

Water, Heritage and the Arts

ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999



# Natural Temperate Grassland of the Victorian Volcanic Plain

A nationally threatened ecological community

epbc

### What is the Natural Temperate Grassland of the Victorian Volcanic Plain?

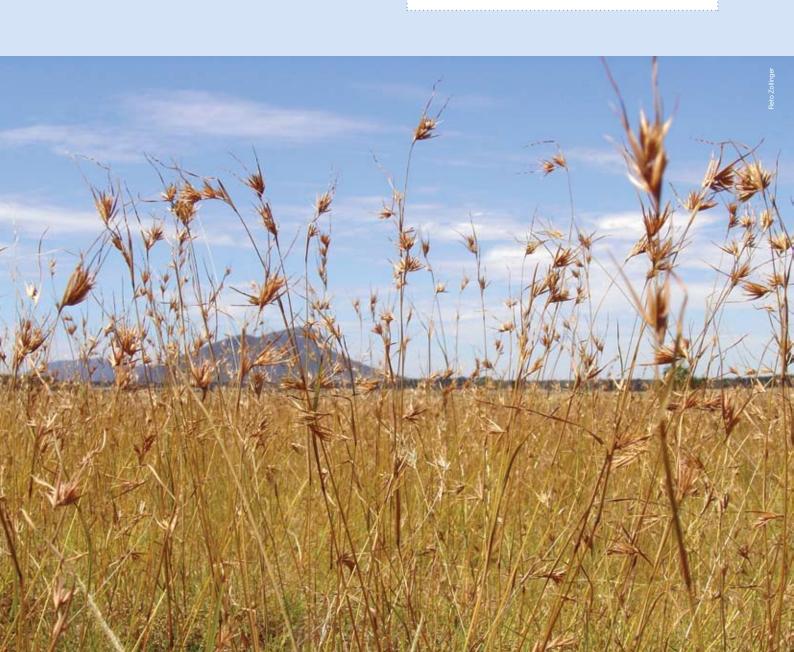
The Natural Temperate Grassland of the Victorian Volcanic Plain is a native grassland which is a critically endangered ecological community under the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The vegetation is dominated by a native ground layer of tussockforming perennial grasses interspersed with a variety of wildflowers. Few, if any, large shrubs and trees are present.

The ecological community can vary greatly depending on the time of year and the history of the site, such as intensity of grazing and recent fire history. The native grasses that usually dominate are kangaroo-grass (*Themeda triandra*), wallaby-grasses (*Austrodanthonia* species), spear-grasses (*Austrostipa* species) or tussock-grasses (*Poa* species). Wildflowers and herbs grow among the tussocks, including daisies, lilies, peas and orchids.

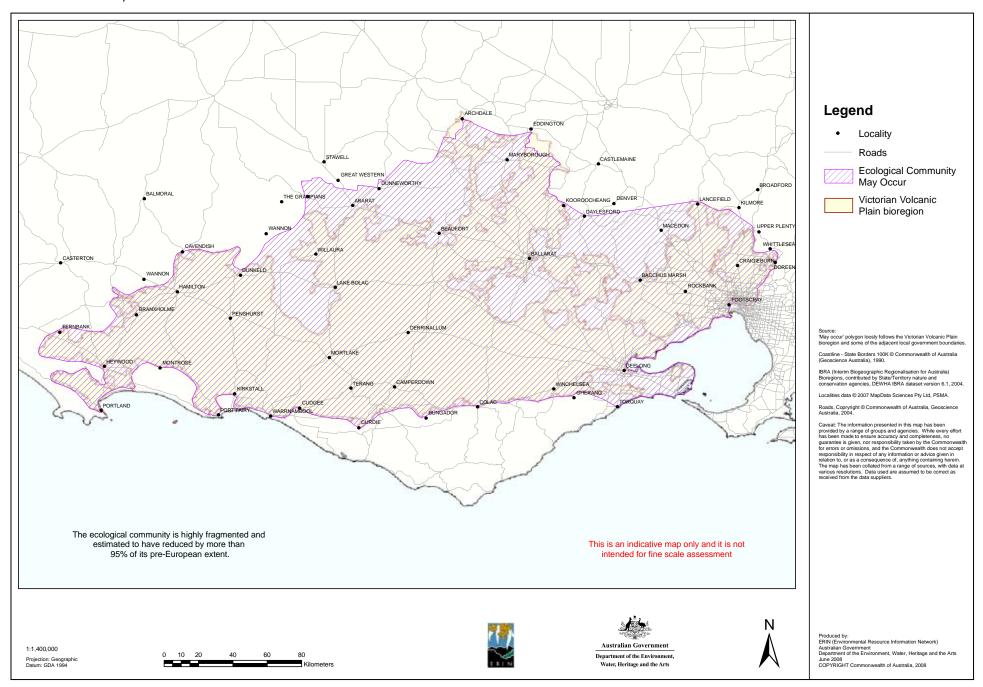
The grassland supports a variety of nationally threatened animals and more than 20 threatened plants.



