

Technical Workshop Report

Gippsland Plains Grassland and Grassy Woodland

Maffra Victoria
8 - 9 November 2007



Grassland – Maffra Cemetery

Grassy woodland with Gippsland Red Gums - Fernbank

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

The technical workshop was held on 8-9 November 2007 in Maffra, Victoria.

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 NOMINATIONS

Two nominations were received seeking the listing of the Forest Red Gum Grassy Woodland of Gippsland, Victoria and the Central Gippsland Plains Grassland of the South East Coastal Plain Bioregion as critically endangered ecological communities under the *Environment Protection and Biodiversity Conservation Act 1999*.

1. The nomination for the Forest Red Gum Grassy Woodland describes it as a forest dominated by *Eucalyptus tereticornis*, with occasional small trees and a ground layer of grasses and herbs. The tree canopy may also include *E. polyanthemos*, *E. bosistoana* or *E. bridgesiana* and the small tree layer comprises scattered individuals of *Acacia implexa* and *Allocasuarina littoralis*. Characteristic components of the ground layer include *Microlaena stipoides*, *Austrodanthonia racemosa*, *Themeda triandra*, *Austrostipa rudis*, *Dichondra repens*, *Hydrocotyle laxiflora* and *Gahnia radula*. The ecological community usually occurs on loamy-sand and loam topsoils with gravelly subsoils but may extend into clays and shallow sandy soils. It is limited to the region between Morwell and Johnsonville in Gippsland.

2. The nomination for the Central Gippsland Plains Grassland describes it as a type of natural temperate grassland dominated by *Themeda triandra* with a range of herbs, including *Chrysocephalum apiculatum*, *Hypoxis hygrometrica* and *Tricoryne elatior*. The grasses *Austrodanthonia laevis*, *Notodanthonia semiannularis* and *Poa labillardierei* may also be common at some sites. It typically occurs on grey soils that are seasonally waterlogged. The grassland comprises very small remnants on railway reserves, roadsides and cemeteries.

3. TECHNICAL WORKSHOP OUTCOMES

Workshop Participants agreed to undertake field testing of the outcomes after the workshop and the results have been incorporated into the text below.

Name

The workshop suggested the ecological community be named “Gippsland Plains Grassland and Grassy Woodland”.

Definition

The workshop agreed to combine the two nominated ecological communities into a single national ecological community. This decision was based on their common origin and similarities in vegetation structure, particularly of the ground layer.

Geographic distribution.

Endemic to Victoria. Mostly occurs in the Gippsland Plain Bioregion Victoria (Subregion 1 of the South-east Coastal Plain IBRA Bioregion) with small occurrences extending into the adjacent East Gippsland Lowlands region (Subregion 1 of the South East Corner IBRA Bioregion).

Physical parameters

- Generally occupies a landscape of undulating to flat plains.
- Altitude usually <100 metres above sea-level but occurrences may extend to low hills up to 220 metres above sea-level.
- Soils are of various types but all are of non-volcanic origin.
- Rainfall is generally 400-750 mm/year.

Vegetation

The ecological community occurs in two structural forms: grassland and grassy woodland.

1. Ground layer

This is the dominant layer in the grassland form.

- Dominated by native graminoids.
- Small shrubs (≤ 1 metre tall) are not a defining feature. They account for $\leq 5\%$ projective foliage cover.

2. Shrub layer

Medium to large shrubs may be present, particularly in the woodland form.

