



Issue 5: October 2006

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Arnhem Sandstone Heath

Indigenous consultation in western Arnhem Land

In November 2005, the Arnhem Plateau Sandstone Heath was nominated for listing as an endangered ecological community under the *Environment Protection and Biodiversity Conservation Act 1999*. The ecological community occurs entirely on Aboriginal owned and managed land in the Northern Territory.

In order to consult appropriately with the traditional owners and achieve technical outcomes in terms of defining the ecological community in a culturally appropriate way, the Department decided to participate in a 'walk on country' with the traditional owners and scientists on the Arnhem Plateau.

The Northern Land Council, through its Caring for Country program, runs these walks to take the traditional owners back to their country. They combine reconnecting people with their country, teaching young people about country and how to manage it, developing relationships between traditional owners and scientific researchers, and carrying out land management activities (particularly early dry-season patch burning).

It was suggested that the Department's participation in one of these walks would be an ideal way of establishing contact with the relevant traditional owners and discussing definitions of the ecological community with them in the context of that landscape.

The walk on country and associated consultation took place from 13 to 22 June 2006 in remote areas of Western Arnhem Land.

Forty-one walkers set out on the walk, ranging in age from a 1 year old to people in their late 50s, most of whom were Aboriginal. Elders were flown in by helicopter each night to camp with the

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walkers. In general, the pattern was walking for a day, then spending the next day fishing and talking, then walking the next day and so on. Towards the end of the walk, three members of the Threatened Species Scientific Committee: Mr Guy Fitzhardinge, Professor Gordon Grigg and Dr John Woinarski joined the walkers.

Two consultation sessions about the ecological community nomination were held during the course of the walk. The first session allowed the traditional owners and managers to develop an understanding of the nomination and the implications of listing. They then had five days to consider and discuss the issues raised before the final session.

Both consultation sessions were conducted largely in the Kunwinjku language. Discussions ranged broadly over a number of topics, with particular emphasis on the interrelationship between the social and environmental issues facing the Arnhem Plateau.



Arnhem Plateau - H Mills

(inset) Arnhem Sandstone - H Mills

At the end of the final consultation, participants were asked whether or not they would support a listing of Arnhem Plateau Sandstone Heath by the Australian Government and they were enthusiastic in their support.

Threats to the ecological community were also discussed during the consultation session. In particular, it was identified that the sandstone heath ecological community is threatened by the replacement of traditional fire regimes with broadscale, intense, dry-season fires. The depopulation of the Arnhem Plateau means that traditional fire regimes no longer occur. Essentially, the country is sick because it has lost its people. This was a key point that emerged in the consultation and will be an important frame of reference for any post-listing information products and activities. While it was acknowledged that we can't go back to the past, people are

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considering options which combine traditional knowledge and practices with modern technology and funding processes. This is already taking place to a certain degree.

The 'Walk on Country' proved to be highly successful, not only in terms of meeting the outcomes required for the assessment of the Arnhem Plateau Sandstone Heath nomination, but also in achieving good social and land management outcomes. The burning work done during the walk, while limited in area, will be important for reintroducing patchiness into the fire landscape of the area. The connections made between people during the walk were also important, and hopefully enduring, outcomes.

After the walk on country, the assessment of the Arnhem Plateau Sandstone Heath nomination can continue in the knowledge of strong support from many traditional owners.

Lowland Native Grasslands of Tasmania

Technical workshop



Themeda Grassland - Tasmanian Department of Primary Industries and Water

(inset) Poa Grassland - P Komidar

The Lowland Temperate Grasslands of Tasmania ecological community has been nominated for listing as an endangered ecological community under the *Environment Protection and Biodiversity Conservation Act 1999*.

The nominated ecological community is comprised of two temperate grassland vegetation communities: *Poa labillardieri* Lowland Grassland and *Themeda triandra* Lowland Grassland. The ecological community typically occurs below 600 m above sea level in the Tasmanian Midlands, Derwent Valley, east coast and south-east Tasmania as well as on Flinders and Cape Barren Islands.

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As part of the assessment process, a technical workshop was held in April 2006 in Hobart to obtain expert opinion on the definition and condition thresholds for the nominated ecological community.

