

## **Project Plan SP 2007-014**

# **Development of interactive identification platforms and content**

**Plant Science and Herbarium**

### **Project Core Team**

|                              |                                   |
|------------------------------|-----------------------------------|
| <b>Supervising Scientist</b> | DrKevin Thiele (Eubio Consulting) |
| <b>Data Custodian</b>        | DrKevin Thiele (Eubio Consulting) |
| <b>Site Custodian</b>        | DrKevin Thiele (Eubio Consulting) |

### **Project status as of Aug. 27, 2017, 6:35 p.m.**

Update requested

### **Document endorsements and approvals as of Aug. 27, 2017, 6:35 p.m.**

|                                |              |
|--------------------------------|--------------|
| <b>Project Team</b>            | granted      |
| <b>Program Leader</b>          | granted      |
| <b>Directorate</b>             | granted      |
| <b>Biometrician</b>            | required     |
| <b>Herbarium Curator</b>       | not required |
| <b>Animal Ethics Committee</b> | not required |

## Development of interactive identification platforms and content

### Science and Conservation Division Program

Plant Science and Herbarium

### Parks and Wildlife Service

Service 2: Conserving Habitats, Species and Ecological Communities

### Project Staff

| Role                  | Person                            | Time allocation (FTE) |
|-----------------------|-----------------------------------|-----------------------|
| Supervising Scientist | DrKevin Thiele (Eubio Consulting) | 0.0                   |

### Related Science Projects

### Proposed period of the project

None – None

## Relevance and Outcomes

### Background

Accurate and effective identification of specimens of plant and animal taxa is essential for biodiversity survey, ecology, conservation assessment, and almost all other branches of biological research that require a taxonomic assignment of specimens. In particular, surveys conducted as part of the environmental assessment process, such as by environmental consultants working on development approvals, require that identifications of plants be accurate and can be done in an efficient and timely manner. Without accuracy in identifications, the presence and occurrence of rare or other conservation-listed taxa in development areas may be missed, resulting in negative conservation outcomes; conversely, the presence and occurrence of such taxa outside development zones may also be missed without effective means of identification, with negative consequences for resource development and planning. In addition to these formal uses of identification tools, broad community engagement with plant biodiversity is enhanced by the availability of simple, effective and accessible means of identifying wildflowers and other plants. Many botanical resources such as floras and their identification keys are relatively inaccessible and intractable for community users. The development of user-friendly and accessible identification keys helps encourage active community participation in this area. While a number of platforms and mechanisms exist for identification of specimens, this project focuses on two, the the Lucid suite of programs (<http://www.lucidcentral.org>), and the IdentifyLife platform (<http://www.identifylife.org>). Lucid is a mature and globally recognized software suite for creating, managing and deploying computer-aided interactive identification tools. IdentifyLife is a new, web-based collaborative framework for managing the descriptive data that underpins interactive identification keys. The project has is developing and deploying keys to some of the largest and most important families of flowering plants in Western Australia.

### Aims

To provide accessible, effective and user-friendly interactive identification tools for key groups of Western Australian flowering plants and to deploy the tools as widely as possible amongst principal user communities.

### Expected outcome

Outcomes are twofold. Firstly, accurate, effective and efficient identification tools bring benefits both to DEC staff and to key DEC clients, particularly the environmental consultants community. Secondly, provision of user-friendly

and accessible identification tools encourages broad community engagement with the plant biodiversity of Western Australia and increases linkages between DEC and the community.

## Knowledge transfer

A wide range of users engage with the identification tools produced as part of this project, from professional researchers and environmental consultants to university and school students and members of the general public. The project itself comprises a technology transfer strategy, providing the vehicle for transfer of knowledge about Western Australia's biodiversity to a broad audience.

## Tasks and Milestones

- Completion and deployment of an interactive key and identification tool for all species of the family Proteaceae. To be completed October 2012
- Completion and deployment of an interactive key and identification tool for all species of the family Goodeniaceae. To be completed October 2012
- Completion and deployment of an interactive key and identification tool for all species of the family Haemodraceae. To be completed June 2013
- Development and deployment of interactive keys and identification tools for other target families and genera as resources allow

## References

## Study design

### Methodology

Taxonomic groups for which keys are to be developed are chosen to meet the following criteria:

1. Preference is given to large families or genera for which other accessible identification tools are unavailable
2. Preference is given to families or genera that are of particular relevance to user communities including environmental consultants and environmentally aware community groups
3. Within these preferences, families and genera are chosen that are tractable and of interest to the Herbarium volunteer(s) who do the bulk of the work

Once a target family or genus has been identified, a draft list of characters relevant to that family is drawn up after assessment of specimens and relevant literature. Coding (of the presence and absence of character states in specimens of all taxa) commences using the draft character list, which is modified as necessary during development.

After initial coding has been completed for all taxa in the group, the key is tested internally for adequacy (separability of taxa) and effectiveness. It is then made available for limited testing by core staff at the Herbarium and key external users.

While testing is in progress (and at times during development of the key) images are created for character states, usually using photographs and photomicrographs of specimens. Character state images and help notes are attached to the key, and core information associated with taxa (descriptions, distributions etc) added.

Once complete, the key is provided through the DEC shopfront for purchase at a nominal price.

Note that refinement and correction of errors in the keys continues after release on the basis of user feedback.

## Biometrician's Endorsement

required

## Data management

### No. specimens

This project does not generate voucher specimens, but uses the entire specimen base of the Herbarium for the taxonomic group in question, for coding and (where appropriate) imaging. Only specimens with expert determinations are used for core coding, to ensure quality control.

### Herbarium Curator's Endorsement

not required

### Animal Ethics Committee's Endorsement

not required

### Data management

All data are backed up regularly on computer hard drives, external hard drives and the network drive to guard against data loss through disk corruption and other errors.

## Budget

### Consolidated Funds

| Source        | Year 1 | Year 2 | Year 3 |
|---------------|--------|--------|--------|
| FTE Scientist |        |        |        |
| FTE Technical |        |        |        |
| Equipment     |        |        |        |
| Vehicle       |        |        |        |
| Travel        |        |        |        |
| Other         |        |        |        |
| Total         |        |        |        |

### External Funds

| Source                    | Year 1 | Year 2 | Year 3 |
|---------------------------|--------|--------|--------|
| Salaries, Wages, Overtime |        |        |        |
| Overheads                 |        |        |        |
| Equipment                 |        |        |        |
| Vehicle                   |        |        |        |
| Travel                    |        |        |        |
| Other                     |        |        |        |
| Total                     |        |        |        |