- Species in this layer may include *Acacia* spp. (e.g. *A. implexa*, *A. mearnsii*, *A. melanoxylon*), *Exocarpos cupressiformis*, *Kunzea ericoides*, *Leptospermum continentale*, *Melaleuca ericifolia* and *Melaleuca parvistaminea*.
- Benchmark projective foliage cover values in the woodland form are:
 - Medium shrubs (≤ 5 metres tall) $\leq 10\%$.
 - Large shrubs and understorey trees (> 5 metres tall but not part of the canopy) $\leq 5\%$.
- Indigenous native shrubs are encroaching into some patches of the ecological community as a consequence of natural vegetation dynamics or in response to disturbance. This situation particularly applies to *K. ericoides* (Burgan) but may not be limited to that species. Encroachment could eventually result in structural transitions from native grassland to native shrubland or open grassy woodland to shrubby woodland, if not checked. In order to account for such changes in state,

patches are included in the ecological community if the projective foliage cover of the native shrub layer is $\leq 50\%$ of the total area of the patch.

- A special case applies to *Melaleuca ericifolia* and *M. parvistaminea*. The occurrence of these *Melaleuca* species expands during wet periods and recedes in dry periods. Their encroachment is a response to naturally or artificially-induced processes such as fluctuating hydrology or altered fire regimes. They are properly considered as components of the wetter parts of the ecological community's range, where it may intergrade with EVC 53_61 Swamp Scrub. Sites where there is a natural (i.e. non-encroaching) cover of these species that exceeds 50% are classified as Swamp Scrub.

3. Canopy

This is the dominant layer in the woodland form.

- The tree canopy is usually dominated by Gippsland Red Gum (*Eucalyptus tereticornis* subsp. *mediana*). Co-dominant trees may include *E. bridgesiana*, *E. polyanthemus*, *E. melliodora*, *E. yarraensis*, *E. pauciflora* subsp. *pauciflora*, *E. angophoroides*, and *E. rubida*. Small pockets of woodland may be dominated by *Allocasuarina verticillata*, *A. littoralis*, *Eucalyptus viminalis* subsp. *pryoriana* or subsp. *viminalis* (especially to the west), *E. globoidea* (especially on sand sheets to the east of the Perry River) or *E. cephalocarpa*.
- In the grassland form, the tree canopy is usually absent or with scattered trees. The projective foliage cover of the tree canopy is $\leq 5\%$.
- The woodland form can vary in appearance.
 - The typical expression of woodland remnants on the Gippsland Plains is a stable regrowth characterised by closely spaced, thin trees sometimes with scattered large trees. Trees usually have a density in the range 750 to 2200 stems/ha and a mean diameter at breast height of 13 to 15 cm.
 - The open, mature woodland expression is uncommon and characterised by large, widely spaced mature trees. The EVC benchmark for large trees states a tree density of 10 trees/ha and diameter at breast height of 80 cm.

Condition Classes (for good quality sites = Listed ecological community)

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.

Grassland component

- Minimum patch size of ≥ 0.04 ha.
- AND
- Native plant species diversity (excluding trees and tall shrubs) must be ≥ 7 [at least as detected during spring months (September to November) after no disturbance for at least two months prior to the springtime of sampling].
- AND
- $\geq 50\%$ of perennial ground layer vegetation cover comprises native species (includes all vascular plants in this layer).

Grassy woodland component

- Minimum patch size is ≥ 0.2 ha
- AND
- $\geq 50\%$ of perennial ground layer vegetation cover comprises native species (includes all vascular plants in this layer)

Other Matters

Components

The workshop noted that the national ecological community covers the following ecological entities recognised in Victoria:

Communities listed under the *Flora & Fauna Guarantee Act*:

Central Gippsland Plains Grassland
Forest Red Gum Grassy Woodland
Plains Grassland (South Gippsland) [to be confirmed]

Ecological Vegetation Classes

132_61 *LaTrobe Valley* Plains Grassland (Gippsland Plain)
132_62 *South Gippsland* Plains Grassland (Gippsland Plain) [to be confirmed]
55 Plains Grassy Woodland (Gippsland Plain)
55 Plains Grassy Woodland (East Gippsland Lowlands)

The national ecological community excludes EVC 934 Brackish Grassland, formerly identified as EVC 132_07 Nooramunga Plains Grassland. This association differs from the other two grassland associations by the conspicuous presence of halophytic plant species. It should be noted that the State-listed Plains Grassland (South Gippsland) includes one small patch (at Jack Smith Lake) that occurs on heavy saline clay soils and may be part of EVC 934 Brackish Grassland. The relationship of this patch to the national ecological community, as defined here, requires confirmation.

