

## **Technical Workshop Report**

# **Natural Grassland on basalt and fine-textured alluvium of the Brigalow Belt North IBRA Bioregion and the Claude River Downs**

**Toowoomba NSW  
9 – 10 November 2006**



Photo: DEWHA

## 1. BACKGROUND

Technical workshops are a mechanism to obtain expert opinion on the nature and extent of an ecological community nominated for listing under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). They are attended by biologists, conservation managers and landholders with expertise in the particular ecological community and/or region involved.

Workshops should be considered an early step in the nomination assessment process. Considerable additional work is required before the Threatened Species Scientific Committee (the Committee) is in a position to provide the Minister for the Environment, Heritage and the Arts with sound scientific advice on whether or not the nominated ecological community qualifies for listing under the EPBC Act. More information about the nomination assessment process can be obtained at: [www.environment.gov.au/biodiversity/threatened/nominations.html](http://www.environment.gov.au/biodiversity/threatened/nominations.html)

The technical workshop was held on 9-10 November 2006 in Toowoomba, NSW.

It is important to note that the report on the outcomes from a technical workshop represents the collective views of the workshop participants and reflects 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 Committee welcomes the views of experts, stakeholders and the general public on this report to further inform its nomination assessment process. To assist in this matter, the Committee has identified a series of specific questions on which it seeks particular guidance. These are at the end of this report.

## 2. THE ECOLOGICAL COMMUNITY UNDER ASSESSMENT

This technical workshop was held to review the threatened 'Bluegrass (*Dichanthium spp.*) dominant grasslands of the Brigalow Belt Bioregions (North and South)' ecological community, that was listed as endangered under the EPBC Act on the 4<sup>th</sup> of April 2001.

The nomination for the 'Natural Grassland on basalt and alluvium of the Brigalow Belt North IBRA Bioregion and the Claude River Downs' was prepared following this technical workshop.

The agenda for this workshop, to review the Bluegrass ecological community listing, centred on discussions of:

- The extent and nature of the grasslands to be re-considered;
- Boundaries to be drawn between and around these grasslands;
- Descriptions and definitions of one or more ecological communities for listing; and,
- Condition thresholds for these ecological communities.

### 3. TECHNICAL WORKSHOP OUTCOMES

#### Recommendations for Two Ecological Communities

The workshop concluded that:

- The description should not be limited to grasslands dominated only by Bluegrass (*Dichanthium* spp.);
- Two ecological communities should be defined, with a north / south division because of the climatic driver (marked wet summer and dry winter in the North);
- The Claude River Downs sub-region of Brigalow Belt South IBRA Bioregion should be part of the northern ecological community, because the ecological community in this sub-region is more comparable to that in the Brigalow Belt North IBRA Bioregion, than to that in the rest of the Brigalow Belt South IBRA Bioregion; and,
- The southern ecological community should extend into New South Wales.

With regard to **the southern ecological community**, another workshop was necessary to clarify its definition and extent, particularly in NSW. A subsequent technical workshop was held in Tamworth (in November 2007) and is the subject of a separate technical workshop report.

Following the workshop in Tamworth the Department sought further technical input, on the northern ecological community. This resulted in a revised set of condition classes that is consistent across the northern and southern ecological communities.

This technical workshop report focuses on **the northern ecological community**.

#### Definition

##### *Name*

Natural Grassland on basalt and fine-textured alluvium of the Brigalow Belt North IBRA Bioregion and the Claude River Downs.

##### *Geographic Distribution*

The national extent of the ecological community is limited to the following IBRA Bioregions or subregions:

- Brigalow Belt North - All subregions; and,
- Brigalow Belt South - Sub-regions BBS1 (Claude River Downs)

##### *Geomorphology*

The grassland usually occurs on flat, or gently undulating Quaternary alluvial plains (geologically young areas associated with rivers and creeks), including back-plains, terraces, low levees and back-swamps. The soils are usually cracking clays, are often self mulching, usually deep (greater than 150 cm) and range in colour from dark grey-brown to grey or black.

