

Mechanisms for coordination and delivery of taxon profiles in Australia

*Longitudinal use case scenarios
from primary data custodians
and roles for data standards*

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Structured taxonomic descriptive data standards

- enable the rigorous capture of taxon data
- at an atomic character level
- for use in -
 - information retrieval
 - interactive identification
 - rendering descriptions
esp. within taxon profiles
 - data harvesting & aggregation

Coordinating the capture of coded descriptive data

Requires an agreed vocabulary & the definition of characters and states

- for one taxonomic group
 - becomes more complex with additional contributors
- across taxonomic groups
 - becomes more complex with increased variety of taxa and characters

From 1992 the WA Herbarium developed a model for coordination

Progress

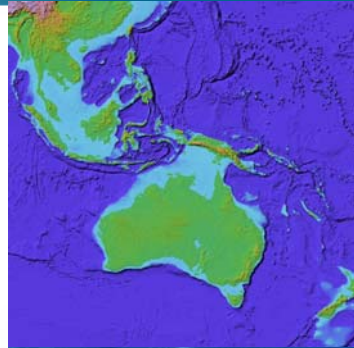
- Developed the backend tools to manage multiple datasets

Uptake slow due to the:

- Lack of frontend tools, and workbench technologies to support specialist needs
- Strict requirements of methods
- Large learning curve
- Lack of interest in specialists to build collaboratively, or
- No pay-off for spending time contributing to non-paper publications

Western Australia

- 2,500,000 km²
-- c. 1/3 of continent
- over 13,000
vascular species
-- c. 1/2 the flora
- 3 bio-provinces
- 79% endemism in the
mediterranean SW



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Home Themes Find Tools Help

Advanced

Name Quick Search:

Go

Plant Names

Flora Descriptions

Interactive Identification

Species Images

Specimen Data

Distribution Maps

Botanical Library

Plant of the Month

Latest Projects



News



Minister launches Interactive Keys 14 Sep 2007

The Minister for Environment and Climate Change launches our latest innovation — online identification tools — in the new FloraBase 2.5.

September PotM: *Dampiera lavandulacea* 1 Sep 2007

This small shrub or perennial herb, with its flowers of deep blue and sometimes purple, is a stand-out feature in the bushland from July to November.

New Churchill Fellow: Ray Cranfield 15 Aug 2007

To study historical lichen collections and community participation in lichen surveys and collections - UK, Sweden.

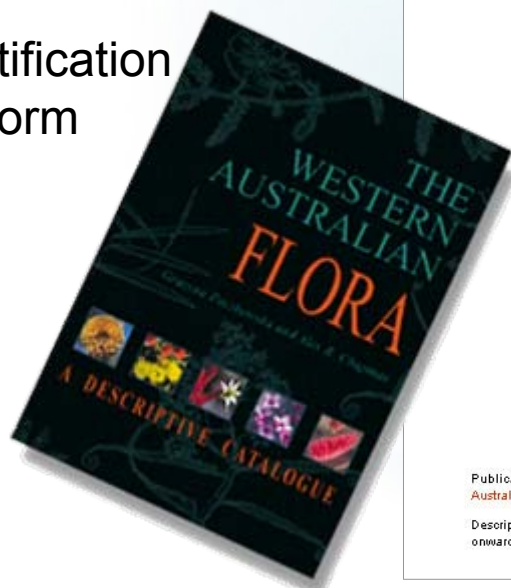
2007 flora stats published 8 Jun 2007

The latest authoritative stats on species names in use in WA, and a baseline count of the number of cryptogams tracked in the State Census.



Descriptive Data

- DELTA-coded data for 13,000 species x 10 characters
- 692-page book published in Oct. 2000
- Data provides interactive identification via web query form in FloraBase



Myrtaceae : Eucalyptus

Eucalyptus rhodantha Blakely & H.Steedman
var. *rhodantha*

Conservation Status: Declared Rare

Name Status: Current

Description:

Spreading mallee, 1.5–4 m high, bark smooth. Fl. red, cream, white, Jul–Jan. Grey/yellow/red sand over laterite. Undulating country, hillslopes.

Distribution: SW: AW, GS.

