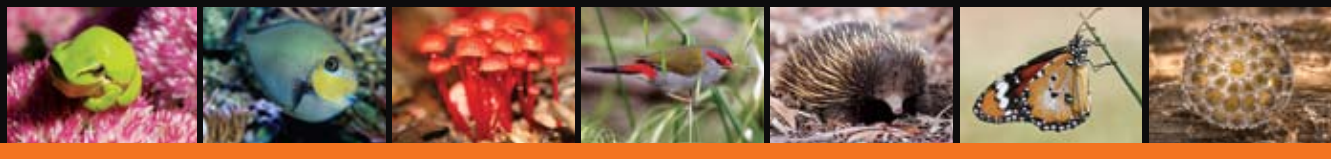
MorphBank

BIOLOGICAL IMAGES FOR SCIENCE

www.morphbank.ala.org.au

ATLAS OF LIVING AUSTRALIA



What is Morphbank?

Morphbank is an open source, non-commercial image management system for biological scientific images and related media.

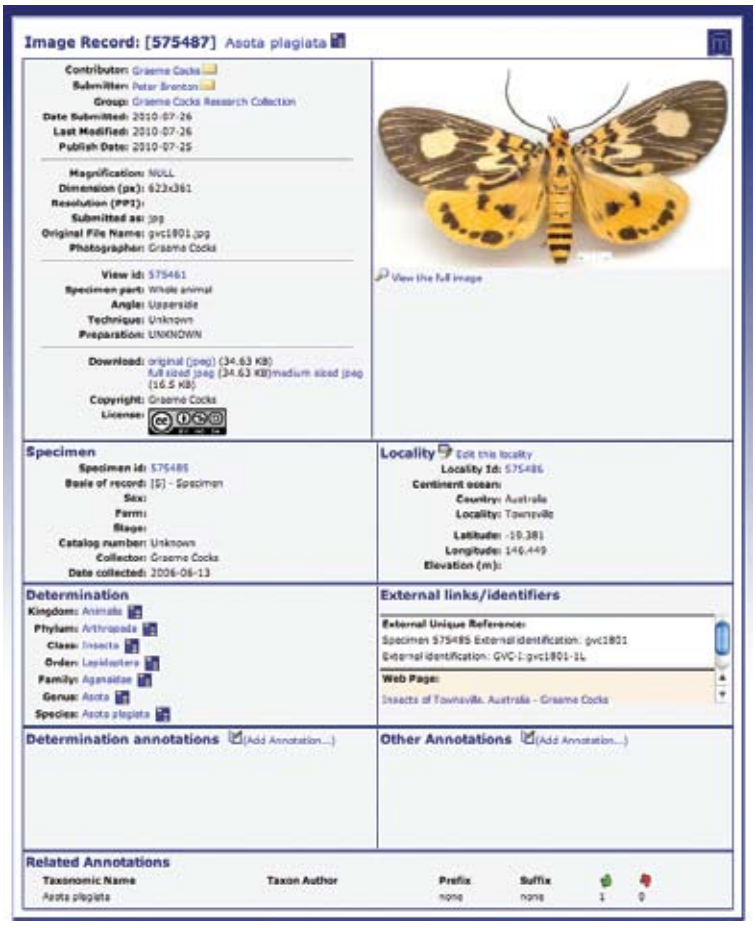
Morphbank assists scientific research by making it possible to store, discuss and share detailed images of specimens from all over the world. It can be used to sort and group images, and to create 'virtual collections'.

Originally designed for researchers to share scientific images, Morphbank has since expanded to encompass broader applications.

Currently, Morphbank holds about 300,000 images representing several thousand different species from around the world. Most of these images are publicly available, but some are held privately in the system until the contributing scientists are ready to publish.

Images stored in Morphbank can generally be freely downloaded and used for non-commercial purposes with the appropriate attribution and respect of copyright. Images are stored on a 'fair use' basis, using open source software and Creative Commons licensing.

Morphbank has 'nodes' in the USA and Sweden, both of which are used by an increasing number of scientists, researchers and educators for a wide variety of specimen-based research and educational purposes, including comparative anatomy, morphological phylogenetics, taxonomy and other biodiversity-related fields.



