

SEEDS, POLLEN, AND SPORES

APSA Members (2007-ongoing) The Australasian pollen and spore atlas v1.0. Australian National University, Canberra. **ELECTRONIC ON-LINE:** <http://apsa.anu.edu.au/>

A work-in-progress searchable public database with micrographic images of pollen grains and spores and varying levels of information as to type and external morphology. RECOMMENDED

Australian National Botanic Gardens (ongoing) Australian Plant Image Index (APII). Australian National Botanic Gardens and Australian National Herbarium (Centre for Australian National Biodiversity Research), Canberra. **ELECTRONIC ON-LINE:** <http://www.anbg.gov.au/photo/>

APII comprises a very large set of authenticated plant images, actively curated (but allow for some time lags in adjustment to new nomenclature etc). The ANBG's National Seed Bank is coordinating the gradual addition of images of fruits, seeds, and other dispersal units (diaspores). Search on taxon name or – to search for diaspores only and filter out the general images – choose the 'all fields' or 'more complex criteria' search options and enter 'nsb' (National Seed Bank) in the 'class' field. For further background on the developing seed/diaspore component of this image collection, see Clinton & Guja (2016) in *Australasian Plant Conservation* 25(1): 20-22.

Barker J [2008?] An archaeobotanical tool for Northern Australia. Self-published.

ELECTRONIC ON-LINE, INTERACTIVE, free access.

A pilot version of "an interactive archaeobotanical identification tool based on a restricted number of plant disseminules (seeds and fruits) that are most likely to be recovered from archaeological deposits in northern Australia." May require download of a Java update. See also next entry. NOT EVALUATED.

Barker J [2008?] An ethnobotanical tool for Northern Australia. Publ. by Free Key.

ELECTRONIC ON-LINE, INTERACTIVE, free access.

A companion to the previous entry (which focussed on fruit and seed remains), but this pilot identification system for plants likely to be found in association with archeological deposits in northern Australia "is based on other taxonomic features of the plants including fruits, flowers, leaves and bark. The tool was developed to aid in the location of the plants in the field and may also be used for the development of archaeobotanical reference collections". May require download of a Java update. NOT EVALUATED.

Bonney N (2003) What seed is that? – a guide to the identification, collection, germination and establishment of native plant species for central southern Australian landscapes. Revised edn. Greening Australia South Australia, Adelaide. 352 pp. ISBN 0646198203.

Provides descriptions of about 300 South Australian native species, with fair-quality colour paintings and black and white drawings, with an emphasis on field recognition and species suitable for seed collection for revegetation programs. Hints on seed collection, propagation, and revegetation use, plus notes on ecology and distribution. Several pages of colour photos of seeds are provided - the actual-size reproductions limit their value for identification purposes, and they are nowhere stated to be scientifically vouchered.

Centre for Plant Biodiversity Research (2014) EUCLID - Eucalypts of Australia. Third revised edition. [Flash Drive interactive]. CSIRO Publishing. ISBN: 9781486301973.

ELECTRONIC RESOURCE: INTERACTIVE (flash-drive): Comprehensive interactive identification system for *Eucalyptus*, *Corymbia* and *Angophora*, running on the user-friendly Lucid platform. The many high-quality colour images seeds for many species.

Claussen J (2005) Native Plants of Christmas Island. Flora of Australia Supplementary Series 22. Australian Biological Resources Study (ABRS). 152pp. ISBN 9780642568311.

In addition to descriptions and colour illustrations of the common native species, this book includes a useful 6-page colour guide to drift seeds.

Erickson TE, Barrett RL, Merritt DJ, & Dixon KW (2016) Pilbara seed atlas and field guide: plant restoration in Australia's arid northwest. CSIRO Publishing, Clayton South, Vic. 295 pp. ISBN 9781486305520 (p'back); 9781486305537 (epdf); 9781486305544 (epub).

Describes 103 taxa (no keys) using brief diagnostic descriptions and very good colour photos, and brief ecological notes. Fruits and seeds are closely described and illustrated for all species, with guidance on maturity times, cleaning requirements, viability rates, and germination requirements. Introductory chapters cover the plant diversity of the Pilbara, seed techniques for seed collection, processing and storage; seed dormancy and germination, and a systematic approach to seed use. Appendices cover seed dormancy classes and dormancy-breaking techniques, preparation and use of smoke-water for germination, and a checklist of all vascular plants of the region. An essential handbook for ecological restoration in this region, and a good model for restoration guides in general.

Kirkbride JH, Jr, Gunn CR, Weitzman AL, & Dallwitz MJ (undated, post-1998) Legume (Fabaceae) fruits and seeds. Parkway Publishers Inc., Boone, North Carolina, USA

ELECTRONIC RESOURCE: INTERACTIVE CD-ROM:
<http://www.parkwaypublishers.com/biology.html>). (1 CD-ROM). ISBN 1887905251.

A database in the DELTA format of 667 legume genera fruit and seed characteristics, with 1,377 images (photos, line, and micrographs), and drawings of cotyledons and embryos.

Maslin BR, Thomson LAJ, McDonald MW, & Hamilton-Brown S (1998) Edible wattle seeds of southern Australia – a review of species for arid and semi-arid regions. Dept of Conservation & Land Management WA / CSIRO Publishing, Collingwood, Vic. 108 pp. ISBN 0643063110.

Descriptions, good line drawings and colour photos of 47 species of the southern semi-arid zone, with notes on distribution, seed collection, silviculture and food potential.

Smith J (1999) Australian driftseeds. School of Human & Environmental Studies, University of New England, Armidale, NSW. 123 pp. ISBN 186389537X.

Fair-quality line drawings of seeds or fruits of 70 species of common or interesting driftseeds found on Australian shores, with and introductory chapter on the oceanographic and biogeographic background.

Sweedman L & Merritt D (eds) (2006) Australian seeds. A guide to their collection,

identification and biology. CSIRO Publishing, Collingwood, Vic. 258 pp. ISBN 0643091327 (hbk), 0643092986 (pbk).

Includes a substantial section on seed identification with photographs of more than 1200 species (but with a very strong Western Australian bias).

Weeds of Australia identification tool (ongoing?)

ELECTRONIC RESOURCE – ON-LINE, Interactive

<https://www.business.qld.gov.au/industry/agriculture/land-management/health-pests-weeds-diseases/weeds-and-diseases/weed-identification-tool>

An interactive key in the user-friendly Lucid system, with a wide set of search characters and states, covering more than 1,000 naturalised weedy species. Alongside other plant characteristics, eight seed characters are available to search on. Each taxon has an image gallery and a plain-English fact sheet with good descriptive and diagnostic detail.