R

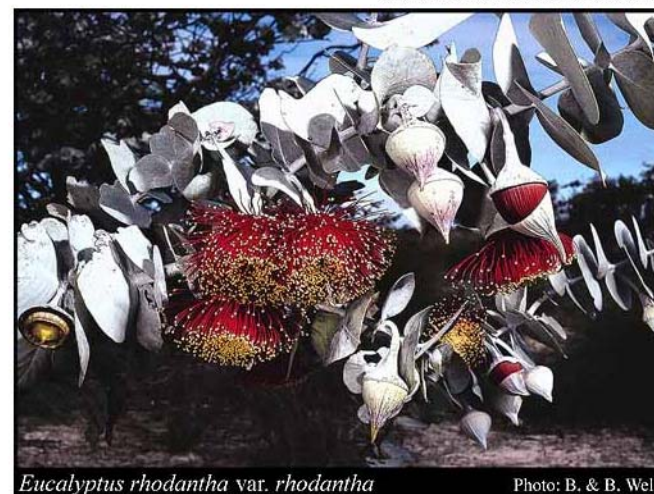
Contributed by G. Paczkowska on Tuesday 28 November 1995

Eucalyptus rhodantha var.
rhodantha

IBRA 5.1 bioregions
 Specimen record
 Locality checked
 Locality under review
 Locality unverifiable



Map by Paul Gioia, WA Herbarium. Current at June 13, 2003



Eucalyptus rhodantha var. *rhodantha*

Photo: B. & B. Wells

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Descriptions were generated using DELTA data format and DELTA software: Dallwitz (1980) and Dallwitz, Paine and Zuercher (1993 onwards, 1995 onwards, 1998).

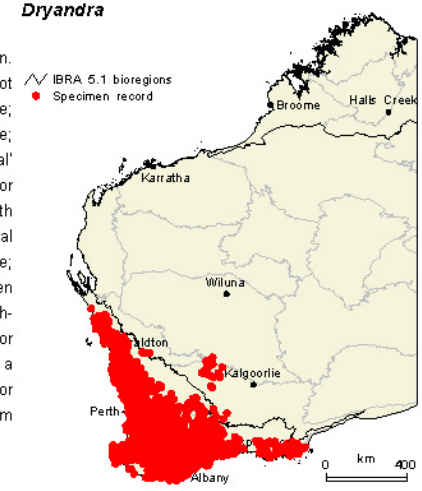


Dryandra

Common name. Dryandras. **Family** Proteaceae.

Dryandra

Habit and leaf form. Small trees, or shrubs; evergreen. Mesophytic, or xerophytic. Heterophyllous, or not heterophyllous. Leaves small to medium-sized; alternate; usually spiral; leathery; petiolate, or subsessile, or sessile; non-sheathing; edgewise to the stem, or with 'normal' orientation; simple, or compound; epulvinate; pinnate, or bipinnate (partially). Leaf blades isobilateral (lower surface with a prominent midrib; upper surface usually smooth with a central furrow); dissected (almost to the midrib into lobes), or entire; flat, or solid; elliptic, or obovate, or obtriangular; when simple/dissected pinnatifid, or palmately lobed, or much-divided. Leaves exstipulate. Leaf blade margins entire, or serrate, or dentate (to prickly-toothed). Leaves without a persistent basal meristem. **Leaf anatomy.** Hairs present, or absent. **Stem anatomy.** Secondary thickening developing from a conventional cambial ring.



Descriptive Data

- DELTA-coded data for 1,200 genera, 200 families x 800 characters
- Interactive keys in Sep. 2007



Dryandra

Photos: M. Pieroni

The descriptions are sourced from the WAGENERA project (which may be cited as shown): T.D. Macfarlane, L. Watson and N.G. Marchant (Editors) (2000 onwards). Western Australian Genera and Families of Flowering Plants. Western Australian Herbarium. Version: August 2002. <http://florabase.oam.wa.gov.au/>.

Descriptions were generated using DELTA data format and DELTA software: Dallwitz (1980) and Dallwitz, Paine and Zuercher (1993 onwards, 1995 onwards, 1998).

Other Western Australian information products

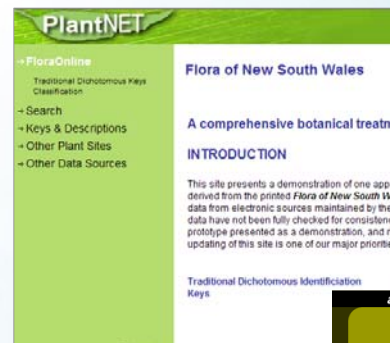
- Flora descriptions
 - Protologues and other scientific taxonomic descriptions
 - Interactive key content
 - Other databases
- ie. publication model now more open to partially-structured descriptive text (but still need to manage it)