Consistency with Victorian approach

The descriptions and condition classes used here have been made consistent with the terminology used in Victorian EVC benchmarks and descriptions, where possible.

- The term ‘forb’ is not used as a life-form descriptor for ground-layer vegetation. This is consistent with the EVC approach that uses ‘graminoid’, ‘herb’ and ‘shrub’ as descriptors for vascular plants in the ground layer.
- Victoria categorises life-forms into size classes, with benchmark cover values for each. This approach is applied to the shrub layer here with equivalent values used in Victoria. However, the description and condition classes determined by this workshop do not require distinction into size-classes for the graminoids and herbs.

Weeds

The workshop considered whether to include weed cover as a condition criterion. After field testing, it was concluded that such a criterion would be problematic and likely not required. The criteria for minimum native ground layer cover has been applied instead of a weed cover criterion. There is also the problem of taking into account the different impacts and risk associated with weed species, which precludes any generalised criteria concerning weeds.

The workshop also considered the encroachment of indigenous native shrubs. This may be confused as a weed issue but properly relates to transitional vegetation states. The approach to this issue is captured under “Definition: Vegetation: 2. Shrub layer”.

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Recommended Management Criteria and Actions

The workshop identified a number of key conservation actions to be considered in the preparation of the Conservation Advice for this ecological community.

- Consider a benchmark of 10% native cover as the basis for identifying potentially recoverable sites.
- Develop management objectives and implement adaptive management regimes.
- Conservation covenants for longer term security.
- Site inventories as basis of adaptive management.
- Management/control of undesirable shrub invasion.
- Removal/reduction of over-mature grass layer. Determine the most appropriate management regime to remove the biomass (e.g. burning, mowing, grazing).
- Prioritise and control weeds, and implement revegetation in conjunction with weed removal.
- Reinstatement of key species and threatened species (including consideration of fauna).
- Encourage native seed production, which can then be harvested for restoration activities or made available for commercial sale.
- Control pest animals.
- Address dieback of canopy trees, where possible.
- Maintain and improve connectivity of remnants, including protection of paddock trees.
- Landscape approach to restoration by considering adjacent, different vegetation types.
- Ecological thinning is required in most of the woodland remnants as a priority action after fencing and covenanting.

Extent and decline of the Gippsland Plains Grassland and Grassy Woodland

The workshop did not discuss estimates for extent and decline, other than to acknowledge that the ecological community is threatened. The Department has collated the following information for comment.

EVC	Bioregion	Pre-European (ha)	Current (ha)	Decline (%)
55	Gippsland Plain	151 008	4 850	96.8
	East Gippsland Lowland	1 318	71	94.6
	<i>Total</i>	<i>152 326</i>	<i>4 921</i>	<i>96.8</i>
132	Gippsland Plain*	37 037	68	99.8
	East Gippsland Lowland	absent	absent	n/a
	<i>Total*</i>	<i>37 037</i>	<i>68</i>	<i>99.8</i>
Total		189 363	4 989	97.4

Source: Department of Sustainability and Environment. 2004. Victorian Bioregional Conservation Status of EVCs Area Statement. Unpublished spreadsheet.

Legend: EVC 55 = Plains Grassy Woodland;
EVC 132 = Plains Grassland.

* = Excludes 289 ha identified as Nooramunga Plains Grassland (EVC 132_07).

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List of characteristic plant species

The workshop did not prepare a flora list for the ecological community. The list below was collated by the Department based on the benchmarks for EVCs 55, 132_61 and 132_62 in the Gippsland Plain and East Gippsland Lowland plus additional species noted in the Definition, above. This is an indicative, rather than a comprehensive, list of the plant species common to the ecological community. Patches may not include all species on the list, or may include other species not listed.

