Australian Government
Department of the Environment,
Water, Heritage and the Arts




Lowland Native Grasslands of Tasmania

A nationally threatened ecological community
Environment Protection and Biodiversity Conservation Act 1999
Policy Statement 3.18

This brochure is designed to assist land managers, owners and occupiers as well as environmental assessment officers and consultants to identify, assess and manage the Lowland Native Grasslands of Tasmania. The grasslands are a threatened ecological community listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) - Australia's national environment law.

The brochure is a companion document for the listing advice which can be found in the Australian Government's species profile and threats database (SPRAT). The SPRAT Lowland Native Grasslands of Tasmania ecological community profile can be found at:
www.environment.gov.au/cgi-bin/sprat/public/publiclookupcommunities.pl
At this website, click on the Details link to download the documents and map for the ecological community.

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Poa landscape

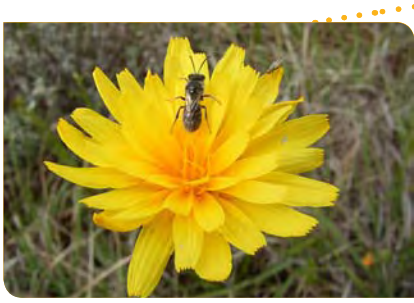
WHAT IS A NATIONALLY THREATENED ECOLOGICAL COMMUNITY?

An ecological community is a naturally occurring group of plants, animals and other organisms that are interacting in a unique habitat. Its structure, composition and distribution are determined by environmental factors such as soil type, position in the landscape, altitude, climate, and water availability. Species within such ecological communities interact and depend on each other - for example, for food or shelter. Types of ecological communities listed under national environment law include woodlands, grasslands, shrublands, forests, wetlands, ground springs and cave communities.

Together with threatened species, threatened ecological communities listed under the EPBC Act are protected as one of several matters of national environmental significance. Threatened ecological communities can be listed as **vulnerable, endangered** or **critically endangered,** categories which represent their decline and potential for extinction across their national extent. Protection through the EPBC Act is vital for some ecological communities because many patches occur outside conservation reserves. It can also complement other conservation measures.

As well as being important because of their unique biodiversity and place within the Australian landscape, threatened ecological communities provide a range of ecosystem services. These can include the natural management of air, water and soil nutrients, the reduction or control of erosion and salinity, and carbon storage. In addition, they provide vital wildlife corridors and habitat refuge for many plant and animal species, including some of which are threatened and listed under national environment law. Threatened ecological communities can also provide a focus for tourism and recreation and contribute to the productivity of our farmlands. Benefits to farmers of protecting ecological communities can include facilitating pollination of agricultural plants, maintaining healthy soils leading to improved crop yields, and supporting soil born microbes that release minerals for plant uptake, as well as managing water tables and run-off.

More information on nationally threatened ecological communities can be found at: www.environment.gov.au/biodiversity/threatened/index.html



Native bee on *Microseris lanceolata* (yam daisy)

WHAT ARE THE LOWLAND NATIVE GRASSLANDS OF TASMANIA?

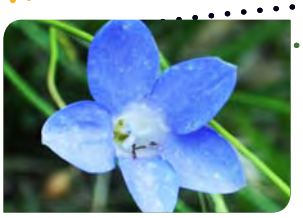
The Lowland Native Grasslands of Tasmania is a critically endangered ecological community listed under the national environment law.

Native grasslands are generally defined as areas of native vegetation dominated by native grasses with few or no emergent woody species. Herbaceous plants are the dominant life form in Tasmania's lowland native grasslands with most of the biomass consisting of a single dominant species e.g. kangaroo grass or silver tussock grass. Despite the dominance of grass species, grasslands can be extremely rich in other plant species. Herbs such as lilies, daisies and orchids often occupy the spaces between native grass tussocks.

There are various types of native grassland in Tasmania but this ecological community is comprised of two major sub-types differentiated by the dominant native tussock-forming perennial grass species: Lowland *Poa labillardierei* (silver tussock grass) Grassland and Lowland *Themeda triandra* (kangaroo grass) Grassland.

The vegetation of the Lowland Native Grasslands of Tasmania ecological community is mostly limited to a ground layer of grasses and other herbs. Trees and shrubs are usually absent to sparse. The grasslands typically occur in areas up to 600 metres above sea level, generally on soils underlain by basalt, dolerite, deep sands or alluvial deposits.

- **The remnant Lowland Native Grasslands of Tasmania is regarded as one of Tasmania's most threatened and fragmented ecosystems and the most depleted vegetation formation in Tasmania.**
- **The Lowland Native Grasslands of Tasmania ecological community generally exists as small fragmented remnants within its range and by 2009 more than 83 per cent has been lost since European settlement.**
- **The majority of patches are found on private land. Implementing or continuing sustainable land use practices is encouraged at sites containing this ecological community.**
- **The Lowland Native Grasslands of Tasmania provides vital support to a diverse range of plants and animals that are important for maintaining and improving biodiversity.**



Wahlenbergia spp.
(bluebell)

WHERE IS THE ECOLOGICAL COMMUNITY FOUND?

The Lowland Native Grasslands of Tasmania ecological community typically occurs at elevations up to 600 metres above sea level in the Tasmanian Midlands, Derwent Valley, east coast and southeast Tasmania. Localised areas of the ecological community also occur in northwest Tasmania and on Flinders and Cape Barren Islands in Bass Strait.

The Lowland Native Grasslands of Tasmania is a part of the lowland temperate grassland vegetation group that occurs in fragmented areas throughout southeastern Australia. This vegetation group is broadly associated with particular bioregions or subregions, as defined by the Interim Biogeographic Regionalisation for Australia (IBRA). The IBRA bioregions in which the ecological community most commonly occurs are the Northern Midlands and South East bioregions. It can also be found in small patches near the margins of the Ben Lomond, Northern Slopes, King, Flinders, Central Highlands and Southern Ranges IBRA bioregions.

The grasslands are generally concentrated where rainfall is low and the soils are heavy, deep, mineral and fertile. The ecological community is typically absent from rocky or highly infertile sites. The grasslands generally occur on soils underlain by basalt, dolerite, deep sands or alluvial deposits. There may be considerable variation in the composition of individual patches of the listed community within any given bioregion due to influences of climate, topography, fire and land use.