Workshop participants proposed that an appropriate name for the ecological community would be Lowland Native Grasslands of Tasmania. They confirmed that the ecological community consists of the following two components:

- The Lowland *Poa labillardierei* Grassland which is generally species-poor and occurs on alluvial river flats as well as on gentle slopes. It generally occupies moister sites that may be prone to flooding. It is a treeless community characterised by tussocks of *P. labillardierei* with herbs and smaller grasses in the inter-tussock spaces. The *P. labillardierei* tussocks may be large and spreading or small and tufty depending on the situation.
- The Lowland *Themeda triandra* Grassland which is floristically diverse with many inter-tussock herbs. It occurs on treeless valley flats and well-drained slopes on basalt, dolerite and deep sands. Other common grasses in this grassland include *Austrodanthonia*, *Austrostipa* and *Poa*. It includes the sub-coastal grasslands community co-dominated by *P. rodwayi* in north-western Tasmania.

Small areas of other native vegetation communities can occur in a mosaic with the Lowland Native Grasslands of Tasmania ecological community. The main associated communities include: Lowland Sedgey Grassland; Rockplate Grassland; Lowland Grassland Complex; and *Bursaria-Acacia* Woodland and Scrub.

Workshop participants also agreed that the Lowland Native Grasslands of Tasmania ecological community can include both natural and disturbance-induced native grassland. Mosaics which consist of patches of *Poa*, *Austrostipa* and/or *Austrodanthonia* should be considered a part of Lowland *P. labillardierei* Grassland and assessed against the *Poa* Grassland thresholds. Mosaics which consist of patches of *Themeda*, *Austrostipa* and/or *Austrodanthonia* should be considered a part of Lowland *T. triandra* Grassland and assessed against these thresholds.

The condition thresholds identify good quality patches of the Lowland Native Grasslands of Tasmania ecological community on the basis of species richness, perennial weed cover and the presence of indicator species. In some cases, separate thresholds are given for the two components of the ecological community.

The nomination and outcomes of the technical workshop including condition thresholds are open for public comment and available at

www.deh.gov.au/biodiversity/threatened/nominations/tasmanian-lowland-grasslands.html

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Victorian Western Basalt Plains Grassy Woodland

Technical workshop



Western Basalt Plains Grassy Woodland - P Komidar

(inset) Kangaroo Grass in Western Basalt Plains Grassy Woodland - P Komidar

The Department of the Environment and Heritage is currently assessing the Victorian Western Basalt Plains Grassy Woodland, which was nominated for listing as a critically endangered ecological community.

The Victorian Western Basalt Plains Grassy Woodland is a type of open grassy woodland that is typically dominated by River Red Gum (*Eucalyptus camaldulensis*) with a scattered shrub layer and a ground layer of grasses and herbs. The dominant presence of River Red Gum in a non-riverine context is a unique feature of this ecological community.

A technical workshop was held in Melbourne with scientific experts to determine the definition and condition classes for this ecological community. The nomination only considered the ecological community in the Port Phillip-Westernport area. Workshop participants, however, agreed that similar grassy woodlands occur throughout the Western Basalt Plains that extend from Melbourne west towards Hamilton.

The Victorian Western Basalt Plains Grassy Woodland ecological community was defined by technical workshop participants as patches of woodland on Quaternary basalt soils with a canopy crown cover of 5-30% for mature trees, extending to 70% where regenerating trees less than 5 metres tall are present.

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Good quality sites of the ecological community are represented by a reasonably intact native ground layer as indicated by the following parameters:

- At least half of the native perennial ground layer cover is represented by one or more of the native grasses, *Themeda*, *Austrodanthonia*, *Austrostipa*, *Poa* and/or *Microlaena*.
- If this is not the case, then the patch would need to be a valuable native wildflower site with at least 50% of the ground layer cover represented by native dryland forbs during spring-summer.
- Alternatively, the site should not be heavily invaded by perennial weeds. Perennial weeds should comprise less than 70% of the ground layer cover. Where perennial weeds comprise more than 70% of the ground layer cover, the patch must have more than ten native perennial species per 100 m² and a density of at least three big trees per hectare.

It is important to note that the outcomes from the technical workshop represent the collective views of the workshop participants and as such reflect one input to the complex nomination assessment process. Release of this report does not imply endorsement of its contents by the Threatened Species Scientific Committee.

