plants of a region are traditionally printed as books. However, these guides (termed Floras) quickly become outdated as new species are described, taxonomic revisions are produced and distributions are revised.

The flow-on effect is that as knowledge grows, several resources containing the latest identification keys, taxonomic revisions, distribution maps and images are required to accurately identify a plant species. Updated Floras are also slow and expensive to reproduce.



WHY DO WE NEED

AN eFLORA?

The production of an eFlora for WA will be a staged process. Given the continuing survey effort in relation to resource developments in the Pilbara, this region will be first to be targeted.

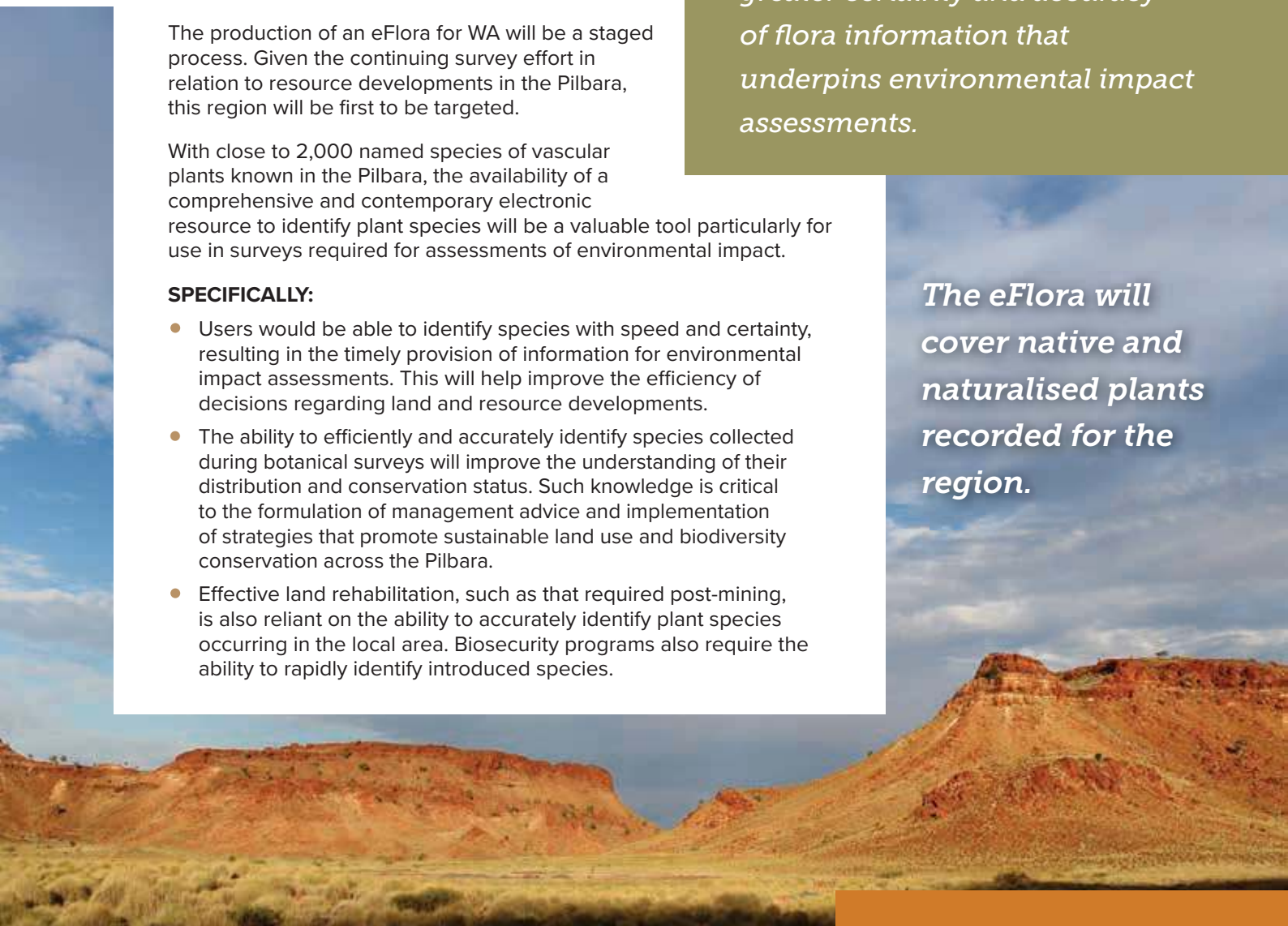
With close to 2,000 named species of vascular plants known in the Pilbara, the availability of a comprehensive and contemporary electronic resource to identify plant species will be a valuable tool particularly for use in surveys required for assessments of environmental impact.