Other Australian information products

- Flora descriptions
- Protologues and other scientific taxonomic descriptions
- Interactive key content
- Databases
- Web portals

nb. many web portals often only package static descriptions

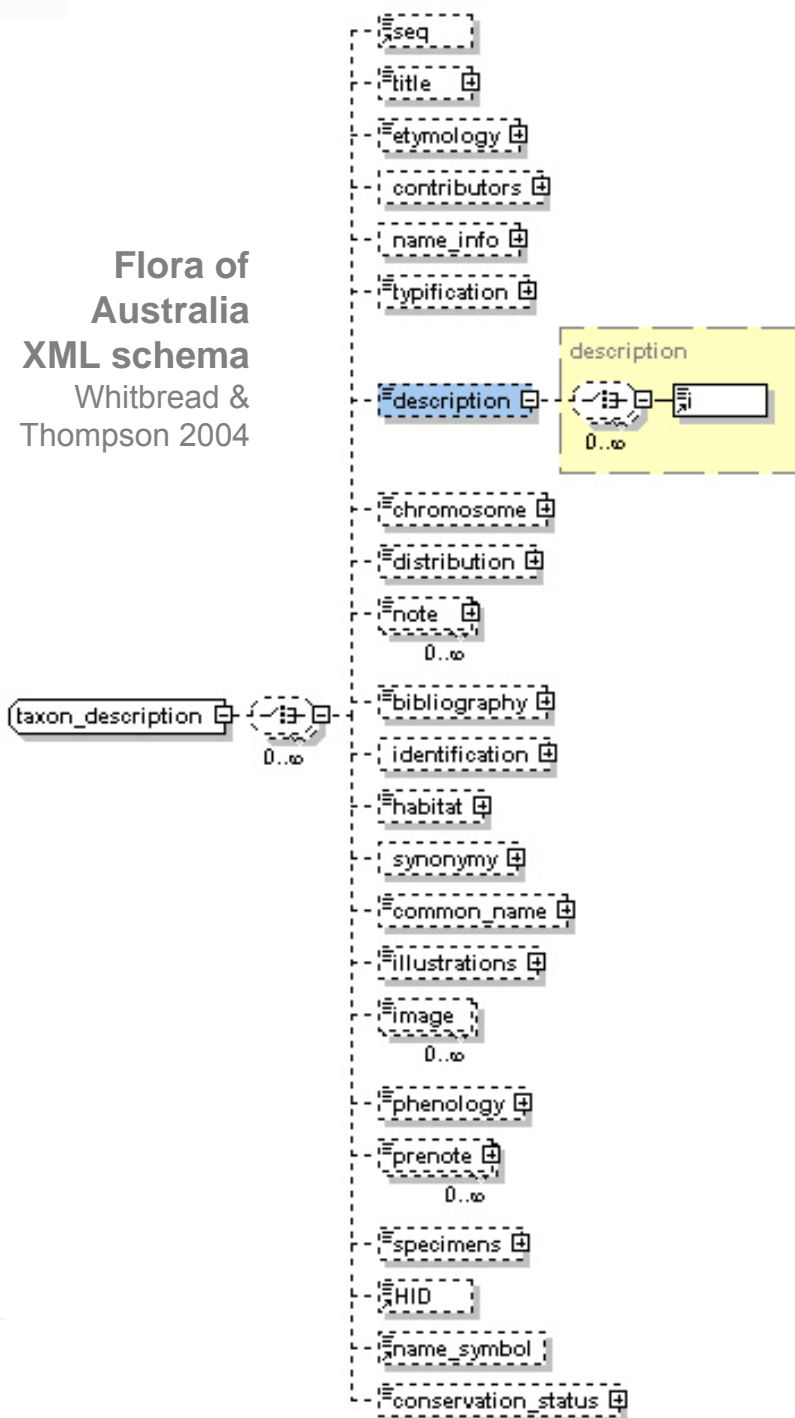


Scalability aspects

- *Flora of Australia* volumes:
 - are marked up with XML schema identifying blocks of descriptive text
 - may provide a common reference standard for marking up species-level descriptions from the many potential sources
- The *Atlas of Living Australia* and *Encyclopaedia of Life* projects will require:
 - the identification of standard components on taxon profile pages
 - a mechanism for reliable tagging
- TDWG Species Profile Model:
 - an RDF schema that identifies many of the same objects
 - An umbrella schema for delivering structured (SDD) & unstructured data

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Flora of Australia
XML schema
Whitbread & Thompson 2004



Species Profile Model (simplified RDF schema)
Hyam & Doering 2007

▼ Class		
Species Profile Model	5 predicates	5 property values
Conservation	6 predicates	6 property values
Physiology	6 predicates	6 property values
Size	6 predicates	6 property values
Evolution Info Item	6 predicates	6 property values
MolecularBiology	6 predicates	6 property values
Use	6 predicates	6 property values
Cytology Info Item	6 predicates	6 property values
Biology	6 predicates	6 property values
Information Item	5 predicates	5 property values
Distribution	6 predicates	6 property values
Ecology	6 predicates	6 property values
Description	6 predicates	6 property values
▼ ObjectProperty		
About Taxon	6 predicates	6 property values
Context Occurrence	6 predicates	6 property values
Context Value	6 predicates	6 property values
Has Content	6 predicates	6 property values
Has Information	6 predicates	6 property values
7 more...		
▼ Ontology		
TDWG SpeciesProfileModel LSID Ontology	8 predicates	8 property values
▼ DatatypeProperty		
Has Content	6 predicates	6 property values
context	6 predicates	6 property values