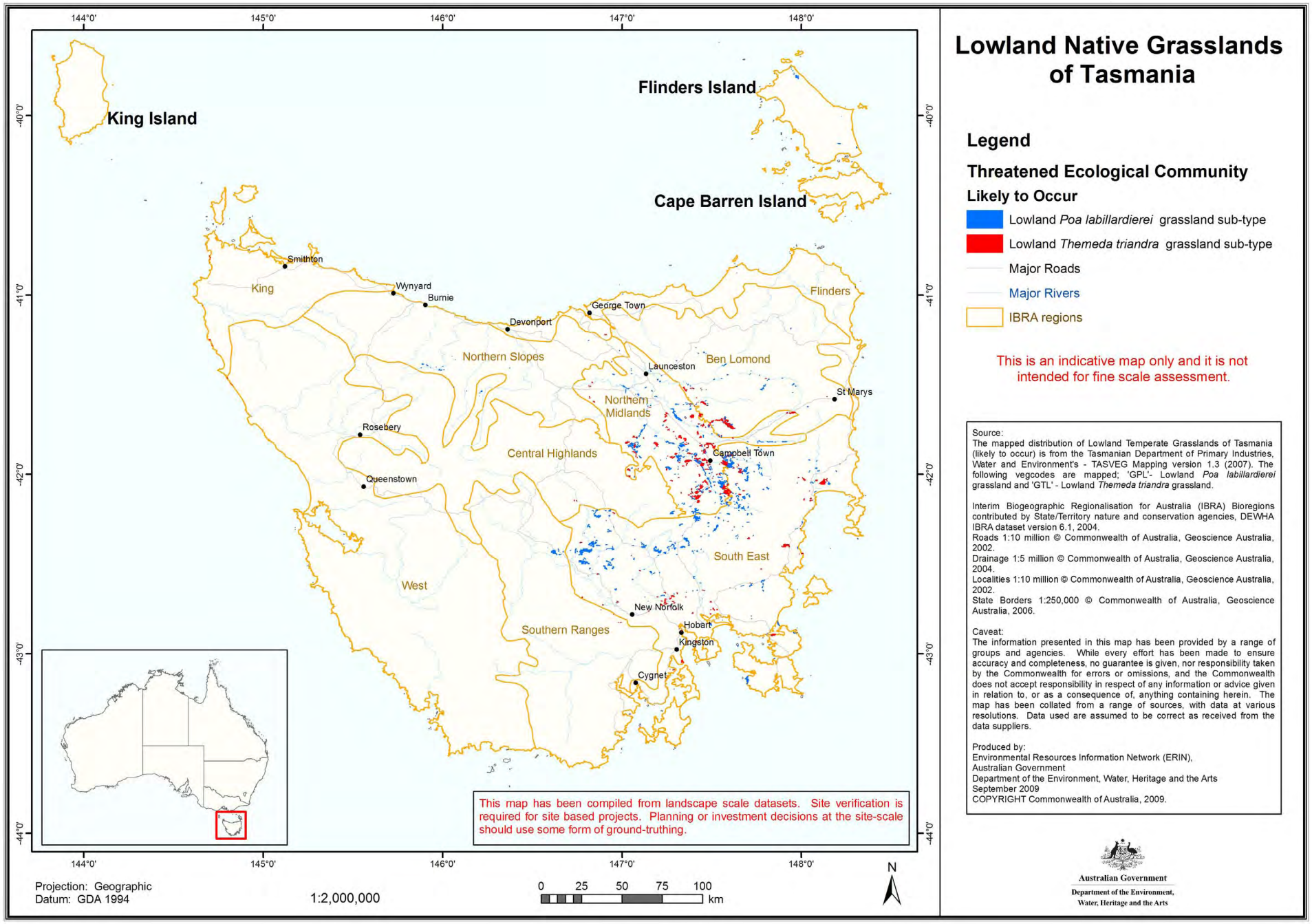
Today, the majority of the ecological community is on private property, with some small remnants along roadsides, in local reserves and in some cemeteries. The total area of the lowland native grasslands in conservation related land tenure is approximately 1900 hectares (as at June 2008). This represents only nine per cent of the remaining ecological community.

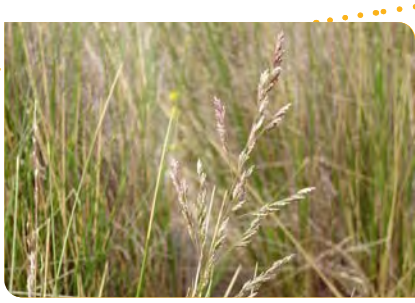
Lowland Native Grasslands of Tasmania is found in the South, North and North West Natural Resource Management Regions.

Figure 1 shows the areas where the Lowland Native Grasslands of Tasmania ecological community is likely to occur. Any mapped vegetation units should only be used as a guide. It is not possible to prepare a precise map which shows all remnants of the grasslands. Native grasslands are difficult to map using aerial photography or satellite imagery. Grassland mapping is also difficult because many remnants are now limited to very small, disparate and fragmented patches that cannot be shown on a map at this scale. Mapping is also problematic because the condition of the grassland can change over time.

On site assessment is required to determine if the ecological community is present at a particular site. The following section and the flowcharts on pages 12 and 13 provide guidance when assessing a site.

Figure 1 Map showing areas where the Lowland Native Grasslands of Tasmania ecological community is likely to occur.





Poa labillardierei (silver tussock grass).

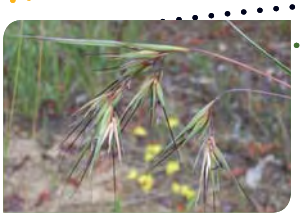
HOW DO I KNOW IF I AM STANDING IN A PATCH OF THE LOWLAND NATIVE GRASSLANDS OF TASMANIA?

This section is designed to help you determine if a native vegetation remnant could be part of the listed Lowland Native Grasslands of Tasmania ecological community. The *description* and *condition thresholds* of the ecological community in the EPBC Act listing advice provide the definitive source of information for identifying the nationally threatened ecological community. The description in the listing advice is summarised and further explained in the following pages.

A patch of the listed ecological community is defined as a discrete and continuous area that comprises the ecological community. It does not include substantial elements of other ecological communities, such as nearby woodlands and other types of grasslands. However, a patch of the listed ecological community may include small-scale disturbances, such as tracks or breaks that do not alter its overall functionality, for instance, the easy movement of wildlife or dispersal of plant spores and seeds.

If a native vegetation remnant meets all of the criteria that follow, then you are likely to be standing in the Lowland Native Grasslands of Tasmania listed ecological community. Assistance with identification of species may be obtained from your local council, community Landcare group, Natural Resource Management group or state agency. The Department of the Environment, Water, Heritage and the Arts (the department) can also provide advice.

There are more than 100 species of plants that may be part of the ecological community and a large number of animals that may be found in or near the grasslands. Species lists can be found in the listing advice in SPRAT.



Themeda triandra (kangaroo grass).

What is the native vegetation like?

The Lowland Native Grasslands of Tasmania ecological community is comprised of two grassland sub-types:

- Lowland *Poa labillardierei* (silver tussock grass) Grassland
- Lowland *Themeda triandra* (kangaroo grass) Grassland

These sub-types can be distinguished by the dominant native grass species and, sometimes, their position in the landscape.

Lowland *Poa labillardierei* (silver tussock grass) Grassland

This sub-type is relatively species-poor and consists of grasslands dominated by tussocks of silver tussock grass. Other herbs such as lilies, daisies and orchids occupy the inter-tussock spaces. Tussocks may be large and spreading or small and tufty depending on the situation and site history. The grass tussocks may form a closed sward or an open layer with smaller grasses, forbs and lichens in the inter-tussock spaces. Weed species are generally more common in this sub-type of the ecological community. It is usually less floristically diverse than the Lowland *Themeda triandra* Grassland sub-type.

The Lowland *Poa labillardierei* Grassland sub-type is generally treeless and often occurs adjacent to, or intermixed with, *Eucalyptus ovata* (black gum) grassy woodland. Where trees are present the tree cover is typically very low (e.g. less than five per cent) and species may include black gum, *E. viminalis* (white gum) or *E. pauciflora* (cabbage gum).

Lowland *Themeda triandra* (kangaroo grass) Grassland

This sub-type is dominated by kangaroo grass and typically is floristically diverse. Other common grasses include species of *Austrodanthonia* (wallaby grasses), *Austrostipa* (spear grasses) and *Poa* genera. The sub-type is often characterised by a rich variety of lilies, orchids, daisies and other herbs in patches between grass tussocks although it can occur where kangaroo grass dominates almost to the exclusion of other species.

The Lowland *Themeda triandra* Grassland sub-type is generally treeless but scattered, low trees (e.g. black gum, white gum, cabbage gum, *E. rubida* (candlebark) and *E. amygdalina* (Tasmanian black peppermint)) can occur at low densities. *Acacia dealbata* (silver wattle), *A. mearnsii* (black wattle), *A. melanoxylon* (blackwood), *Allocasuarina* spp., *Bursaria spinosa* (prickly box) and *Dodonaea viscosa* (hop bush) can form a scattered small-tree or tall shrub layer, especially on slopes.