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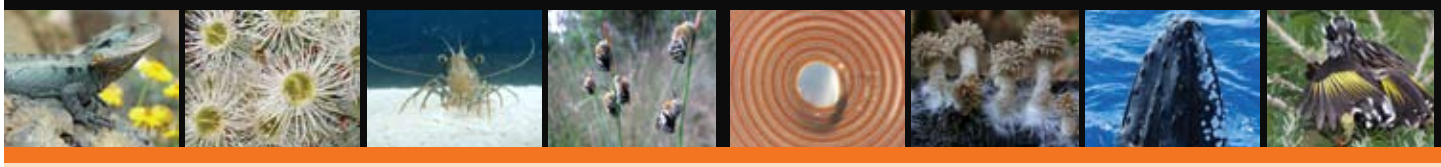
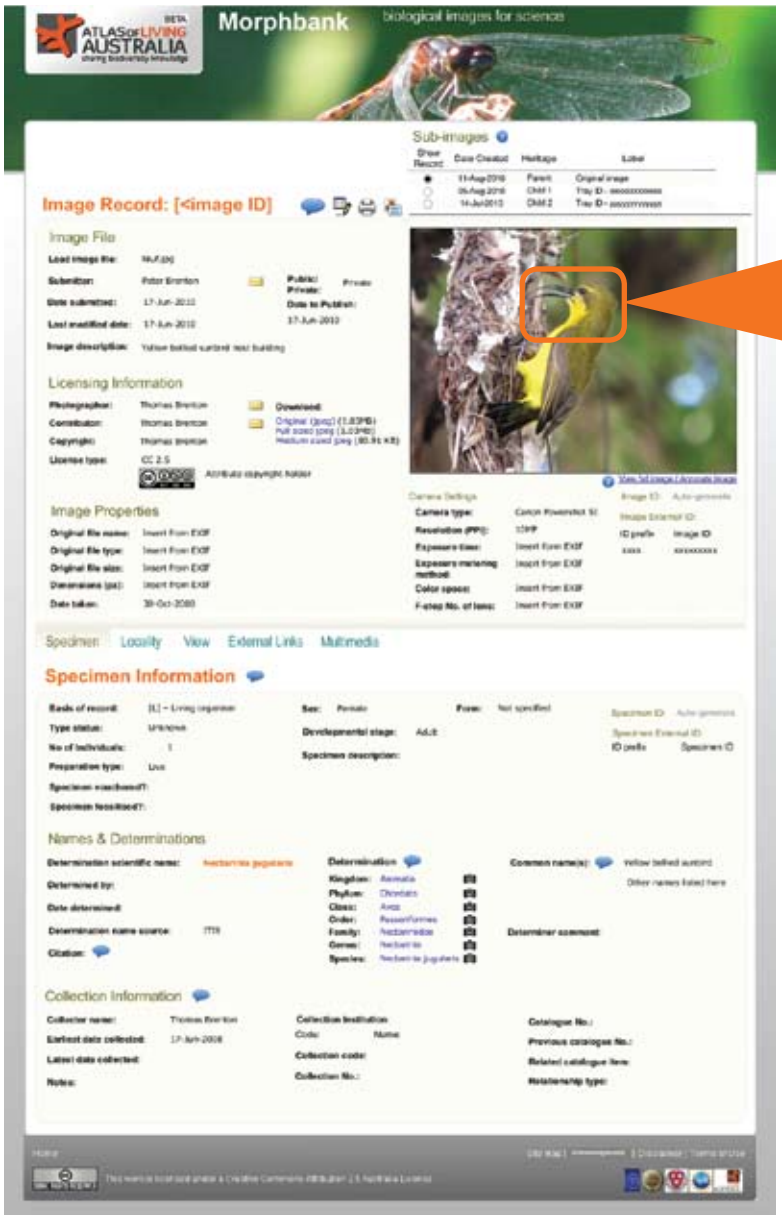