- The Natural Temperate Grassland of the Victorian Volcanic Plain is a highly fragmented, critically endangered ecological community. Less than five per cent of the pre-European distribution remains.
- If you have this unique grassland on your property, retaining favourable land management practices is encouraged.



#### Area of Natural Temperate Grasslands of the Victorian Volcanic Plain



### Where is the critically endangered grassland found?

The grassland is associated with the Quaternary basalt plains of south-western Victoria. The basalt plains stretch from the western suburbs of Melbourne to Hamilton in rural Victoria. The region is known as the Victorian Volcanic Plain bioregion.

The map on the previous page shows the general area where the Natural Temperate Grassland of the Victorian Volcanic Plain may be found. It is not possible to prepare a precise map which shows all remnants of the grassland because the region has not been entirely surveyed in detail and many grassland remnants are now limited to very small, fragmented patches that cannot be shown on a map at this coarse scale. Therefore, to determine if the ecological community is present at a particular site, you should follow the guide below.

The grassland corresponds most closely with two Victorian Ecological Vegetation Classes (EVC) that occur in the region shown by the map. These are: EVC 132 Plains Grassland and EVC 654 Creekline Tussock Grassland. The grassland also is listed as a threatened community under Victorian environmental laws, where it is known as the Western Basalt Plains Grassland Community.



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## How do I know if I am standing in the Natural Temperate Grassland of the Victorian Volcanic Plain?

This guide is designed to help you determine if a patch of grassland is part of the listed Natural Temperate Grassland of the Victorian Volcanic Plain. Very degraded patches are not listed but if managed suitably may improve to a better condition.

#### Where should a grassland patch be located?

- Most of the ecological community occurs in the Victorian Volcanic Plain bioregion.
- Small pockets of grassland may also occur in the nearby Victorian bioregions of the Central Victorian Uplands, Dundas Tablelands and Otway Plain. In short, only grasslands in or near to the Victorian Volcanic Plain are listed.

# How big should a patch of grassland be to be part of the listed ecological community?

 For a native vegetation remnant that is 1 hectare or smaller, the grassland patch should be at least 0.05 hectare in size. Trees and shrubs are typically absent but may comprise no more than 5 per cent projective canopy cover. Projective canopy cover is the percentage of the site that would be shaded by foliage and branches if the sun were directly overhead.

(Note that 0.05 hectares is equivalent to a 10 x 50 metre

or a 20 x 25 metre or a 4 x 125 metre rectangular plot). OR

 For a native vegetation remnant that is more than 1 hectare, the grassland patch should be at least 0.5 hectare in size. Trees and shrubs are typically absent but the density of mature trees within the grassland patch should be not more than 2 trees per hectare.

# What kind of native vegetation should be in the patch?

The listed grassland only includes relatively good quality patches of native grassland. These can be recognised by one of these features:

- The vegetation is mostly limited to a ground layer of grasses and herbs. The ground layer is dominated by native tussock-forming perennial grasses with a variety of herbs occupying the spaces among grass tussocks.
- The native grassland has one or more of the following kinds of native grasses as the most common types of grasses present: kangaroo-grass (*Themeda triandra*), wallaby-grasses (*Austrodanthonia* species), spear-grasses (*Austrostipa* species) or tussock-grasses (*Poa* species). Refer to pictures of

key native grass, wildflower and animal species on the following pages.