Most of this sub-type occurs in the Tasmanian Midlands. However, there are a number of floristic variants of the Lowland *Themeda triandra* Grassland sub-type. These include: sub-coastal grasslands co-dominated by kangaroo grass and *Poa rodwayi* (velvet tussock grass) in northwest Tasmania; and, the grasslands dominated by kangaroo grass in areas exposed to a high incidence of salt spray in northeast Tasmania.

Where is a grasslands patch usually located in the landscape?

Remnants of the Lowland *Poa labillardierei* (silver tussock grass) Grassland sub-type are typically found on alluvial flats in valley bottoms and on gentle slopes. Where water inundation of sites is common, the tussocks are often interspersed with flood-scoured and water-filled hollows.

Remnants of the Lowland *Themeda triandra* (kangaroo grass) Grassland sub-type occur on sites that are generally drier than those occupied by the Lowland *P. labillardierei* Grassland sub-type. They occur on valley flats and well-drained slopes on basalt, dolerite and deep sands.

The coastal grasslands co-dominated by kangaroo grass and velvet tussock grass occur on stable calcareous dunes of the near coastal zone in the Arthur-Pieman Conservation Area, northwest Tasmania. Locations on fertile soil and areas exposed to a high incidence of salt spray such as Waterhouse, Cape Portland and Butlers Point in northeast Tasmania also support some coastal grasslands dominated by kangaroo grass.

Patches of both sub-types and all variants generally occur at elevations less than 600 metres above sea level, although can occur up to 700 metres above sea level. The grasslands are often used as native pasture in agricultural land, and can also occur as small remnants on roadsides, country cemeteries and utilities reserves.

Condition Thresholds

Condition thresholds were established when the ecological community was listed to determine which patches of grassland are of greatest value and which therefore receive full protection as a matter of national environmental significance under the EPBC Act. The decision flowcharts on pages 12 and 13 present the condition thresholds in a way that can be used on site to assess a patch of native vegetation and determine if it is part of the listed grassland community.

The condition thresholds are designed to protect those vegetation remnants in good to excellent condition. Many patches of native grassland are in a significantly degraded state and will not meet the condition thresholds.

Appropriate management of patches that do not meet the condition thresholds is recommended as they may still play an important ecological role, especially where they are providing valuable habitat or connectivity. For example, patches that link native vegetation remnants in the landscape are particularly important as wildlife habitat and to the viability of listed patches of the ecological community. Other native grasslands in Tasmania, for example those dominated by spear grasses and/or wallaby grasses, are also important, especially where they occur adjacent to, or near, patches of the Lowland Native Grasslands of Tasmania ecological community. They provide similar benefits to native fauna by providing food and shelter and contribute to local and regional biodiversity.

Country cemeteries can contain important lowland grassland remnants. This cemetery has important populations of threatened grassland orchid species that are only found in the Midlands of Tasmania.

The listing of an ecological community can also lead to funding opportunities. Both patches that meet the condition thresholds and those that do not should be considered in recovery and other management actions, including through the Australian Government's Caring for Our Country initiative (see page 29). Patches that do not currently meet the condition thresholds may be eligible for funding to help restore them to good condition.

Grassland paperdaisy

Assessment Considerations

The species composition and appearance of the ecological community, and its position in the landscape, are driven by the influences of precipitation, soils, temperature and historical and current land use. These influences may vary the appearance of the ecological community over even small distances or from year to year and among seasons. It is difficult to distinguish the difference between natural grasslands and those derived through the removal of woodland trees from grassy woodland communities. These derived, or human-induced, grasslands can be similar in vegetation composition and structure to natural grasslands. They can also be extremely rich in native species and contain numerous threatened species. Derived grasslands are included in the listed ecological community where the description and condition thresholds are met.

Not all species can be seen year round. Most are evident in spring when warmth and moisture tend to coincide. Inter-tussock spaces can be occupied in favourable parts of the year by lilies and orchids, which in inhospitable seasons survive as roots, bulbs or tubers and give way to lichen crusts that cover the soil.

The condition thresholds are based on features that apply all year round, with the exception of the cover of native wildflowers. This feature is best assessed during spring and summer because it is only during this time when many native species with bulbs or tubers (e.g. lilies, orchids) occur above

ground and when most species are flowering. Assessments should be made at this time to best ascertain the biodiversity value of a grassland patch. In addition, the site must not have been excessively disturbed by, for instance fire, heavy grazing or mowing, for at least two months prior to assessment. This approach is recommended because many plant species may not be visible immediately after a disturbance. For example, highly palatable or grazing-sensitive native species may disappear from sites that have been heavily grazed. In addition, the area of a patch with the most apparent diversity of native species should be selected to determine estimates of native species richness and cover. The cover of weed species can also be very variable according to the time of year, the type of season, recent management and disturbance events, and climate conditions.

The Lowland Native Grasslands of Tasmania may also intergrade with grassy woodland communities and the wetter vegetation communities in riparian zones and share species composition and structural affinities with these other ecological communities. These other vegetation types are excluded from the national ecological community in their own right. See the section on '*How does the listed ecological community relate to known vegetation classification systems?*' (page 21) for more information on this issue.