SPECIFICALLY:

- Users would be able to identify species with speed and certainty, resulting in the timely provision of information for environmental impact assessments. This will help improve the efficiency of decisions regarding land and resource developments.
- The ability to efficiently and accurately identify species collected during botanical surveys will improve the understanding of their distribution and conservation status. Such knowledge is critical to the formulation of management advice and implementation of strategies that promote sustainable land use and biodiversity conservation across the Pilbara.
- Effective land rehabilitation, such as that required post-mining, is also reliant on the ability to accurately identify plant species occurring in the local area. Biosecurity programs also require the ability to rapidly identify introduced species.

An electronic resource offers greater certainty and accuracy of flora information that underpins environmental impact assessments.

The eFlora will cover native and naturalised plants recorded for the region.





WHAT RESOURCES

ARE REQUIRED?

A recent important development that facilitates the delivery of an eFlora of Western Australia is the release by the Commonwealth-funded Atlas of Living Australia (ALA) of an integrated eFlora platform for Australia.

The ALA eFlora platform is an online facility that allows any state or region in Australia to readily create and manage an eFlora. It includes links to important online resources such as the Australasian Virtual Herbarium, Australian Plant Census, Australian Plant Name Index and Australian Plant Image Index.

Conservatively, we estimate that descriptions are available for about half of the flora of the Pilbara. These descriptions can be converted to electronic entries and imported into the ALA platform. However, the task of describing the remaining flora is not insignificant. For instance, close to 150 species are recognised as potentially new species, but require further taxonomic investigation before they can be formally described and imported into the system.

The completion of identification keys for Pilbara plant groups will also be required. Existing electronic resources such as the '*Wattles of the Pilbara*' and '*The Rare and Priority Plants of the Pilbara*' app and the newly released Pilbara spinifex app '*SpiKey*' will help to fast-track this process.

The development of the eFlora would be largely undertaken by project-appointed experts from the Western Australian Herbarium, part of the Department of Biodiversity, Conservation and Attractions. The resources of the Herbarium include a collection of 36,000 Pilbara specimens, conservatively valued at 3.6 million dollars. The Western Australian Biodiversity Science Institute will facilitate project development, communicate progress to end users and maximise opportunities to engage other research partners in the project.

FORECAST

- Expected completion in 3 years for the first stage (Pilbara eFlora).
- An indicative budget of \$920,000 per annum based on the employment of 8.5 full time employees.
- Survey botanists indicate that assessments with an eFlora would deliver a 50% saving in time when identifying plant species.

An estimated 500 surveys are conducted each year for environmental impact assessments

WITHOUT AN eFLORA:



- Is there a Flora for the region and where?
- Find and source relevant keys
- Find and source a revision
- If revisions are in journal article, may have to pay subscription to access
- Once plant is identified — need to verify
- Check against existing specimen in Herbarium
- Check against existing image
- Check against known distribution
- Ask an expert

TIME:

25 plant specimens identified per day

Total 10 days (@ 250 plant specimens per survey)

COST:

8 hours @\$120/per hour x 10 days x 500 surveys
= **\$4.8m per year**

WITH AN eFLORA:



- Enter suspected genus/species into eFlora
- The eFlora lists all possible resources (guides, keys, revisions, images, maps, descriptions, specimens)
- eFlora provides electronic access to all resources

TIME:

50 plant specimens identified per day

Total 5 days (@ 250 plant specimens per survey)

COST:

8 hours @\$120/per hour x 5 days x 500 surveys
= **\$2.4m per year**

*A project of The Western Australian
Biodiversity Science Institute in partnership
with the Western Australian Herbarium*

**TOTAL COST SAVINGS:
\$2.4m per year**

To participate in this project please contact:

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Images courtesy of Department of Biodiversity,
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