 The native grasses above account for 50 per cent or more of the perennial tussock cover of the grassland patch.

#### OR

Native wildflowers account for 50 per cent or more
of the total vegetation cover during spring-summer
(September to February). This criterion is designed
to include native vegetation remnants in which native
grasses have become sparse but the remnant still
retains its biodiversity value.

#### OR

 Non-grassy weeds account for less than 30 per cent of the total vegetation cover at any time of the year. This refers to sites that are good quality native vegetation as indicated by low numbers of problem broad-leaf weeds.

Therefore, the listed ecological community only includes patches that have mostly native vegetation and are of relatively good quality.

If a grassland patch meets the above criteria, then you are likely to be standing in a nationally listed threatened ecological community. Therefore, if you change your existing practises and these could lead to a loss of this ecological community you will need to seek a referral under the EPBC Act (please see the following section on What does the listing of the ecological community mean for land managers?).

However, you should be aware that the ecological community can be variable in its appearance. It can vary seasonally because many native wildflowers only become visible during spring and early summer. In addition, some wildflowers do not appear every year, and may stay dormant in dry seasons. The grassland also may vary from site to site, depending on land management practices and the history of disturbances. Therefore, any proper assessment should occur in spring and must occur more than 2 months since recent disturbance, such as fire or mowing, in order to allow native species to recover.



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In addition, if your grassland patch shows any one or more of the following features, it is likely to have an even greater biodiversity value:

- · large patch size;
- a high diversity of native plant species;
- minimal weed invasion;
- threatened plant and/or animal species;
- natural exposed rock platforms and outcrops as fauna habitat; or
- mosses, lichens or a soil crust on the soil surface indicating minimal soil disturbance.





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## Some Key Species

The following photos show some of the key species of the Natural Temperate Grassland of the Victorian Volcanic Plain.

An expanded list of key indicative species of the Natural Temperate Grassland of the Victorian Volcanic Plain can be found in the listing advice for this ecological community at: www.environment.gov.au/cgi-bin/sprat/public publiclookupcommunities.pl



Themeda triandra (kangaroo grass) seed head



Austrodanthonia sp. (wallaby grass)



Pimelea humilis (common rice flower)



Themeda grassland



Centrolepis aristata (pointed centrolepis)



Leptorhynchos squamatus (scaly buttons)



Austrostipa sp. (spear grass)



Microlaena stipoides var. stipoides (weeping grass)



Craspedia glauca spp. agg. (common billy buttons)



Poa labillardierei (common tussock grass)



Schoenus apogon (common bog sedge)



Brachyscome basaltica var. gracilis (woodland swamp daisy)



Eryngium ovinum (blue devil)



Drosera peltata (pale sundew)



Senecio quadridentatus (cottony fireweed)



Oxalis perennans (grassland wood sorrel)



Drosera whittakeri ssp. aberrans (scented sundew)



Solenogyne doiminii (smooth solenogyne)



Chrysocephalum apiculatum (common everlasting)



Lobelia pratioides (poison lobelia)



Thelymitra pauciflora (slender sun orchid)



Elymus scaber var. scaber (common wheat grass)



Microtis unifolia (onion orchid)



Tricoryne elatior (yellow rush lily)



Acaena echinata (sheeps burr)



Plantago gaudichaudii (narrow plantain)



Ptilotus macrocephalus (feather-heads)

# Species of Special Importance

The following table describes some of the significant species of the Natural Temperate Grassland of the Victorian Volcanic Plain as identified at December 2008. These species have either been recorded in or near to known sites of the listed community and are listed under the EPBC Act.