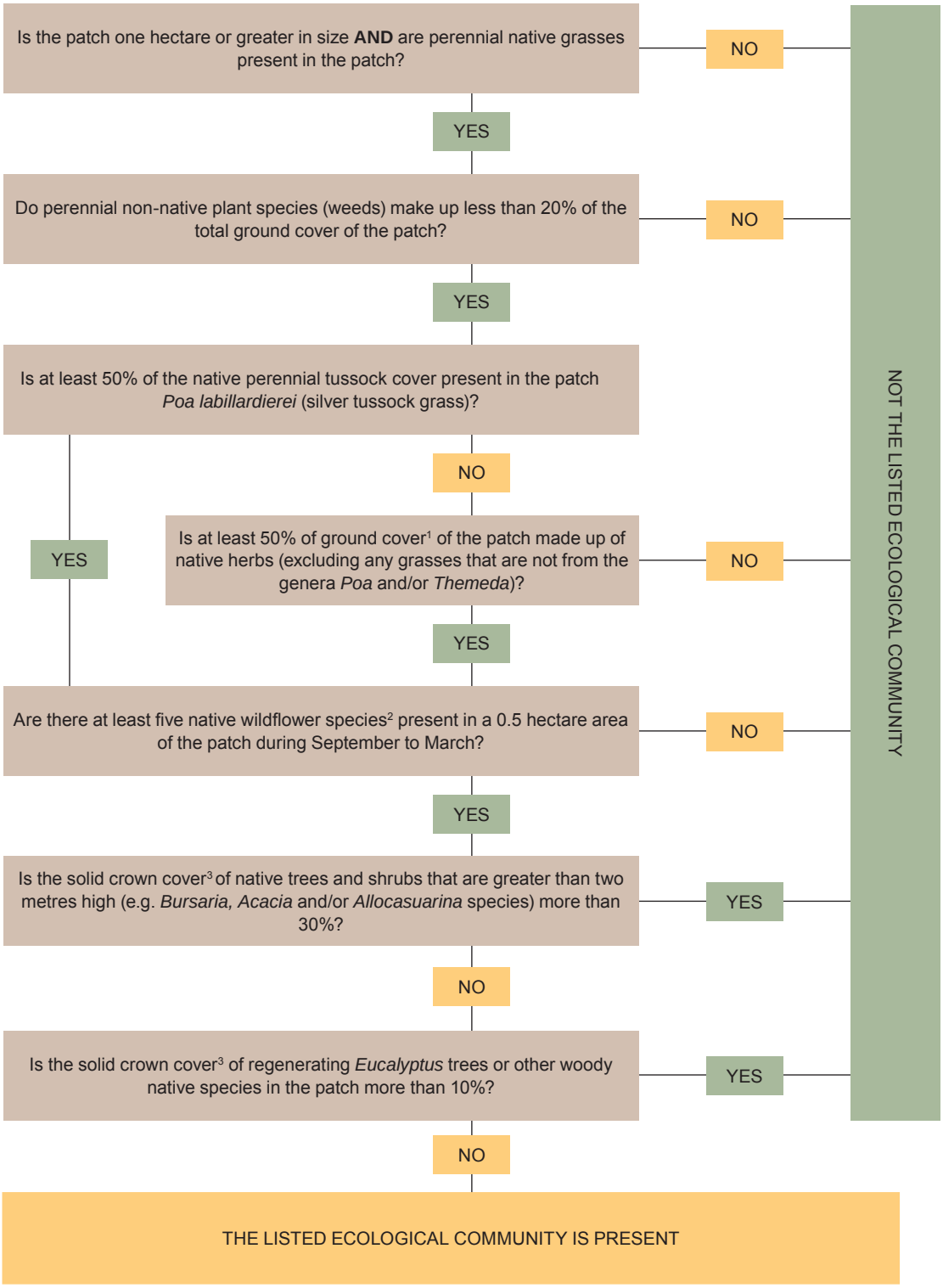
Decision Flowcharts

The flowcharts on pages 12 and 13 represent the lowest condition at which patches of vegetation are included in the listed ecological community. Large patches, those that link remnants in the landscape, those that have high native species richness, those that occur in highly modified agricultural or urban regions and those that contain rare, declining or threatened species, are particularly important for the long-term future of the ecological community.

The flowcharts can be used to determine if the listed ecological community is present at a particular site. Separate flowcharts are provided for the different grassland sub-types. The appropriate flowchart will depend on whether silver tussock grass or kangaroo grass is the dominant native grass species.

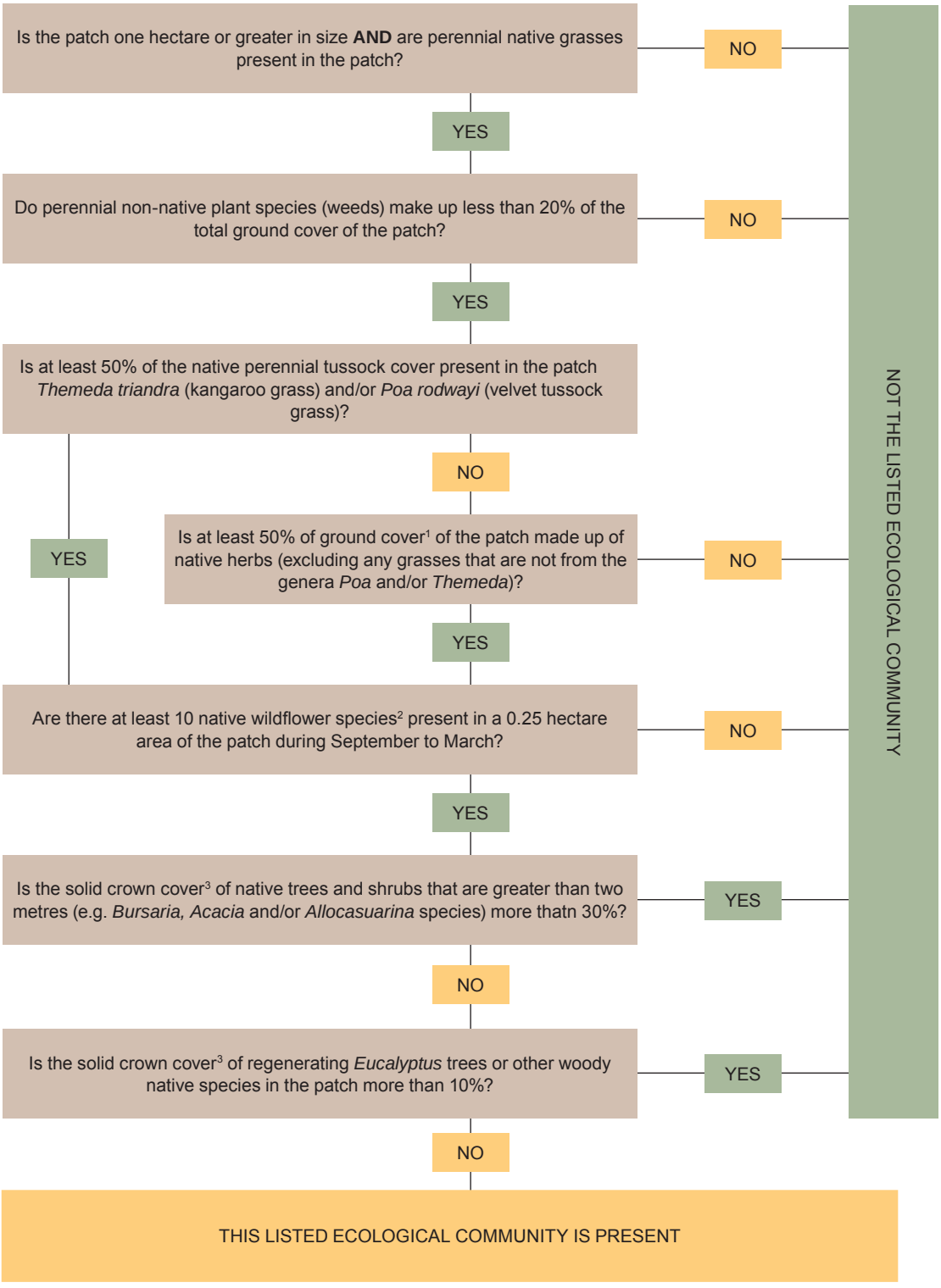
Bulbine lily

Lowland *Poa labillardierei* (silver tussock grass) Grassland



1 Ground cover includes all living material in the ground layer (e.g. herbs, lichens).
2 Wildflowers include all native herbaceous plant species, excluding grasses, sedges and rushes.
3 Solid crown cover assumes the density of tree canopy is solid rather than opaque. It is equivalent to the crown-diameter method of cover measurement.

Lowland *Themeda triandra* (kangaroo grass) Grassland



1 Ground cover includes all living material in the ground layer (e.g. herbs, lichens).
2 Wildflowers include all native herbaceous plant species, excluding grasses, sedges and rushes.
3 Solid crown cover assumes the density of tree canopy is solid rather than opaque. It is equivalent to the crown-diameter method of cover measurement.

KEY SPECIES

Flora

The native grass species that dominate the Lowland Native Grasslands of Tasmania are *Poa labillardierei* (silver tussock grass) and *Themeda triandra* (kangaroo grass). A large number of other species are typically found in the grasslands although sometimes *Poa* and *Themeda* can dominate to the exclusion of other species. Lists of characteristic species for each of the grassland sub-types can be found in the listing advice in SPRAT. Photographs of some of these species are presented below and opposite.

Some key species that may occur in good quality patches of the Lowland *Themeda triandra* Grassland sub-type include:

- Native Asteraceae (native daisies) particularly *Leptorhynchos squamatus* (scaly buttons) and *Chrysocephalum apiculatum* (common everlasting);
- Short or prostrate shrubs – including *Pimelea humilis* (dwarf rice flower), *Hibbertia* species (guinea flowers);
- Native Fabaceae (native peas) – including *Bossiaea prostrata* (creeping bossiaea), *Glycine* species (native clovers);
- Epacridaceae species (native heaths) - including *Lissanthe strigosa* (peachberry heath), *Astroloma humifusum* (native cranberry);
- Orchid species (native orchids) – including *Pterostylis* species (greenhoods); and
- Lily species (native lilies) – including *Arthropodium* species (vanilla lilies).