The report for this technical workshop is now available for public comment and can be downloaded at: www.deh.gov.au/biodiversity/threatened/nominations/western-basalt-grassy.html

Non-marine wetland ecological communities

Workshop



Thrombolites at Lake Clifton, Peel-Yalgorup System Ramsar Wetland, WA - M Butz

(inset) *Triglochin* sp. at Bool and Hacks Lagoon Ramsar Wetland, SA - M Birrell

One of the key issues when considering the listing of wetland ecological communities is how to adequately define them? Secondly, how can you describe and apply condition criteria? Aquatic



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systems are subject to rapid condition change, and it is not certain that the knowledge exists to allow the assessment of condition in these systems.

With this in mind the Department held a non-marine wetland ecological communities internal workshop in July 2006 to discuss their classification and to explore matching classifications to threats.

Only one nationally agreed and applicable classification system, covering all wetland ecological communities, was identified; the updated Wetland Classification System for *A Directory of Important Wetlands in Australia* (DIWA classification system), which is a modified form of the Ramsar classification system. Details of the DIWA classification system can be found at: www.deh.gov.au/water/wetlands/database/directory/pubs/ch2.pdf

Whilst there are a number of more detailed classification systems in use for rivers, none of these are nationally agreed or nationally applicable. For estuaries there is the Australian Estuarine Database which contains classifications for over 700 large Australian estuaries. The Australian Estuarine Database is at: www.ozestuaries.org

Further information needed to define and describe non-marine wetland ecological communities includes:

- geographic boundaries (e.g. bioregion, catchment and basin);
- abiotic/climatic variables (e.g. rainfall, salinity, temperature and oxygen levels);
- biota (e.g. vegetation, fish, microbial, macro invertebrate communities and other indicator species or groups); and
- more specialised and localised classifications, such as those based on more detailed hydrogeomorphic descriptions (e.g. River Styles or the Qld Wetland Inventory Classification).

The Department is undertaking other projects that may provide useful input to a classification system for non-marine wetland ecological communities. These include:

- a review and analysis of existing Australian Government, State and Territory policy, legislative and planning frameworks currently used to identify, classify and manage high conservation value aquatic ecosystems; and
- the development of an appropriate bio-regionalisation framework for aquatic ecosystems. The investigation phase will include the use, or modification, of the Interim Biogeographic Regionalisation for Australia.



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The workshop was unable to develop a comprehensive and meaningful matrix of threats impacting on specific DIWA classes because most threats would apply across many DIWA classes. Further sources of potential 'threat matrix' information include:

- a compilation of threats to water regimes for 231 Australian wetlands of national and international importance (the list is at: www.deh.gov.au/water/rivers/nrhp/wetlands/chapter1.html); and
- the National Land and Water Audit website and its Australian Natural Resources Atlas & Database (see www.nlwra.gov.au).

The Department will update the Threatened Species Scientific Committee on the project to develop an appropriate bio-regionalisation framework for aquatic ecosystems at subsequent committee meetings.

EPBC Act Compliance

EPBC Act Compliance audit programme rolling out now

From late 2006, the Department of the Environment and Heritage will be undertaking a compliance audit programme of projects referred under the *Environment Protection and Biodiversity Conservation Act 1999* (the Act).

Under the Act, actions which are likely to have a significant impact on matters of national environmental significance must be referred to the Minister for the Environment and Heritage for assessment and approval.

The action is then designated as one of the following:

- Controlled Action
- Not-controlled Action
- Not-controlled Action-Particular Manner.

Projects assessed as 'Controlled Action' are usually approved on the basis that the proponent complies with certain conditions.



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'Not-controlled Action-Particular Manner' decisions occur where the Minister decides that the action will be taken in a manner that will ensure the action will not have an adverse impact on the matter protected.

Substantial penalties apply for failure to be consistent with the manner specified or conditions of approvals.

Audits will examine information submitted as part of referral and assessment processes. For projects approved with conditions, audits will also look at the approval conditions.

Audits will be conducted on projects across all areas including mining and energy, government, transport, ports and marine, urban development, tourism and recreation.

Why audit?

The Department conducts audits as part of a systematic approach to measuring and improving EPBC Act compliance. Auditing allows the Department to:

- Gain information on levels of EPBC Act compliance and performance.
- Better protect matters of national environmental significance.
- Reduce the risk of serious non-compliance issues arising inadvertently through early intervention.
- Increase community confidence in the regulatory system through demonstrating that compliance measurement and improvement is taking place.

How will the audits be carried out?

Audits will be carried out in a variety of ways, including site inspections, desktop reviews, and interviews. The Department will work cooperatively with State agencies to undertake joint audit of projects where it is appropriate and relevant.