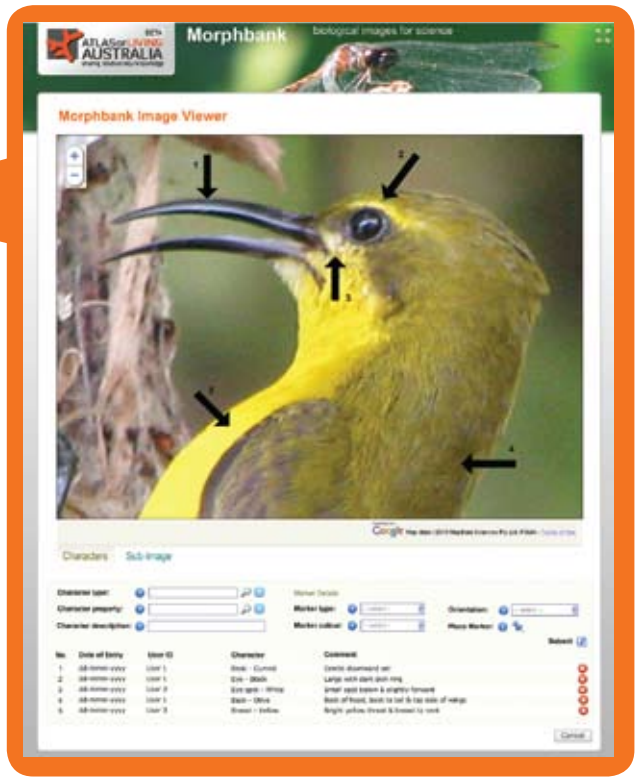
Background and Funding

Based at the Florida State University in Tallahassee, USA, Morphbank was developed in 1998 by a Swedish-Spanish-American consortium of entomologists and receives its main funding from the Biological Databases and Informatics program of the USA National Science Foundation.

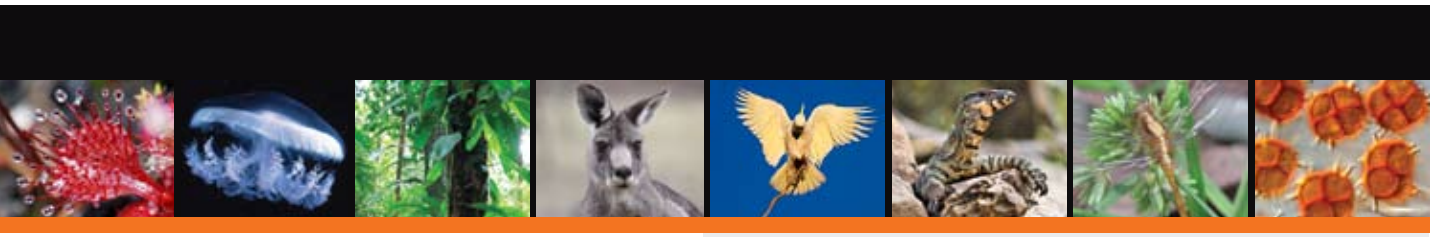
New development work on the system is also being supported by a number of other organisations including the Atlas of Living Australia and Harvard University.



Example of the image summary page in Morphbank v4.



Zooming viewer for Morphbank v.4.



Some Morphbank Features

Morphbank provides:

- flexibility in the sharing, editing and publication of images with secure editorial and access controls
- curatorial controls on the management of image collections
- recognition of photographers, image owners, contributors, and collection institutions
- storage and management of images from small-scale through to large-scale, including electron microscopy images, line drawings, specimen labels, specimen images, and photos of specimens in their natural environment
- standards-based metadata
- the ability to mark-up images with character traits or comments
- the ability to annotate different aspects of an image and/or it's metadata
- the ability to name specimens using current authoritative taxonomic checklists
- the ability to access images on all international Morphbank sites via peer-to-peer data synchronisation functionality
- stable links to image collections for use in online and traditional print publications
- links from Morphbank images to external resources
- spatial representation for images with geo- coordinates
- the ability to use collection slide-sorting functionality to illustrate characters or as a tool to effectively use images for character-based image discovery.

The Atlas of Living Australia – Morphbank Project

The Atlas of Living Australia, in partnership with Morphbank USA, is enhancing the system to meet the needs of Australian collections and Atlas users. These enhancements will also benefit Morphbank users around the world.

The Atlas node of Morphbank provides a free facility for image owners to store, manage and share their images and data relevant to Australian biological science. Researchers can store their images in Morphbank and confidently reference them in scientific papers and publications.

Images stored in the Atlas Morphbank will be accessible via the Atlas website, and where they have location information, they will contribute to the larger pool of specimen-based observational data available for scientific analysis.