Challenges for:

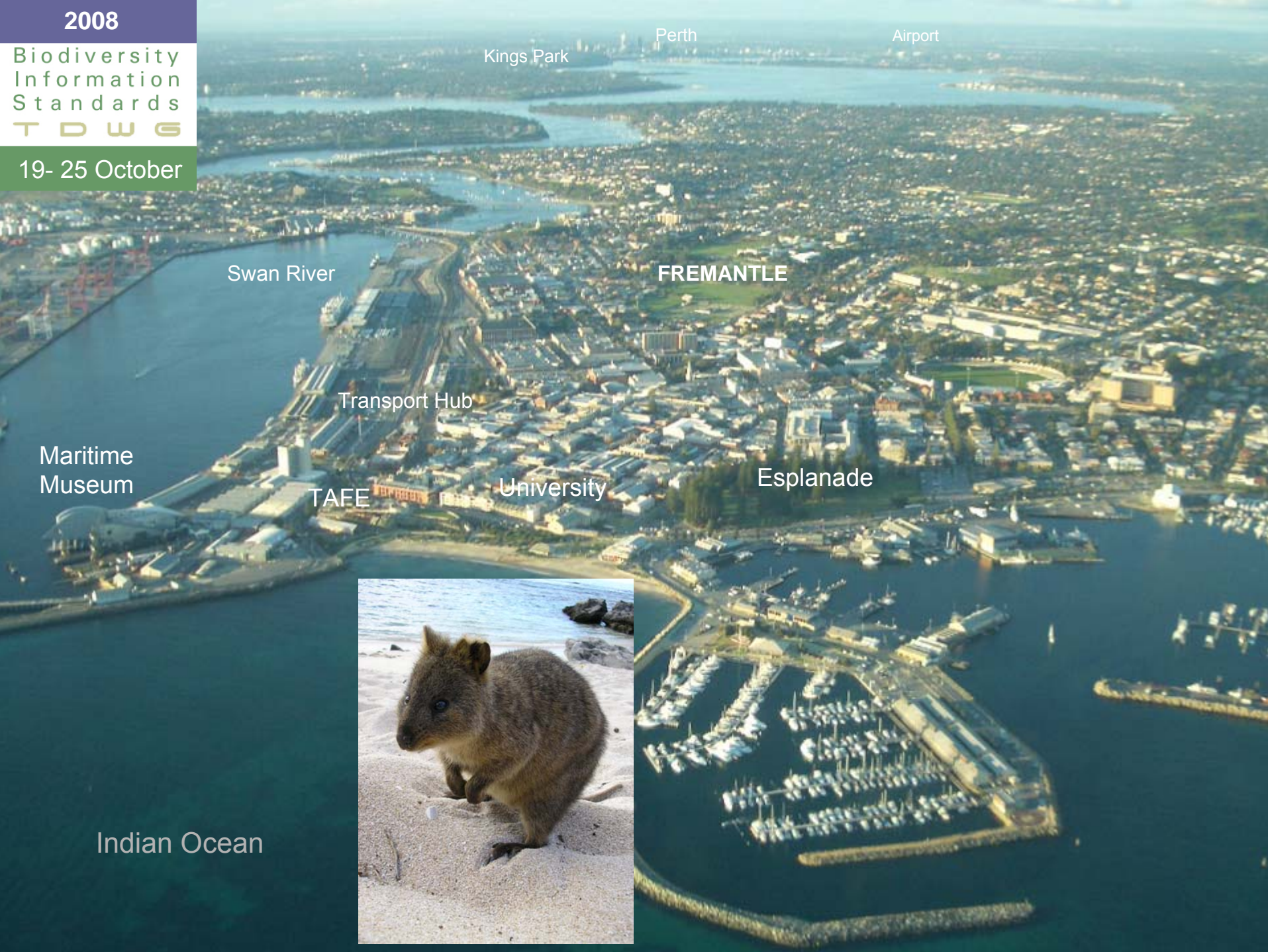
- Primary data providers, custodians and publishers:
 - finding a way to meet their local aims and needs while contributing their content upwards to national and international initiatives
 - while retaining credit and recognition for their efforts
- Aggregators:
 - harvesting responsibly, maintaining currency of their views, facilitating collaboration, recognising data providers
- BIS(TDWG):
 - providing clear implementable standards and
 - upgrade pathways for legacy standard datasets
- Consumers:
 - discriminating content quality and reliable sources

2008

Biodiversity
Information
Standards

T D W G

19- 25 October



Kings Park

Perth

Airport

Swan River

FREMANTLE

Transport Hub

Maritime
Museum

TAFE

University

Esplanade

Indian Ocean