Poa labillardierei (silver tussock grass).

Themeda triandra (kangaroo grass).

Themeda triandra (kangaroo grass).

Poa labillardierei (silver tussock grass).

Microlaena stipoides (weeping grass).

Austrodanthonia spp. (wallaby grass).

Elymus scaber (wheatgrass).

Austrostipa spp. (speargrass).

Eucalyptus ovata (black gum).

Wahlenbergia spp. (bluebell).

Chrysocephalum apiculatum (common everlasting).

Dodonaea viscosa (hop bush).

Lomandra longifolia (sagg).

Tricoryne elatior (yellow rushlily).

Bursaria spinosa (prickly box).

Convolvulus angustissimus (blushing bindweed).

Cheilanthes spp. (rockfern).

Scleranthus spp. (knawel).

Leptorhyncos spp. (buttons).

Dichondra repens (kidneyweed).

Bulbine spp. (bulbine lily).

Acaena novae-zelandiae (buzzy).

Ptilotus spathulatus (pussytails)

Oxalis perennans
(woodsorrel).

Brachyscome aculeata
(hill daisy).

Acaena echinata
(shiny sheepsburr).

Eryngium ovinum
(blue devil).

Solenogyne dominii
(smooth flat-herb).

Wurmbea dioica
(early nancy).

Pimelea humilis
(dwarf riceflower).

Acacia mearnsii
(blackwattle).

Fauna

The lowland native grasslands fulfil particular ecological roles for a number of animals. For example, the native grasses and other herbs produce large quantities of seed, which is an important food source for many insects and several bird species (e.g. *Gallinula mortierii* (Tasmanian native hen)). The dense grass tussocks also provide habitat for many smaller vertebrates and invertebrates. Insects and lizards can avoid predation in the dense grass sward and can hibernate during the colder months by burrowing deeply into the base of the tussocks. A number of marsupials graze on the native grasses and some use the tussocks for shelter.

Some animals are also important for the function and health of the grasslands. Native birds consume large numbers of leaf-eating insects and pasture grubs, and are important for the pollination and seed dispersal of many plants. Aerial-feeding species of birds and bats take many flying insects from above and within the grasslands, and raptors help to control introduced mammal and bird populations (e.g. such as European rabbit and common blackbird).

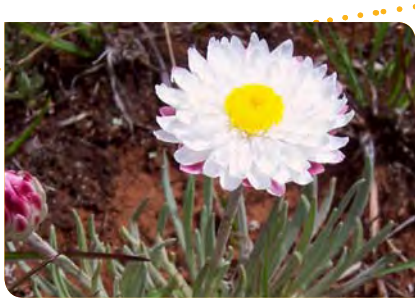
Small ground-dwelling native mammals help with the formation of healthy topsoils through their constant diggings and scratching and interactions with soil biota. This, in turn, can improve water infiltration, nutrient cycling, seed dispersal and germination and seedling establishment. In Tasmania, the digging marsupials and monotremes are *Bettongia gaimardi gaimardi* (Tasmanian bettong), *Potorous tridactylus* (long-nosed potoroo), *Isoodon obesulus affinis* (southern brown bandicoot), *Perameles gunnii gunnii* (eastern barred bandicoot), *Vombatus ursinus* (common wombat) and *Tachyglossus aculeatus* (short-beaked echidna).

Bandicoots and some insects (e.g. native wasps) also play an important role in maintaining the ecological balance of insect pests. Bandicoots are known to feed on pasture pests (e.g. corbie moth larvae *(Oncopera intricata)* and cockchafer beetle larvae (Family Scarabaeidae)) in the soil of grasslands, while some insect larvae parasitise these same pests.

Marsupial grazers (e.g. forester kangaroos, wombats, pademelons and wallabies) influence the height and density of the grass swards through grazing and therefore affect the diversity of plant species found at grassland sites.

Some photographs of thretened animals found in the Lowland Native Grasslands of Tasmania are presented on page 20.

Southern brown bandicoot



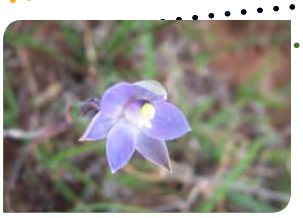
Leucochrysum albicans var. *tricolor*
(grassland paper daisy)

SPECIES OF SPECIAL IMPORTANCE

The Lowland Native Grasslands of Tasmania ecological community is home to many Tasmanian-endemic and threatened plant and animal species. At the national level, 25 species associated with the ecological community are listed as threatened under the EPBC Act. Approximately 60 flora and fauna species associated with the grasslands are also listed under state environment law, the Tasmanian *Threatened Species Protection Act 1995.*

Table 1 lists those plant and animal species that are listed under the EPBC Act and which may be found in or near the ecological community. Photographs of some of these species are also presented on page 20.

Eastern-barred bandicoot



Thelymitra imbricata
(broad sunorchid)

Table 1. Nationally threatened species listed under the *Environment Protection and Biodiversity Conservation Act 1999* likely to occur in or near the Lowland Native Grasslands of Tasmania ecological community. Known occurrences of some species may be in landscapes or vegetation communities near to the national ecological community. Current as at July 2009.

Species name	Common name(s)	EPBC Status
Birds		
Aquila audax fleayi	wedge-tailed eagle (Tasmanian)	Endangered
Mammals		
Dasyurus maculatus maculatus (Tasmanian population)	spotted-tail quoll, tiger quoll	Vulnerable
Perameles gunnii gunnii	eastern-barred bandicoot	Vulnerable
Sarcophilus harrisii	Tasmanian devil	Endangered
*Vombatus ursinus ursinus**	Bass Strait wombat	Vulnerable
Invertebrates		
Engaeus spinicaudatus	Scottsdale burrowing crayfish	Endangered
E. orramakunna	Mount Arthur burrowing crayfish	Vulnerable
Plants		
Austrodanthonia popinensis	roadside wallaby grass	Endangered
Ballantinia antipoda	southern ballantine	Endangered
Caladenia anthracina	black-tipped spider-orchid	Critically Endangered
Carex tasmanica	curly sedge	Vulnerable
Colobanthus curtisiae	Curtis's colobanth	Vulnerable
Dianella amoena	matted flax-lily	Endangered
Glycine latrobeana	clover soybean	Vulnerable
Lepidium hyssopifolium	basalt peppercress	Endangered
Leucochrysum albicans var. tricolor	grassland paper daisy / hoary sunray	Endangered
Prasophyllum tunbridgense	Tunbridge leek-orchid	Endangered
Prasophyllum incorrectum	golfers leek-orchid	Endangered
Prasophyllum olidum	pungent leek-orchid	Critically Endangered
Pterostylis commutata	Midland greenhood	Critically Endangered
Pterostylis cucullata	leafy greenhood	Vulnerable
Pterostylis rubenachii	Arthur River greenhood	Endangered
Pterostylis wapstrarum	fleshy greenhood	Critically Endangered
Pterostylis ziegeleri	grassland greenhood	Vulnerable
Ranunculus prasinus	Tunbridge buttercup	Endangered

* Found only on Flinders Island

The following photos show some endemic species and some of the species listed under the *Environment Protection and Biodiversity Conservation Act 1999* associated with the Lowland Native Grasslands of Tasmania ecological community

Vu: Vulnerable
En: Endangered
CE: Critically Endangered

Sarcophilus harrisii
(Tasmanian devil) - En

Perameles gunnii gunnii.
(eastern-barred bandicoot) - Vu

Ranunculus prasinus
(Tunbridge buttercup) - En & Endemic

Thelymitra imbricata
(broad sunorchid) - Endemic

Glycine latrobeana
(clover soybean) - Vu

Aquila audax fleayi
(wedge-tailed eagle) - En

Carex tasmanica
(curly sedge) - Vu

Dianella amoena
(matted flax-lily) - En

Leucochrysum albicans var. *tricolor*
(grassland paper daisy) - En

Dasyurus maculatus maculatus
(spotted-tail quoll) - Vu

How does the listed ecological community relate to known vegetation classification systems?