#### Some significant species of the Natural Temperate Grassland of the Victorian Volcanic Plain

	Species	Common name(s)	Notes	EPBC Status
Mammals	Isoodon obesulus obesulus	southern brown bandicoot	Predominantly nocturnal bandicoot that was once widespread throughout eastern Australia. Habitat fragmentation has reduced distribution. Relies on grassy areas for foraging and protection from predators.	Endangered
	Perameles gunnii unnamed	eastern barred bandicoot (Mainland)	Formerly widespread bandicoot in the Victorian Volcanic Plains region now known from only a few isolated sites in Victoria (Vic). Habitat fragmentation and feral predators have reduced populations. Uses perennial tussock grasslands for foraging and nesting.	Endangered
Birds	Pedionomus torquatus	plains-wanderer	A cryptic nocturnal 'quail like' bird that is found in grassy areas and makes daytime resting spots in depressions in grasses. Grassland specialist using tussocks for shelter. Known to eat grass seeds.	Vulnerable
Reptiles	Delma impar	striped legless lizard	Legless lizard about 30cm total length. Grassland specialist, using tussocks and thick ground cover to shelter in.	Vulnerable
	Eulamprus tympanum marnieae	corangamite water skink	Skink to 80mm length. Found in open grassy areas with basalt soils and rock mounds present; also found near either permanent or temporary water bodies.	Endangered
	Tympanocryptis pinguicolla	grassland earless dragon	Lizard up to 5cm long. Known from tussock grasslands on basalt soils, preferring sites with both taller tussock and shorter grasses.	Endangered
Amphibians	Litoria raniformis	southern bell frog, growling grass frog, warty bell frog, green and golden frog	Large frog species (up to 104mm), known to use clay soil and grassland sites where dense emergent vegetation exists near permanent or ephemeral water sources.	Vulnerable

## Some significant species of the Natural Temperate Grassland of the Victorian Volcanic Plain

Insects	Synemon plana	golden sun moth	A day flying moth about 3cm wingspan. Formerly widespread through New South Wales (NSW), Australian Capital Territory (ACT), Vic and South Australia (SA), now has a highly reduced and fragmented distribution and considered extinct in SA. Inhabits natural temperate grassland and grassy woodlands.	Critically Endangered
Plants	Carex tasmanica	curly sedge	From Vic and Tasmania (Tas) only. Usually associated with drainage lines or marshes.	Vulnerable
	Cullen parvum	small scurf-pea	Only occurs in Vic and SA in grassland and grassy woodland sites which get irregular flooding. Flowers between October and February. Dies back, so not visible, in winter.	Endangered
	Dianella amoena	matted flax-lily	Summer flowering large herb up to 5m wide with flower spikes to 90cm. Current distribution restricted and fragmented, some populations occurring in urban areas.	Endangered
	Diuris sp. aff. chryseopsis (Basalt Plains)	small golden moths, early golden moths	Known only from Vic on basalt plains north and west of Melbourne. Flowering in September and October.	Endangered
	Diuris fragrantissima	sunshine diuris, white diuris, fragrant double- tails	Only one known remaining population to the north of Melbourne. Flowering mid-October to early November. Pollination reliant on native bees.	Endangered
	Dodonaea procumbens	trailing hop-bush	Known from southern NSW, Vic and SA. Flowering November to February and fruits may take up to 12 months to mature.	Vulnerable
	Glycine latrobeana	clover glycine, purple clover	Occurs in Tas, a single location in SA and is spread throughout Vic but only six known viable populations. Grows mostly in grasslands and grassy woodlands, flowering in September to December.	Vulnerable
	Lachnagrostis adamsonii	adamson's blown- grass	Endemic to south-central and south-western Victoria. Tufted annual grass to 70cm high. Previously known as <i>Agrostis adamsonii</i> .	Endangered
	Lepidium aschersonii	spiny pepper-cress	Thought to be extinct in NSW. Occurs in the south west of Vic but only a few known stands. Branched perennial herb to 30cm high. Arises from underground rootstock and is only visible during the springsummer growth period.	Vulnerable
	Lepidium hyssopifolium	basalt pepper-cress	Vic distribution from only three areas in central Vic. Perennial herb to 50cm high flowering from December to February.	Endangered