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## Vegetation

These are natural grasslands typically composed of a mixture of forbs and native grasses. The ecological community recommended for listing will include three or more of the following perennial native grass indicator species:

*Aristida latifolia*;  
*Aristida leptopoda*;  
*Astrelba elymoides*;  
*Astrelba lappacea*;  
*Astrelba squarrosa*;  
*Bothriochloa erianthoides*;  
*Dichanthium queenslandicum*;  
*Dichanthium sericeum*;  
*Eriochloa crebra*;  
*Panicum decompositum*;  
*Panicum queenslandicum*;  
*Paspalidium globoideum*; and,  
*Thellungia advena*.

Note, that in a poor season, the only visible evidence of natural grassland may be scattered tussocks that cannot be identified as any particular species.

The perennial grass component was chosen as the primary indicator based on their prominence and utility as indicators. Common forb species which may also be present include *Commelina ensifolia*, *Corchorus trilocularis*, *Ipomoea lonchophylla*, *Vigna lanceolata*, *Vigna radiata*, *Desmodium campylocaulon*, *Neptunia gracilis*, *Psoralea tenax*, *Rhynchosia minima*, *Crotalaria dissitiflora*, *Glycine latifolia* and *Hibiscus trionum* var. *vesicarius*.

Where present, trees are of variable species composition but the ecological community recommended for listing contains no more than 10% projected tree crown cover. If it can be demonstrated, beyond reasonable doubt, that the grassland was derived from a cleared woodland then it is not part of the ecological community recommended for listing.

The ecological community, as defined, covers the following Regional Ecosystems as recognised by the Qld Herbarium at December 2005:

- RE 11.3.21 *Dichanthium sericeum* and/or *Astrelba* spp grassland on alluvial plains - Cracking clay soils; and,
- RE 11.8.11 *Dichanthium sericeum* grassland on Cainozoic igneous rocks.

The ecological community may also include:

- RE 11.4.4 *Dichanthium* spp, *Astrelba* spp grassland on Cainozoic clay plains; and,
- RE 11.4.11 *Dichanthium sericeum*, *Astrelba* spp and patchy *Acacia harpophylla*, *Eucalyptus coolabah* on Cainozoic clay plains;

but this is subject to confirmation by expert ecologists.

Certain grassland REs that occur in the Brigalow Belt North bioregion are excluded from the proposed ecological community because their substrates (& hence soil types) and/or component species are different. The excluded REs are:

- RE 11.3.31 *Ophiuros exaltatus*, *Dichanthium* spp grassland on alluvial plains;
- RE 11.8.10 *Themeda triandra* grassland on Cainozoic igneous rocks;

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- RE 11.9.3 *Dichanthium* spp, *Astrebla* spp grassland on fine-grained sedimentary rocks;
- RE 11.9.12 *Dichanthium sericeum* grassland with clumps of *Acacia harpophylla* on fine-grained sedimentary rocks; and,
- RE 11.11.17 *Dichanthium sericeum* grassland on old sedimentary rocks with varying degrees of metamorphism and folding.

### **Condition Classes**

A condition class describes areas of an ecological community that have a similar conservation value. Condition can be determined by factors such as: Numbers and types of native plants and animals present; the level of weed invasion; the size of an area; and distance to the next area of native vegetation. Significantly degraded areas will not be part of the listed ecological community. This means the protection provisions of the EPBC act will be focused on the most valuable elements of Australia's natural environment, while degraded areas, which do not trigger the "significant test" of the EPBC act, will be largely excluded.

### *Thresholds*

The condition thresholds for the northern ecological community are set out a Table 1, on page 6. The listed ecological community will cover only the highest quality and good quality patches of the ecological community, as identified by the first two columns, both labelled 'Listed' in Table 1, on page 6. Degraded patches, whilst not listed, will remain amenable to environmental funding priorities to enable their recovery to a listable state.