The Lowland Native Grasslands of Tasmania can be related to the vegetation classification systems used at both the national and state level.

The National Vegetation Information System (NVIS) is a hierarchical system for classifying vegetation across Australia. It ranges from broad Major Vegetation Groups and Subgroups to more fine-scale floristic sub-associations. The Lowland Native Grasslands of Tasmania ecological community falls within the NVIS Formations '*Themeda* mid tussock grassland' and '*Poa* mid tussock grassland'. These are subsets of the Major Vegetation group 19 – 'tussock grasslands'.

For more information about NVIS go to: www.environment.gov.au/erin/nvis/index.html

TASVEG is a Tasmanian Government classification system used to describe and map vegetation communities across the state. The Lowland Native Grasslands of Tasmania ecological community equates with two TASVEG floristic communities.

(1) **Lowland *Poa labillardierei* Grassland (TASVEG code: GPL)**

This floristic community includes all natural and disturbance-induced (derived) grasslands dominated by silver tussock grass that occur at elevations of generally less than 600 metres. Two variants of this ecological community, differentiated by landscape position, have been described in TASVEG:

- Lowland *Poa labillardierei* Grassland on valley bottoms and river banks, and
- Lowland *Poa labillardierei* Grassland on slopes.

The Lowland Native Grasslands of Tasmania ecological community equates with this TASVEG floristic community in full where the condition thresholds presented in the listing advice have been met.

(2) **Lowland *Themeda triandra* Grassland (TASVEG code: GTL)**

This floristic community includes all natural and disturbance-induced grasslands dominated by kangaroo grass, as well as sub-coastal grasslands co-dominated by *P. rodwayi* in the northwest. The Lowland Native Grasslands of Tasmania ecological community equates with this TASVEG floristic community in full where the *condition thresholds* presented in the listing advice have been met.

Similar ecological communities

The Lowland Native Grasslands of Tasmania ecological community may be adjacent to, similar to, or intergrade with, a number of other native vegetation communities. For example, it may intergrade with grassy woodland communities and with wetter vegetation communities in riparian zones. It may also occur as part of a mosaic of other native vegetation communities.

Examples of vegetation types which may be similar to, intergrade with, or occur close to the Lowland Native Grasslands of Tasmania include:

- *Eucalyptus ovata - Callitris oblonga (Black Gum)* Forest (EPBC Act listed)
- Lowland Sedgy grassland (TASVEG code: GSL)
- Rockplate grassland (TASVEG code: GRP)
- Lowland grassland Complex (TASVEG code: GCL)
- *Bursaria-Acacia* woodland and scrub (TASVEG code: NBA)
- Highland *Poa* grassland (TASVEG code: GPH)

These vegetation types are excluded from the national ecological community in their own right. However, where a patch of vegetation meets the *description* and the *condition thresholds* of the Lowland Native Grasslands of Tasmania presented in the listing advice then it forms part of the listed national ecological community.

The *Eucalyptus ovata - Callitris oblonga* (black gum) Forest ecological community is listed as vulnerable under the EPBC Act. This ecological community can occur adjacent to the Lowland Native Grasslands of Tasmania. It occurs along the banks of the St Pauls, Apsley, South Esk, Swan, Brushy, Cygnet and Wye Rivers in Tasmania. There are also two outlying patches (one in Trevallyn near Launceston, and the other near Cranbrook on the east coast).

WHY DOES THE AUSTRALIAN GOVERNMENT LIST THREATENED ECOLOGICAL COMMUNITIES?

The Australian Government is responsible for identifying and protecting matters of National Environmental Significance (NES). These include world heritage properties, national heritage places, Ramsar wetlands (internationally important wetlands), listed migratory species, Commonwealth marine areas, the Great Barrier Reef Marine Park, nuclear actions and nationally listed threatened species and ecological communities. All of these matters of NES are subject to Australia's national environment law, the EPBC Act.

The decision to list an ecological community as nationally threatened is made by the Australian Minister for the Environment. It follows a rigorous process of consultation with stakeholders and the public, workshops and discussions with scientific experts, and advice from the Threatened Species Scientific Committee (TSSC). The TSSC is an independent scientific body that advises the Minister on the conservation status of native species and ecological communities.

The listing of an ecological community under national environment law recognises that its long-term survival is under threat. The aim of listing is to prevent further decline and to promote and assist recovery through landholder and community efforts. Listing may also lead to funding opportunities, such as through the Australian Government's Caring for our Country initiative, to help with recovery and conservation efforts. See page 29 for information on funding opportunities or visit www.nrm.gov.au/funding/index.html for further details.

Why list the Lowland Native Grasslands of Tasmania as critically endangered?

The decision to list the Lowland Native Grasslands of Tasmania as a critically endangered ecological community was made by the Australian Minister for the Environment, Heritage and the Arts in June 2009.

The TSSC found that this ecological community is critically endangered because it has undergone a severe decline in extent and the rate of continuing detrimental change is substantial. It also has a very restricted geographic distribution (as indicated by mostly very small patch sizes) and is subject to significant ongoing threat. There has also been a severe reduction in the ecological community's integrity, and therefore its capacity to maintain ecosystem function, due to fragmentation, weed invasion and loss of species diversity.

Temperate grasslands are one of the most under-represented ecosystems in Australia's conservation estate and are recognised nationally as one of the most threatened vegetation types. The Lowland Native Grasslands of Tasmania is regarded as one of Tasmania's most threatened and fragmented ecosystems and the most depleted vegetation formation in the state. By the beginning of 2009, more than 83 per cent of the grasslands had disappeared since European settlement.

The Tasmanian Midlands, one of the main areas where the Lowland Native Grasslands of Tasmania are found, is one of the 15 national biodiversity hotspots declared by the Australian Government. The grasslands also provide habitat and resources for more than 20 nationally listed threatened species and 60 state listed species.

In addition to their value as habitat for endemic and threatened species, the Lowland Native Grasslands of Tasmania are an economically valuable resource for Tasmania's agricultural sector. About half of Tasmania's sheep graze on native grasslands. Native pastures are known to produce some of the finest wool due to their lower nutritional value and more even growth through the year compared to sown pastures. Sustainable grazing practices are vital to ensure that use of the grasslands in this way does not compromise its long-term survival. The ecological community is also relatively resilient to drought.

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

If the listed ecological community is present at a particular site, maintaining adequate protection and appropriate land use practices are vitally important if the ecological community is to persist for the benefit of future generations.

The listing of the Lowland Native Grasslands of Tasmania ecological community under the EPBC Act will not prevent land managers from continuing to use land in the same way they were before the EPBC Act came into force in July 2000. This is providing that they do not significantly change or intensify their activities (and the activity is lawful).

National protection means any new or intensified activities that may have a significant impact on one or more patches of the listed ecological community should be referred to the Australian Minister for the Environment, Heritage and the Arts for assessment and approval.

Those activities likely to require referral under the EPBC Act (if significant) include, but are not restricted to:

- clearing remnants of native vegetation in or near the listed community (e.g. for irrigation or other changes in farming practice);
- significantly changing drainage and local hydrology;
- significant and adverse changes in grazing or management regimes (such as changing the fire regime or substantially intensifying stocking rates on the grassland);
- introducing potentially invasive exotic pasture species in or near to remnants; or
- applying fertilisers or other chemicals to native remnants.