#### Some significant species of the Natural Temperate Grassland of the Victorian Volcanic Plain

Plants (cont.)	Leucochrysum albicans var. tricolor	hoary sunray	Known from NSW, ACT, Vic and Tas. Distribution for Vic is restricted to south-western Vic but was previously more widely spread. Mounding perennial straw daisy to 30cm high, flowers in spring to summer.	Endangered
	Pimelea spinescens subsp. spinescens	plains rice-flower, spiny rice-flower, prickly pimelea	Endemic to south-western and central Vic. Stunted shrub to 30cm, flowers in April to August. If present should be visible throughout the year.	Critically Endangered
	Prasophyllum diversiflorum	gorae leek-orchid	Endemic to south-western Vic, known from only a few sites. Orchid to 60cm high, flowering December to February.	Endangered
	Prasophyllum frenchii	maroon leek-orchid, slaty leek-orchid, stout leek-orchid, french's leek-orchid	Distributed in Vic and far south- eastern SA. Seasonal perennial orchid to 60cm, flowering October to December.	Endangered
	Prasophyllum suaveolens	fragrant leek-orchid	Known only from western Vic. Slender orchid to 25cm, flowering October and November.	Endangered
	Pterostylis basaltica	basalt greenhood	Endemic to central Vic from only a few populations. Flowering November to January.	Endangered
	Rutidosis leptorrhynchoides	button wrinklewort	Distributed in south-eastern NSW and ACT and south-western Vic, mostly in grasslands. Flowering October to January.	Endangered
	Senecio macrocarpus	large-fruit groundsel, large-fruit fireweed	Occurs in south-eastern SA and south-western Vic. Shrub to 70cm, flowering September to November	Vulnerable
	Senecio psilocarpus	swamp fireweed, smooth-fruited groundsel	Occurs in south-eastern SA and western Vic.	Vulnerable
	Thesium australe	austral toadflax, toadflax	Occurs in south-eastern QLD, eastern NSW and eastern Vic. Formerly occurred in western Vic. Perennial herb to 40cm, flowering spring and summer	Vulnerable
	Xerochrysum palustre	swamp everlasting	Occurs in southern Vic and a few sites in northern Tas. Perennial herb, flowering November to March dying off in late summer.	Vulnerable

More information on these species may be found at the species profile and threats database (SPRAT) available through the biodiversity section of the Department of the Environment, Water, Heritage and the Arts website:

www.environment.gov.au/biodiversity

The Victorian Government also produces Action Statements for species listed in Victoria, which covers many of those in the table above. They are found through the Plants and Animals section of the Victorian Department of Sustainability and Environment website:

www.dse.vic.gov.au

# Species of Special Importance

The following photos show some of the species of special importance of the Natural Temperate Grassland of the Victorian Volcanic Plain.



Isoodon obesulus obesulus (southern brown bandicoot)



Litoria raniformis (growling grass frog)



Carex tasmanica (curly sedge)



Pedionomus torquatus (plains wanderer)



Synemon plana (golden sun moth)



Pimelea spinescens (plains rice flower)



Delma impar (striped legless lizard)



Perameles gunnii (eastern barred bandicoot)



Rutidosis leptorrhynchoides (button wrinklewort)



Tympanocryptis pinguicolla (grassland earless dragon)



Glycine latrobeana (purple clover)



Pterostylis basaltica (basalt greenhood)

# Why is the Natural Temperate Grassland of the Victorian Volcanic Plain listed as critically endangered?

The Natural Temperate Grassland of the Victorian Volcanic Plain has been listed under the EPBC Act because of its very severe decline in extent, very restricted distribution, and the very severe reduction in the integrity of the community. The grassland was formerly extensive on the volcanic plain but now comprises mostly small, highly fragmented remnants in a landscape that has been largely cleared for agriculture. Less than five per cent of the original distribution of the grassland community remains.

The decision to list the ecological community was made by the Australian Minister for the Environment, Heritage and the Arts after a rigorous process that involved consultation with stakeholders and advice from the Threatened Species Scientific Committee – an independent scientific body that advises the Minister on the conservation status of native species and ecological communities.

National listing of an ecological community recognises that its long-term survival is under threat. The listing aims to prevent any further decline and to promote and assist recovery through landholder and community efforts.

# What does the listing of the ecological community mean for land managers?

If you have the Natural Temperate Grassland of the Victorian Volcanic Plain on your property then continuation of supportive practices is vitally important if the listed ecological community on your land is to persist for the benefit of future generations.

The listing of the Natural Temperate Grassland of the Victorian Volcanic Plain under the EPBC Act will not prevent land managers from continuing to use their land in the same way they were before, providing that they do not significantly change or intensify their activities and the activity was lawful.