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Table 1: Condition Classes for the Natural Grasslands on basalt and fine-textured alluvium of the Brigalow Belt North IBRA Bioregion and the Claude River Downs.				
Quality	<b>LISTED (HIGHEST QUALITY)</b>	<b>LISTED (GOOD QUALITY)</b>	<b>NOT LISTED (Degraded)</b>	<b>NOT LISTED (Severely Degraded)</b>
<b>Patch Size</b>	At least 1ha; <b>And</b>	At least 5ha; <b>And</b>		
<b>Grasses</b>	<b>At least 4</b> native perennial grass species from the list of perennial native grass indicator species; <b>And</b>	<b>At least 3</b> native perennial grass species from the list of perennial native grass indicator species; <b>And</b>	<b>Only 1 or 2</b> native perennial grass species from the list of perennial native grass indicator species; <b>Or</b> <b>At least 3</b> native perennial grass species from the list of perennial native grass indicator species; <b>And</b>	<b>At least 1</b> native perennial grass species from the list of perennial native grass indicator species; <b>And</b>
<b>Woody shrub cover</b>	Total projected canopy cover of shrubs (i.e. woody plants more than 0.5m tall) is <b>less than 30%</b> ; <b>And</b>	Total projected canopy cover of shrubs (i.e. woody plants more than 0.5m tall) is <b>less than 50%</b> ; <b>And</b>	Total projected canopy cover of shrubs (woody plants more than 0.5m tall) is <b>50% or more</b> ; <b>Or</b>	
<b>Tussock Cover</b>	An <u>average</u> of <b>at least 20</b> native grass tussocks per 100 m <sup>2</sup> ; <b>And</b>	An <u>average</u> of <b>at least 20</b> native grass tussocks per 100 m <sup>2</sup> ; <b>And</b>	An <u>average</u> of <b>less than 20</b> native grass tussocks per 100 m <sup>2</sup> ; <b>Or</b>	An <u>average</u> of <b>less than 3</b> native grass tussocks per 100 m <sup>2</sup> ; <b>Or</b>
<b>Weeds</b>	Perennial non-woody introduced species are <b>less than 5%</b> of the total projected perennial plant cover.	Perennial non-woody introduced species are <b>less than 30%</b> of the total projected perennial plant cover.	Perennial non-woody introduced species are <b>30% or more</b> of the total projected perennial plant cover.	<u>Non-woody</u> introduced species are <b>75% or more</b> of the total <u>projected plant</u> cover.
<b>Sampling Area</b>	A minimum area of 0.1ha (e.g. 50m X 20m quadrat) selected from within the area with the most native perennial grass species.			
<b>Time of assessment</b>	Where possible, assessments should be undertaken during a good season, allowing for a two month spell after the cessation of disturbance (fire/grazing) <b>and</b> no more than 2 months after effective rain.			
<b>Perennial native grass indicator species</b>	<i>Aristida latifolia</i> ; <i>Aristida leptopoda</i> ; <i>Astrelba elymoides</i> ; <i>Astrelba lappacea</i> ; <i>Astrelba squarrosa</i> ; <i>Bothriochloa erianthoides</i> ; <i>Dichanthium queenslandicum</i> ; <i>Dichanthium sericeum</i> ; <i>Eriochloa crebra</i> ; <i>Panicum decompositum</i> ; <i>Panicum queenslandicum</i> ; <i>Paspalidium globoideum</i> ; or, <i>Thellungia advena</i> .			

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**Questions**

1. Do you consider the proposed **name** to be adequate? If not, can you suggest a suitable alternative?
2. Do you have any comments on the proposed **definition** and **distribution** of the ecological community as determined above?
3. Is this ecological community, as defined by its soil type / substrate and list of indicator perennial native grass species, able to be **distinguished from other grasslands**?
4. Do the distinguishing characteristics of the 'Natural grasslands on basalt and fine-textured alluvium of the Brigalow Belt North IBRA Bioregion and Claude River Downs' **differentiate** it sufficiently from those of the 'Natural grasslands on basalt and fine-textured alluvium of the Brigalow Belt South, Nandewar, western New England Tablelands, northern Sydney Basin and northern Darling Riverine Plains IBRA Bioregions'?
5. Do you have any comments on the **inclusion**, or **exclusion**, of particular Queensland **REs**?
6. Do you have any comments on the proposed **condition classes** for the ecological community?
7. Are the **lists of characteristic plant species** for the ecological community, adequate? If not, how should the list be modified?
8. The workshop did not consider the **faunal component** of this ecological community. Some information on fauna has been included in section 10 of the nomination. Are you able to provide any further information about fauna that are characteristic or of functional importance or otherwise relevant to this ecological community?

**We welcome any additional comments or information** you can provide to assist us with the assessment of the Natural grasslands on basalt and fine-textured alluvium of the Brigalow Belt North IBRA Bioregion and Claude River Downs.

Thank you for your assistance.