Following an audit, a summary report will be provided to the proponent outlining the findings of the audit and any corrective actions that may be required.

Information regarding audit activity will be posted on the internet. Selected audit outcomes will also be publicised through environmental industry and general media to promote best practice behaviour within the regulated community.

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Audit principles

The Department will adhere to the following principles when conducting audits:

- **Independence:** auditors should be independent of the activity being audited and free from bias and conflict of interest. They should maintain objectivity throughout the audit process to ensure that the audit findings and conclusions will be based only on the audit evidence.
- **Best practice:** auditors must carry out audits consistent with best practice procedures and standards.
- **Ethical conduct:** auditors must act in a professional manner and demonstrate trust, integrity, confidentiality and discretion.
- **Fairness:** auditors should present their findings, audit conclusions and audit reports truthfully and accurately. Problems encountered between the audit team and the auditee should be reported.
- **Due diligence:** auditors should exercise care when undertaking their work and respect the confidence placed in them by auditees and other interested parties. They must demonstrate the necessary level of competence, discretion and judgment.

For further information on the audit program, please contact:

The Director

Compliance and Audit Section
Department of the Environment and Heritage
GPO Box 787
Canberra ACT 2601

Email: compliance@deh.gov.au

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Conservation Management Information/Networks

National Vegetation Information System



(above) *Melaleuca* woodland, Kadadu National Park, Northern Territory - M Fagg

(below) *Callitris glaucophylla* woodland, Snowy River National Park, Victoria - M Fagg

The Australian Government has recently released a number of new native vegetation mapping products based on a 2005 update to the National Vegetation Information System (NVIS). The NVIS is the most detailed, up-to-date and accurate information source on Australia's native vegetation, and has been collated through the active participation of all Australian state and territory governments. The new information products have been developed by the Department of the Environment and Heritage for use by researchers, educators and natural resource managers.

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Key information products available free to the public include:

- general descriptions of vegetation types across the continent, including coloured maps, tables and graphs;
- downloadable geographic information system (GIS) datasets of estimated pre-1750 and present Major Vegetation Groups (MVGs) covering Australia;
- web-based maps available through the Australian Natural Resources Atlas Map Maker;
- more detailed information in regions where mapping is complete; and
- NVIS guidelines for surveying, classifying and mapping vegetation.

Details of these products can be accessed online at www.deh.gov.au/erin/nvis.

Free copies of the 2006 NVIS map of Major Vegetation Groups in Australia and brochure are available by post. Simply email your request to ciu@deh.gov.au or call **1800 803 772**.

News from around Australia

Monitoring Threatened Flora Workshop

Hot on the heels of the recent success of the Orchid Recovery Team in the Banksia Awards, a one day workshop on monitoring protocols for threatened flora populations was held at the Arthur Rylah Institute for Environmental Research, Victoria, in August. The workshop was convened to promulgate the findings of a project funded by the Australian Government Department of the Environment and Heritage (through the Natural Heritage Trust), and the Victorian Department of Sustainability and Environment. It followed on from a 2-day threatened species conference aimed at providing DSE Regional staff with an opportunity to discuss the many successes and challenges involved in threatened species management.

"The monitoring workshop was designed for staff with management or monitoring responsibilities for threatened flora populations in Victoria" said workshop convenor, Mike Duncan. "It covered the decision making process in relation to monitoring from the discovery of a threatened flora population to its eventual salvation".

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Curly Sedge (*Carex tasmanica*) - P. Komidar

Topics discussed on the day included:

- Identification of Knowledge Gaps
- Determination of Monitoring Parameters
- Design and Establishment of a Monitoring Program
- Data Collection, Management and Analysis
- Review, Refinement and Completion of a Monitoring Program

The workshop also included a demonstration of a new population viability analysis tool developed by ARI, which better deals with unobservable states, such as dormancy in orchids', said Fiona Coates, a principal participant in the models development.