Yellow rush lilies

Land managers should also note that even if their remnant vegetation does not meet the criteria for the listed ecological community, some plants or animal species that occur within the remnant may be otherwise protected under the EPBC Act.

The EPBC Act allows for some exemptions to the requirement for assessment and approval. This means that some activities may not need to be referred for an assessment or approval under certain circumstances. However, failure to refer an action that has a significant impact on the listed ecological community may have legal consequences such as financial penalties and/or remediation orders.

If you are considering an action that may have an impact on the ecological community, you are encouraged to contact the department about your options. Further information is available on the department's website at:

Exemptions:
www.environment.gov.au/epbc/publications/exemptions.html

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

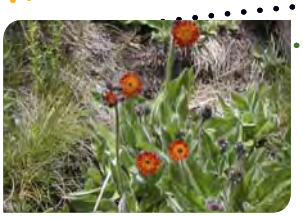
Approvals:
www.environment.gov.au/epbc/approval.html

Enquiries may also be directed to 1800 803 772.

You should also check that no state or local government approvals are required in addition to EPBC Act requirements before undertaking an activity.

Farmers and land managers who have the listed ecological community on their properties are encouraged to seek assistance from the Environment Liaison Officer at the National Farmers' Federation. The Environment Liaison Officer can be contacted by phone on 1800 704 520 or via email at: environment@nff.org.au

Common everlasting



Orange hawkweed can invade native grasslands

GUIDE TO MANAGING THREATS AND SUGGESTED CONSERVATION ACTIONS

The Lowland Native Grasslands of Tasmania occurs predominantly in the low-lying agricultural lands of Tasmania. Since European settlement, much of the former extent of the lowland grasslands has been cleared and converted into other land uses such as cropping and, in some cases, significantly modified by heavy grazing.

Past and current threats continue to affect the Lowland Native Grasslands of Tasmania ecological community today. The main threats include clearing and conversion of land (e.g. to irrigated pasture and cropping) and consequent fragmentation of native vegetation remnants, pasture improvement and fertilisation, invasion by weeds and feral animals, inappropriate grazing, watering and fire regimes, climate change, urban expansion, off-road vehicle disturbance and salinity. The ecological community has a low level of protection in reserves.

Serrated tussock is one of Tasmania's most serious weeds and poses a significant threat to the native grasslands

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 ecological community.

Table 2 summarises some of the key threats to the Lowland Native Grasslands of Tasmania ecological community, the likely impacts, 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. These suggestions are only a guide and some management actions may not necessarily apply to specific land management practices.

Conservation advice has been prepared for the Lowland Native Grasslands of Tasmania ecological community. This document is designed to provide additional management guidance for key threats and is available in SPRAT at the following web address (go to the profile for the ecological community and follow the links):
www.environment.gov.au/cgi-bin/sprat/public/publiclookupcommunities.pl

Table 2: Some key threats faced by the Lowland Native Grasslands of Tasmania ecological community and suggested management actions.

Threat	Impact	Management Actions
Land clearance and conversion (e.g. to irrigated pasture and crops)	• Removes vegetation and seedbank • Can lead to or increase soil erosion • Can exacerbate dryland salinity • Fragmentation of remnants leads to loss of connectivity and exacerbates other threats (e.g. weed invasion) • Can result in loss of species diversity and their ability to maintain the complex interactions of plants and animals in the natural ecosystem • Loss of habitat and extent to inundation	• Identify remnants of high conservation priority • Avoid grassland areas including appropriate buffers • Regulate land clearance • Protect known sites on private land through conservation agreements and covenants, and for crown land, include sites in reserve tenure, where possible • Manage any changes to hydrology (e.g. irrigation and dam building) that may result in changes to water table levels and salinity • Ensure road widening and maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance do not adversely impact on known patches
Fertiliser addition	• Fertilisers can kill native grassland plants (they prefer low nutrient soils)	• Ensure fertilisers are not used in or near the native grassland • Promoting native grassland saves on fertiliser applications
Herbicide application	• Herbicides can kill native grassland plants • Chemicals can also injure grassland animals such as insects and frogs • Broad-cast herbicide use (e.g. aerial spraying) can affect vegetation over large areas due to 'drift' (e.g. settles on native vegetation on adjacent properties)	• 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 • Avoid broad-cast herbicide use
Exotic plant and animal invasion	• Introduced plants compete with native plants for space, water and nutrients • May lead to pasture degradation as some noxious weeds proliferate	• Remove key problem species such as gorse and serrated tussock from known grassland sites • Develop and use long-term management plans for controlling key exotic plant species in the region and preventing new introductions • Replant with local native grassland species • Control introduced pest animals to manage threats, especially to threatened species, at known sites
Heavy grazing	• Vegetation removal • Soil compaction • Decrease in water uptake • Accelerated weed invasion • Accelerated soil erosion	• Prevent trampling and excessive grazing pressure at known grassland sites • Develop strategic grazing regimes for public lands or property management plans that ensure appropriate grazing regimes, such as paddock rotation, are applied on private property • Promoting native vegetation may lead to healthier soils and improved water retention in the long term
Lack of fire	• Smothering of wildflowers by dense grass cover • Loss of habitat for native animals	• Develop and implement strategic ecological fire regimes • Paddock rotation of livestock after fire to improve regrowth of native vegetation

Is funding available to protect the ecological community?

Regardless of whether the ecological community exists on private property, council land or public land, land managers or community groups may be eligible for funding to help preserve or restore remnants.

National

Funding through the Australian Government's Caring for our Country initiative may be available for activities that are undertaken which have an environmental benefit, such as improving land management practices, increasing native habitat and/or providing essential ecosystem services.

For more details visit:
www.nrm.gov.au/index.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 visit:
www.environment.gov.au/parks/nrs/index.html

You can also contact a Caring for our Country Facilitator based in Tasmania who may be able to provide advice on natural resource management policies and programs. For contact details visit:
www.nrm.gov.au/contacts/ausgovt.html

State

There may be state government initiatives to help protect the ecological community. The Department of Primary Industries, Parks, Water and Environment in Tasmania and Regional Natural Resource Management Groups may all be able to provide farmers and other land managers with information about any current programs in place to support conservation efforts.

The Midlandscapes project is a joint initiative between the Tasmanian Land Conservancy, Bush Heritage Australia and the Department of Primary Industry, Parks, Water and Environment to help protect and maintain native grasslands and important natural ecosystems across the Tasmanian Midlands. A range of long term conservation incentive programs for landowners may be available through this initiative including payments for covenants and stewardship contracts.

For more information please contact:
Midlandscapes coordinator
Tasmanian Land Conservancy (Launceston)
Phone 03 6331 9295
www.tasland.org.au

Bush Heritage Australia (Hobart)
Phone 03 6234 9607
www.bushheritage.org.au

Department of Primary Industry, Parks, Water and Environment
Phone 1300 368 550
www.dpipwe.tas.gov.au

Where to go for further information

- The **Listing Advice** and **Conservation Advice** for the Lowland Native Grasslands of Tasmania ecological community are the definitive source of information on the listing of this ecological community. These documents can be downloaded from SPRAT: www.environment.gov.au/cgi-bin/sprat/public/publiclookupcommunities.pl
- Further information on Tasmania's TASVEG vegetation community benchmarks can be found at: www.dpipwe.tas.gov.au/inter.nsf/ThemeNodes/LJEM-6PE7J4?open

Other guides for identification and management of the ecological community include:

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

Bryant SL and Jackson J (1999). Tasmania's Threatened Fauna Handbook: what, where and how to protect Tasmania's threatened animals. Threatened Species Unit, Parks and Wildlife Service. Hobart.

Dorrough J, Stol J and McIntyre S (2008). Biodiversity in the Paddock: a Land Managers Guide. Future Farm Industries CRC.