National protection means any new or intensified activities that may be likely to have a significant impact upon the listed ecological community should be referred to the Minister for the Environment, Heritage and the Arts for assessment and approval (unless they are subject to an exemption under the EPBC Act). This will include undertaking an activity which will lead to a loss of a patch of the listed community that meets all of the criteria (see the previous section *How do I know if I am standing in the Natural Temperate Grassland of the Victorian Volcanic Plain?*). Those activities likely to require approval include, but are not restricted to, clearing remnants of

native vegetation, cutting of new tracks/fuel breaks, significant and adverse changes in management regime (such as converting from mowing/slashing to herbicide use or substantially intensifying stocking rates on the grassland), introducing fertilisers or other chemicals to native remnants, or introducing potentially invasive exotic pasture species in or near to remnants.

The process for making a referral under the EPBC Act is easy. The EPBC Act allows for some exemptions to the requirement for assessment and approval. This means some activities may not need assessment or approval if you meet certain criteria.

You should also check that no state or local approvals regarding native vegetation might be needed in addition to EPBC requirements.

Further information is available:

Approvals:

www.environment.gov.au/epbc/approval.html

Exemptions:

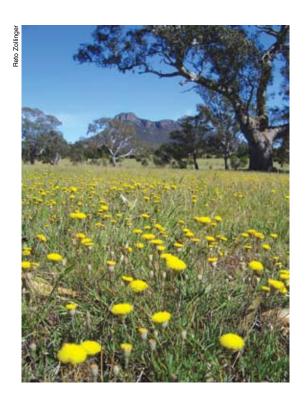
www.environment.gov.au/epbc/about/exemptions.html

Referrals:

www.environment.gov.au/epbc/assessments/ referral-form.html

or, phone **1800 803 772** 

Farmers are encouraged to use the services of the Environmental Liaison Officer at the National Farmers' Federation. The officer can be contacted by phone (02) 6273 3855 or email environment@nff.org.au



#### Threats and Conservation Actions

To assist in the protection of the listed community, survey work is encouraged to help identify more remnants of the grassland. Monitoring to identify key threats as well as protecting known sites of the listed community through the development of conservation agreements and covenants would also help to protect this listed community.

Clearing and land development pose serious threats to the Natural Temperate Grassland of the Victorian Volcanic Plain. These activities remove the vegetation and seedbank, further fragmenting the listed community. This has a significant negative impact on the biodiversity of the region.

There are benefits to the long-term protection of native biodiversity. Native vegetation remnants, such as the listed grassland ecological community, provide a range of ecosystem services across an area of Australia regularly hit hard by drought, including retention of water and soil nutrients, reducing erosion and salinity, and carbon storage. Farmers are encouraged to investigate techniques such as pasture cropping or cell grazing which may improve production and minimise impacts to biodiversity.

Below is a table showing some other potential threats for the Natural Temperate Grassland of the Victorian Volcanic Plain listed community as well as possible actions that land managers may take to benefit the conservation of the listed community and their land. This list is not exhaustive but highlights conservation actions of high priority at the time of listing.



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Threat	Impact	Management Actions/Outcomes
Heavy grazing	<ul><li>Vegetation removal</li><li>Soil compaction</li><li>Decrease in water uptake</li><li>Accelerated weed invasion</li></ul>	<ul> <li>Prevent trampling and excessive grazing pressure at known grassland sites</li> <li>Develop strategic grazing regimes</li> <li>Promoting native vegetation may lead to healthier soils and improved water retention in the long term</li> </ul>
Lack of fire	<ul> <li>Smothering of wildflowers by dense grass cover</li> <li>Loss of habitat for native animals</li> </ul>	Develop strategic ecological fire regimes
Exotic plant invasion	<ul> <li>Introduced plants compete with native plants for space, water and nutrients</li> <li>May lead to pasture degradation as some noxious weeds proliferate</li> </ul>	<ul> <li>Remove key problem species such as Chilean needle-grass and serrated tussock from known grassland sites.</li> <li>Develop and use long-term management plans for controlling key exotic plant species in the region</li> <li>Replant with local native grassland species</li> </ul>
Herbicide application	<ul> <li>Herbicides can kill native grassland plants</li> <li>Chemicals can also injure grassland animals such as insects and frogs</li> </ul>	Take care that chemical applications don't adversely affect the ecological community  Use a combination of weed removal techniques, such as spot-spraying, hand removal and burning
Fertiliser addition	Fertilisers can kill native grassland plants (they prefer low nutrient soils)	<ul> <li>Ensure fertilisers are not used in or near the native grassland</li> <li>Promoting native grassland saves on fertiliser applications</li> </ul>

# Can I get funding to protect grasslands on my property?

If you have the grassland on your property you may be eligible for funding to help preserve or restore remnants.