Ecology across the Tasman

Ecology Across the Tasman, the NZ Ecological Society and the Ecological Society of Australia joint conference was recently held in Wellington, New Zealand. One of the symposia, Ecology and the Law, was sponsored by the Department of the Environment and Heritage. Speakers included Justice Brian Preston, Chief Judge of the Land and Environment Court of New South Wales, who spoke about the role of the judiciary in promoting sustainable development through principled sentencing for environment offences. Marta Lang, from the New Zealand Department of Conservation discussed the objectives of area-based protection tools in New Zealand's marine law. Sarah Bekessy, from the Royal Melbourne Institute of Technology, presented information on the model she and colleagues developed to study the impacts of timber production on the Tasmanian Wedge-tailed Eagle and her experience as an expert witness in the Federal Court case *Bob Brown v Forestry Tasmania*. Other speakers in this session examined recovery planning and the role of taxonomy in controlling the introduction of new organisms.

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A nationally threatened herb *Euphorbia glauca* found at only one wild site in Wellington, New Zealand - C Barton

(inset) A nationally endangered shrub *Muehlenbeckia astonii* (in background), Wellington, New Zealand - C Barton

A number of field trips were held during the conference, including a Threatened Plants Tour in and around Wellington demonstrating innovative ways to manage threatened plants. An example of this is the replication of wild populations onto traffic islands in the metropolitan area. Native plants grown in traffic islands are used as:

- insurance populations in case the wild population is destroyed;
- a research and educational resource;
- a source of seeds and plants for use in species recovery work in the wild; and
- an advocacy tool to promote the region's rare plant life.

More information about the conference and the full programme can be found at <http://www.vuw.ac.nz/ecology06/>

Wildlife in urban bushland fragments in Brisbane

(Reprinted in part with permission from an article by Wendy Pyper in ECOS, Australia's magazine on sustainability)

A recent community survey about wildlife in 38 urban bushland fragments in Brisbane has yielded some interesting findings: a high appreciation and tolerance for wildlife - including 'nuisance' species - among neighbouring residents; a wealth of local knowledge; and a need for further education. The results provide insights into the value of community knowledge and opinion in understanding the dynamics of human-wildlife interactions and how best to manage these.

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Survey author Dr Sean FitzGibbon, of the University of Queensland, says community surveys are a useful adjunct to traditional wildlife survey techniques, such as trapping and tagging as they draw on residents' historical knowledge, can highlight the presence of animals missed by traditional methods and provide a way of incorporating public opinion into management decisions.



Green tree frog (*Litoria caerulea*) - E Meyer

(inset) Northern brown bandicoot (*Isodon macrourus*) - E Meyer

'The aim of this survey was to employ community knowledge of wildlife to examine the abundance and distribution of bandicoots and other species of interest in Brisbane's urban bushland fragments, and to gain insights into how these may have changed over the past 30-45 years,' FitzGibbon says.

'Lack of habitat and habit connectivity are the biggest issues facing urban wildlife. To manage this we need to increase people's awareness of the issues and look at ways to improve urban design and how we interact with our greenspaces,' FitzGibbon says.

FitzGibbon hopes the research will not only aid wildlife and habitat conservation, but that it will stem the trend towards humankind's 'extinction of experience' of the natural world.

For further information see the full article in ECOS 131, June - July 2006

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Upcoming Events/Conferences

- International Landcare Conference - Landscapes, lifestyles and livelihoods (8-11 October 2006 Melbourne)
- 2006 Fenner Conference on the Environment: Integrating Agricultural and Environmental Imperatives for a Profitable and Sustainable Future (8-9 November 2006 Canberra)
- Australian Environmental Law Enforcement & Regulators Conference (incorporating the 19th Australian Wildlife Law Enforcement Conference) (22-24 November 2006 Sydney)
- Plantations: Are they equivalent habitat to native forests? (11 December 2006 University of Western Sydney - Parramatta Campus)
- 49th Annual Conference of the International Association for Vegetation Science, 'New Zealand: New home; new habitat! new ideas?'. (12-16 February 2007, Palmerston North, New Zealand)
- First National Forum of the Australian Network for Plant Conservation: What lies beneath? The role of soil biota in the health and rehabilitation of native vegetation (17-19 April 2007 Canberra)
- Biodiversity: Balancing Conservation and Production Case Studies from the Real World (26-28th June 2007 University of Tasmania, Launceston)
- The Biodiversity Extinction Crisis, a Pacific and Australasian response: the Australasian section of the Society for Conservation Biology inaugural regional meeting of conservation scientists and practitioners. (10-13 July 2007, UNSW, Sydney)
- International Association for Ecology (INTECOL) The 10th International Congress of Ecology (August 2009, Brisbane) (Hosted by The Ecological Society of Australia in partnership with The New Zealand Ecological Society)