Gilfedder L, Kirkpatrick J, Wapstra A and Wapstra H (eds) (2003). The Nature of the Midlands'. Midlands Bushweb, Northern Midlands Council, Longford, Tasmania.

Harris S. and Kitchener A. (Editors) (2005). From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation. Department of Primary Industries, Water and Environment, Hobart.

Kirkpatrick J, Gilfedder L and Fensham R (1988). City Parks and Cemeteries: Tasmania's remnant grasslands and grassy woodlands. Tasmanian Conservation Trust Inc. Hobart, Tasmania.

Lowland Grassland Review Expert Group (2008). A review of the conservation status of lowland *Themeda* and *Poa* Grassland Native Vegetation Communities. An unpublished report to the Lowland Grassland Review Steering Committee, Resource Management and Conservation, Department of Primary Industries and Water, Hobart.

Mokany K, Friend D, Kirkpatrick J and Gilfedder L (2006). Managing Tasmanian Native Pastures - a technical guide for graziers. Tasmanian Institute of Agricultural Research, Hobart.

Gorse is an invasive exotic weed species which threatens the integrity of the ecological community.

Useful websites

- EPBC Act website: www.environment.gov.au/epbc/index.html
- 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: www.nrm.gov.au/index.html
- Tasmanian Department of Primary Industries, Parks, Water and Environment: www.dpipwe.tas.gov.au
- Department of Agriculture, Fisheries and Forestry: www.daff.gov.au
- National Farmers' Federation: www.nff.org.au/
- Tasmanian Farmers and Graziers Association: www.tfga.com.au/home.aspx

Additional copies

Enquiries and requests for further copies of this brochure may be directed to the Community Information Unit of the Department of the Environment, Water, Heritage and the Arts on:

Freecall: 1800 803 772 or

Email: ciu@environment.gov.au

Eryngium ovinum Blue devil

Research into grassland management at Tom Gibson nature reserve in Tasmania highlights the importance of regular disturbance such as fire or grazing to maintain a healthy grassy sward with a diverse array of wildflowers.

Regular ecological burning of native grasslands is important to maintain the diversity of herbs. Sheep grazing at moderate stock rates can perform a similar function of reducing the biomass of the dominant grasses.

FRONT COVER IMAGES (left to right)

- *Chrysocephalum apiculatum* (everlasting) © Anthony Hoffman
- *Convolvulus angustissimus* (bindweed) © Matthew White
- *Poa* landscape © Tori Wright
- *Leucochrysum albicans* var.*Tricolor* (hoary sunray) © Matthew White

INTERNAL IMAGES (left to right, top to bottom)

1. *Poa* landscape © Tori Wright
2 Native bee on *Microseris lanceolata* (yam daisy) © Helena Mills
3 *Wahlenbergia* spp. (bluebell) © Matthew White
3 Grassland landscape © Barbara Bell
4 Grassland lake © Anon
6 *Poa labillardierei (*silver tussock grass) © Anthony Hoffman
6 *Themeda* landscape © Tori Wright
7 *Themeda triandra (kangaroo grass)* © Matthew White
7 *Poa* landscape © Tori Wright
9 Country cemeteries can contain important lowland grassland remnants © Anon
10 *Leucochrysum albicans* var. *tricolor* (grassland paperdaisy) © Matthew White
11 *Bulbine* spp. (bulbine lily) © Matthew White
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14 *Themeda triandra* (kangaroo grass) © Tori Wright
15 *Themeda triandra* (kangaroo grass) © Matthew White
15 *Poa labillardierei* (silver tussock grass) © Anthony Hoffman
15 *Microlaena stipoides* (weeping grass) © G. Manley, ANBG
15 *Austrodanthonia* spp. (wallaby grass) © Matthew White
15 *Elymus scaber* (wheatgrass) © Reto Zollinger
15 *Austrostipa* spp. (speargrass) © Matthew White
15 *Eucalyptus ovata* (black gum) © R. Brereton
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15 *Chrysocephalum apiculatum* (common everlasting) © Tori Wright
15 *Dodonaea viscosa* (hop bush) © Melinda Brouwer
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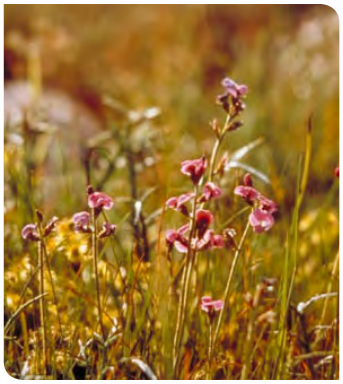
16 *Bulbine* spp. (bulbine lily) © Matthew White
16 *Acaena novae-zelandiae* (buzzy) © M. Fagg, ANBG
16 *Ptilotus spathulatus* (pussytails) © Anthony Hoffman
16 *Oxalis perennans* (woodsorrel) © Tori Wright
16 *Brachyscome aculeata* (hill daisy) © Tori Wright
16 *Acaena echinata* (shiny sheepsburr) © Karen Wales
16 *Eryngium ovinum* (blue devil) © Matthew White
16 *Solenogyne dominii* (smooth flat-herb) © Anon
16 *Wurmbea dioica* (early nancy) © M. Fagg, ANBG
16 *Pimelea humilis* (dwarf riceflower) © Anthony Hoffman
16 *Acacia mearnsii* (blackwattle) © M. Fagg, ANBG
17 Southern brown bandicoot © Andrew Tatnell
18 *Leucochrysum albicans* var*. tricolor* (grassland paper daisy) © Tori Wright
18 *Perameles gunnii gunnii* (eastern-barred bandicoot) © Dave Watts
19 *Thelymitra imbricata* (broad sunorchid) - Endemic © Tori Wright
20 *Sarcophilus harrisii* (Tasmanian devil) - En © Alexander Dudley
20 *Perameles gunnii gunnii* (eastern-barred bandicoot) - V © Dave Watts
20 *Ranunculus prasinus* (tunbridge buttercup) - En & Endemic © ANBG
20 *Thelymitra imbricata* (broad sunorchid) - Endemic © Tori Wright
20 *Glycine latrobeana* (clover soybean) - Vu © T. Barlow
20 *Aquila audax fleayi* (Tasmanian wedge-tailed eagle) - En © Steve G Wilson
20 *Carex tasmanica* (curly sedge) - Vu © John Vranjic
20 *Dianella amoena* (matted flax-lily) - En © Barbara Bell
20 *Leucochrysum albicans* var*. tricolor* (grassland paper daisy) - En © Tori Wright
20 *Dasyurus maculatus maculatus* (spotted-tail quoll) - Vu © Dave Watts
21 *Poa* grassland © Anthony Hoffman
22 *Themeda* landscape © Anon
23 *Themeda* landscape © Tori Wright
24 *Poa labillardierei* © Anon
25 *Poa* grassland © Anthony Hoffman
26 *Tricoryne elatior* (yellow rush lily) © Matthew White
26 *Chrysocephalum apiculatum* (common everlasting) © Anthony Hoffman
27 *Hieracium aurantiacum* (orange hawkweed) © Neville Walsh
27 *Serrated tussock grass* © John Baker
30 *Ulex europaeus* (gorse) © Rob Blakers
31 *Eryngium ovinum* © Matthew White
32 Excluding grazing at Tom Gibson Nature Reserve © Anon
32 Managing grasslands with fire © Anon

BACK COVER IMAGES (left to right, top to bottom)

- *Perameles gunnii gunnii.* (eastern-barred bandicoot) © Dave Watts
- *Bulbine* spp. (bulbine lily) © Matthew White
- *Glycine latrobeana* (clover soybean) © T. Barlow
- *Chrysocephalum apiculatum* (everlasting) © Anthony Hoffman

R = Rare
V = Vulnerable
En = Endangered



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