Species name	Common name
CANOPY LAYER: DOMINANT TREE	
<i>Eucalyptus tereticornis</i> subsp. <i>mediana</i>	Gippsland Red-gum
CANOPY LAYER: CO-DOMINANT TREES ¹	
<i>Allocasuarina verticillata</i>	Drooping Sheoke
<i>Eucalyptus angophoroides</i>	Appled-top Box
<i>Eucalyptus bridgesiana</i>	But But
<i>Eucalyptus camaldulensis</i>	River Red-gum
<i>Eucalyptus cephalocarpa</i>	Mealy Stringybark
<i>Eucalyptus globoidea</i>	White Stringybark
<i>Eucalyptus melliodora</i>	Yellow Box
<i>Eucalyptus pauciflora</i> subsp. <i>pauciflora</i>	Snow Gum
<i>Eucalyptus polyanthemos</i>	Red Box
<i>Eucalyptus rubida</i>	Candlebark
<i>Eucalyptus viminalis</i> subsp. <i>pryoriana</i>	Manna Gum
<i>Eucalyptus viminalis</i> subsp. <i>viminalis</i>	Manna Gum
<i>Eucalyptus yarraensis</i>	Yarra Gum
MID-LAYER: MEDIUM TO TALL SHRUBS & SMALL TREES ²	
<i>Allocasuarina littoralis</i>	Black Sheoke
<i>Acacia implexa</i>	Lightwood
<i>Acacia mearnsii</i>	Black Wattle
<i>Acacia melanoxylon</i>	Blackwood
<i>Exocarpos cupressiformis</i>	Cherry Ballart
<i>Kunzea ericoides</i>	Burgan
<i>Leptospermum continentale</i>	Prickly Tea-tree
<i>Melaleuca ericifolia</i>	Swamp Paperbark
<i>Melaleuca parvistaminea</i>	Rough Paperbark
GROUND LAYER: SMALL SHRUBS	
<i>Bossiaea prostrata</i>	Creeping Bossiaea
<i>Pimelea humilis</i>	Common Rice-flower
GROUND LAYER: GRAMINOIDS (GRASSES & GRASS-LIKE PLANTS)	
<i>Austrodanthonia laevis</i>	Smooth Wallaby-grass
<i>Austrodanthonia setacea</i>	Bristly Wallaby-grass
<i>Austrostipa rudis</i>	Veined Spear-grass
<i>Carex breviculmis</i>	Common Grass-sedge
<i>Distichlis distichopylla</i> (brackish sites)	Australian Salt-grass
<i>Gahnia radula</i>	Thatch Saw-sedge
<i>Hemarthria uncinata</i> var. <i>uncinata</i>	Mat Grass
<i>Lachnagrostis filiformis</i>	Common Blown-Grass
<i>Lomandra filiformis</i>	Wattle Mat-rush
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass
<i>Notodanthonia semiannularis</i>	Wetland Wallaby-grass
<i>Poa labillardierei</i>	Common Tussock-grass
<i>Schoenus apogon</i>	Common Bog-sedge
<i>Themeda triandra</i>	Kangaroo Grass

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Species name	Common name
GROUND LAYER: HERBS	
<i>Acaena echinata</i>	Sheep's Burr
<i>Acaena novae-zelandiae</i>	Bidgee-widgee
<i>Calocephalus citreus</i>	Lemon Beauty-heads
<i>Calocephalus lacteus</i>	Milky Beauty-heads
<i>Clematis microphylla</i>	Small-leaved Clematis
<i>Convolvulus erubescens</i> spp. agg.	Pink Bindweed
<i>Dichondra repens</i>	Kidney-weed
<i>Drosera peltata</i> subsp. <i>peltata</i>	Pale Sundew
<i>Haloragis heterophylla</i>	Varied Raspwort
<i>Hypericum gramineum</i>	Small St John's Wort
<i>Leptorhynchos squamatus</i>	Scaly Buttons
<i>Leptorhynchos tenuifolius</i>	Wiry Buttons
<i>Oxalis exilis</i>	Shady Wood-sorrel
<i>Oxalis perennans</i>	Grassland Wood-sorrel
<i>Poranthera microphylla</i>	Small Poranthera
<i>Solenogyne dominii</i>	Smooth Solenogyne
<i>Tricoryne elatior</i>	Yellow Rush-lily

