Living atlas . . .
COMING TO A SCREEN NEAR YOU

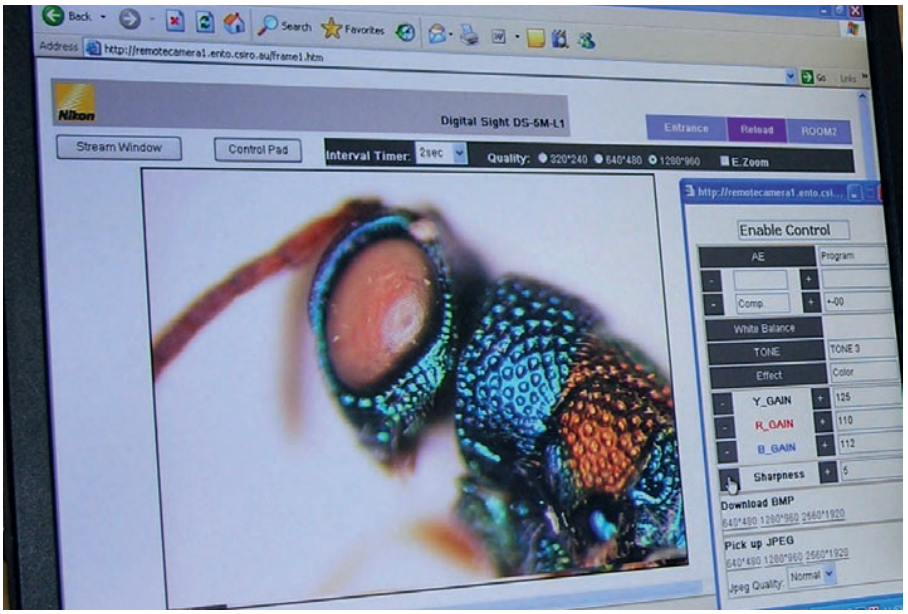
Universities, museums, CSIRO and government agencies are working together on a visionary program to link all existing data on Australia's life-forms into an online 'encyclopaedia of life' with single portal access. This Atlas of Living Australia (ALA) will enable scientists, policy-makers, planners and ordinary Australians to access biodiversity information at an unprecedented level of detail and scope.

Over the years an immense amount of data on Australia's biodiversity has been collected. But according to the Director of the ALA, Donald Hobern, much of this has been difficult to access because it is scattered in collections across the country and in various institutions.

Biodiversity encompasses all living species – animal and plant. Each species has a role to play, for example, in maintaining soil and water quality, ameliorating flood damage, or mitigating the impact of global warming. Biodiversity provides recreational and cultural value at the individual species level – flowers, birds, trees or whales – and at the broader ecosystem level, such as the Great Barrier Reef and Kakadu National Park.

However, in order to preserve Australia's unique biodiversity, we need comprehensive, easily accessible information on what is here, where it is and what is happening to it.

The ALA will unlock an estimated $1 billion worth of biodiversity resources held around Australian in biological collections and data held by CSIRO, state museums, universities, government departments and other biological collections.



The Atlas of Living Australia will provide easy online access to information on Australia's biodiversity. Michelle Glover

A cup moth caterpillar: ALA's online tools will enable users to collate all documented information on individual species. David McClenaghan

Donald Hobern says it will provide access to many of Australia's natural history collections and herbaria, ecological and observational data, images, online literature, diagnostic tools and molecular data. However the ALA is not just for experts. It will also offer a citizen science portal (see box).

ALA's online tools will enable users to identify species and map their distribution; collect and integrate information and comments from users; and link molecular data with other information on a species. Its search function will allow searches by species, topic or region. The ALA will also include links to international data sharing projects such as the Encyclopedia of Life (EOL).

In bringing together these diverse sets of data, ALA collaborators will have the opportunity to make all the information consistent by, for example, making sure coordinates are consistent with locality names; recognising data sets with low-precision coordinates; and ensuring the use of scientific names is consistent.

This will give users the opportunity to exclude dubious records or apply standard fixes for common problems. It will also make the information more reliable from a user's perspective.

Easy access to good biodiversity data will help in land use planning, as it will yield information on which species are present, whether they are at risk and how to restore their habitats. It will also be a valuable tool in dealing with biosecurity issues by providing information on what the species is, the risk of its spreading in Australia and how to control it.

Conservation and climate change are other important issues that Australia is dealing with. The ALA will be able to help with identifying which species will be affected by climate change, possible changes in their distributions, etc.

Funding for the five-year ALA project is provided under the Australian Government's National Collaborative Research Infrastructure Strategy (NCRIS).

More information:
Atlas of Living Australia, www.ala.org.au

Giant squid feeds data into Atlas

The giant squid that washed up on a Tasmanian beach in 2007. Tasmanian Museum and Art Gallery

In mid-2007, teams from the Tasmanian Museum and Art Gallery (TMAG) and the Tasmanian Parks and Wildlife Service collected a giant squid from Ocean Beach, Strahan. It was estimated that, when alive, it weighed over 200 kg and measured over 6 m (including the feeding tentacles).

Tissue samples were taken for DNA analysis and for other studies, with the hope they would reveal secrets of the animal's biology. Because observations on living giant squid are extremely rare, virtually everything known about these animals comes from the few specimens in Australian museums.

The ALA will allow all the information on these charismatic, yet poorly known, denizens of the oceans to be assembled in one place. TMAG is a partner in the ALA and holds important collections of both plants and animals.

Deputy Director of Collections and Research, Dr Andrew Rozefelds, says that as part of the ALA program, TMAG is putting its marine invertebrate data online, digitising its records on the mammal group that includes Tasmanian devils and quolls, and has digitised its cetacean (whale and dolphin) records. (See www.tmag.tas.gov.au/index.aspx?base=866)

Keeping track of 'citizen science' records

Around the country, many dedicated and enthusiastic community-based groups are collecting valuable biological information through projects such as ClimateWatch, RabbitScan, Birdata and the Great Australian Shark Count (*ECOS* 149, p10). Currently, the information they gather is not always readily accessible to people outside these groups, such as researchers, policy-makers and other naturalists.

The ALA can help to bring the information gathered by professionals and the information in these projects together to form a more comprehensive set of biodiversity data.

A group led by Piers Higgs from Gaia Resources in Western Australia is investigating ways in which the ALA can help some current citizen science projects gather and distribute their data using web-based tools. They will be using standards developed by the Biodiversity Information Standards group, an international not-for-profit group that develops standards and protocols for sharing biodiversity data.

Tom Weir insect collecting in Gregory National Park in the Northern Territory.
David McClenaghan