> *"We have found Morphbank a useful tool in the FLYTREE project for disseminating high-quality images in varied file sizes and formats. ALA's development of a more user-friendly portal to Morphbank for Australian users is an exciting development. We look forward to using Morphbank to provide wider public and scientific access to images from Queensland Museum's collections."*
>
> **Geoff Thompson**, Collection Manager Entomology, Queensland Museum.

The Atlas–Morphbank project is being implemented in stages, beginning with an Australian instance of the current Morphbank (version 3) system and culminating in the release of Morphbank version 4 in September 2011.

Each stage will enhance the functionality of Morphbank and version 4 will implement a greatly improved user interface.

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Add your Images to Morphbank

The Atlas team is actively working with a number of Australian collection institutions to increase the amount of Australian content in Morphbank.

We also encourage all holders of image collections to add their collections to Australia's node of Morphbank, and are keen to work with collection managers to this end.

If you are a collection curator or image manager in a museum, herbarium, fungarium, or other biological collection, higher education institution, agricultural or conservation department, naturalist group, or a community scientist, please contact the Atlas and we can help you store and manage your images using Morphbank.

Contact atlasoflivingaustralia@csiro.au if you are interested in storing and managing your image collection in Morphbank-ALA.

Web Links

Morphbank Australia site:

www.morphbank.ala.org.au

www.ala.org.au/about/program-of-projects/morphbank/

Morphbank USA (parent site):

www.morphbank.net

FOR FURTHER INFORMATION

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Photo credits PAGE 1: **1** Eastern Dwarf Tree Frog, *Litoria fallax*, by MG Jefferies. **2** Vlamingii Tang Fish, *Naso vlamingii*, by Brian Gratwicke. **3** Ruby Bonnet fungi, *Mycena viscidocruenta*, by Arthur Chapman. **4** Red-browed Finch, *Neochmia temporalis*, by Leo Berzins. **5** Short-beaked Echidna, *Tachyglossus aculeatus*, by Leo Berzins. **6** Lesser Wanderer, *Danaus chrysippus petilia*, by MG Jefferies. **7** Butterfly egg, *Ogyris barnardi*, by Ken Walker, courtesy of Museum Victoria.

Photo credits PAGE 2: **1** Gippsland Water Dragon, *Physignathus lesueurii howittii*, by Leo Berzins. **2** Eucalypt flowers by John Tann. **3** Giant Tiger Prawn by CSIRO. **4** Blue-banded Bees, *Amegilla sp*, by John Tann. **5** Cyanobacterium, *Lyngbya majuscula*, by Ian Jameson, Australian National Algae Culture Collection, CSIRO. **6** Fungus, *Psathyrella echinata*, by David Catcheside. **7** Humpback Whale, *Megaptera novaeangliae*, by Michael Dawes. **7** Lesser Wanderer, *Danaus chrysippus petilia*, by MG Jefferies. **8** A pair of New Holland Honeyeaters, *Phylidonyris novaehollandiae*, in a Banksia, by Leo Berzins.

Photo credits PAGE 3: **1** Leaf of a small Drosera plant by Jean Hort. **2** Jellyfish, *Pseudorhiza haeckeli*, by K.L. Gowlett-Holmes, courtesy of South Australian Museum. **3** Rainforest tree and vine by Thomas Brenton. **4** Dragonfly by Thomas Brenton. **5** Sulphur-crested Cockatoo, *Cacatua galerita*, by Leo Berzins. **6** Lace Monitor (Goanna), *Varanus varius*, by Roger Smith. **7** Eastern Grey Kangaroo, *Macropus giganteus*, by Leo Berzins. **8** Teliospores of *Sphaerophragmium quadricellulare*. Scale bar = 10 µm. Photo courtesy of Queensland Plant Pathology Herbarium.

Photo credits PAGE 4: **1** Potters Wasp, *Abispa ephippium*, by Jean Hort. **2** Round Fruited Banksia, *Banksia sphaerocarpa*, by Jean Hort. **3** Beetle on flower of *Hakea varia*, by Jean Hort. **4** Gecko's eye by Jean Hort. **5** Fungus, *Aseroe rubra*, ©SJM McMullan-Fisher. **6** Swift Parrots, *Lathamus discolor*, are endangered. Photo by Leo Berzins. **7** Robber crab, *Birgus latro*, courtesy of DSEWPaC.

Designed by Mariana Rollgejser