¹ The tree species present and their degree of co-dominance varies among sites and it should be noted that biogeographic variation occurs across the range of the ecological community.

² The typical expressions of the ecological community do not have a well-developed mid-layer. However, some patches occur in a transitional state whereby a mid-layer is developing either through natural processes or as a consequence of disturbance.

The Department notes that the Victorian Resources Online: West Gippsland website www.dpi.vic.gov.au/dpi/vro/wgregn.nsf/pages/wg_vegetation_res_evc?OpenDocument has EVC profiles with detailed species lists for the Gippsland Plains Grassy Woodland (EVC 55_03) and the South Gippsland Grassland (EVC 132_05).

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List of nationally threatened species

Threatened species listed under the *Environment Protection and Biodiversity Conservation Act 1999* likely to occur in or near the Gippsland Plains Grassland and Grassy Woodland ecological community.

Species name	Common name(s)	EPBC Status
Birds		
<i>Lathamus discolor</i>	Swift Parrot	Endangered
<i>Neophema chrysogaster</i>	Orange-bellied Parrot	Critically Endangered
Frogs		
<i>Litoria raniformis</i>	Growling Grass Frog, Southern Bell Frog, Warty Bell Frog, Green and Golden Frog	Vulnerable
Reptiles		
<i>Delma impar</i>	Striped Legless Lizard	Vulnerable
Mammals		
<i>Dasyurus maculatus</i> subsp. <i>maculatus</i> (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered
<i>Isoodon obesulus</i> subsp. <i>obesulus</i>	Southern Brown Bandicoot	Endangered
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable
Plants		
<i>Caladenia robinsonii</i>	Frankston Spider-orchid	Endangered
<i>Caladenia thysanochila</i>	Fringed Spider-orchid	Endangered
<i>Dianella amoena</i>	Matted Flax-lily	Endangered
<i>Prasophyllum colemaniae</i>	Lilac Leek-orchid	Vulnerable
<i>Prasophyllum correctum</i>	Gaping Leek-orchid	Endangered
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid, Slaty Leek-orchid, Stout Leek-orchid, French's Leek-orchid	Endangered
<i>Prasophyllum spicatum</i>	Dense Leek-orchid	Vulnerable
<i>Pterostylis cucullata</i>	Leafy Greenhood	Vulnerable
<i>Thelymitra matthewsii</i>	Spiral Sun-orchid	Vulnerable
<i>Xerochrysum palustre</i>	Swamp Everlasting	Vulnerable

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** of the ecological community as determined above?
- 3) Do you have any comments on the proposed **condition classes** for the ecological community?
- 4) Do you agree with the **State components** as identified above under “Other matters: Components”? For instance, should the South Gippsland Plains Grassland be included with the Central Gippsland Plains/Forest Red Gum Grassy Woodland of Gippsland components in a single national ecological community?
- 5) Are the **recommended management criteria** or actions, above, appropriate?
- 6) Are you able to confirm or amend the estimates of **extent and decline** presented above?
- 7) Are the **lists of characteristic plant species and threatened species** for the ecological community, above, adequate? If not, how should the list be modified?
- 8) The workshop did not consider the **faunal component** of this ecological community. Are you able to provide any 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 Gippsland Plains Grassland and Grassy Woodland.

Thank you for your assistance.