Funding through Caring for our Country may be available for activities that are undertaken which have an environmental benefit. For more details: www.nrm.gov.au/funding/future.html

The National Reserve System (NRS) has an important role in protecting biodiversity values on private land in agricultural and pastoral regions. Building the NRS is one of the priorities under Caring for our Country. Funding is open to farmers and others who seek financial support to either purchase land or establish protected areas on private land for inclusion in the NRS. For more details: www.nrm.gov.au/funding/nrs.html

There may be state government initiatives to help protect the grassland, as it is also a State-listed threatened community. Regional offices of the Victorian Department of Sustainability and Environment (DSE) or Catchment Management Authorities (CMAs), or their websites, can provide you with information about any current programs in place to support conservation efforts on private property.

# Where can I get further information?

DSE has prepared an action statement that includes useful management advice for this ecological community: Action Statement No 182. Central Gippsland Plains Grassland, Forest Red Gum Grassy Woodland, Northern Plains Grassland, South Gippsland Plains Grassland, Western (Basalt) Plains Grassland. This is available at: www.dse.vic.gov.au/dse/index.htm under Native Plants and Animals.

Action statements for many of the species of special importance may also be found here.

For further information DSE can be contacted on 136136.

Guides to identification and management of the grassland community include:

 Barlow, T. 1999. Grassy Guidelines. How to Manage Native Grasslands and Grassy Woodlands on your Property. Trust for Nature Victoria, Melbourne, Victoria.

The guide is available at: www.environment.gov. au/land/publications/grassguide/

- Kirkpatrick, J.B., McDougall, K. & Hyde, M. (1995)
   Australia's most threatened ecosystem: the
   southeastern lowland native grasslands. World Wide
   Fund for Nature Australia. Surrey Beatty & Sons
- Lunt, I., Barlow, T. & Ross, J. (1998) Plains Wandering: exploring the grassy plains of south-eastern Australia.
   Victorian National Parks Association Inc. and Trust for Nature (Victoria).
- Grassland Species of the Victorian Volcanic Plain (2006) A fold-out pictorial guide to some key grassland species compiled by the Victorian Department of Sustainability and Environment. For a copy contact DSE or a local CMA in the Victorian Volcanic Plain region.



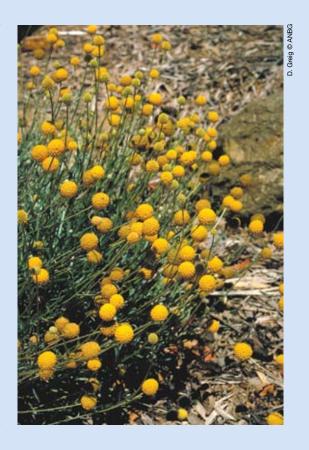
#### Additional copies

If you would like extra copies of this publication please contact the Community Information Unit of the Department of the Environment, Water, Heritage and the Arts.

Email ciu@environment.gov.au Freecall 1800 803 772

#### **Useful websites**

- EPBC Act web site www.environment.gov.au/epbc
- EPBC Act Administrative Guidelines on Significance
   www.environment.gov.au/epbc/ assessmentsapprovals/guidelines/index.html
- Information about nationally threatened ecological communities and species www.environment.gov.au/cgi-bin/sprat/ public/sprat.pl
- Caring for our Country What can I do? www.nrm.gov.au/do/landholders/index.html
- National Farmers' Federation www.nff.org.au/
- Stipa Native Grasses Association Inc. www.stipa.com.au/bwWebsite/
- South West Integrated Flora & Fauna Team http://bird.net.au/bird/index. php?title=SWIFFT



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