# GRAZING TOOL

## FOR MANAGING GRASSY WOODLANDS AND GRASSLANDS OF NORTHERN VICTORIA

- Potential benefits of grazing
- Rules of thumb to assist monitoring of grazing impacts
- Guidance on when not to graze
- Descriptions of terms, common definitions and references to assist you with native species identification.

*Photo courtesy of Glenda Datson*

**Step 1:** Read the **General Grazing Guide**

**Step 2:** Determine which of the seven vegetation states most closely matches your grassy woodlands or grasslands site

**Step 3:** Use the general guide and the site specific guide for your relevant vegetation state to inform your grazing decisions and improve the health of your site

The information provided is based on current literature and field experience and is intended as guidance requiring adjustment to suit local conditions.

*This Grazing Monitoring Tool was developed by Ian Davidson from Regeneration Solutions. Thanks to those who also provided comments and input, including Stu Roberton for Department of Environment and Primary Industries, Karen Tymms for Trust for Nature, Simon Feillafe and Mary Munro for North East Catchment Management Authority, Daniel Arnold and Trent Gibson for North Central Catchment Management Authority and Kate Lumb for The Regional Development Company. Published by NECMA* 

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GENERAL GRAZING GUIDE

*Photo courtesy of Glenda Datson*

## Why Graze?

Grazing can be used to control palatable weeds, reduce the quantity or manipulate the composition of the sward resulting in healthier native woodlands and grasslands that potentially provide a productive benefit.

### WHEN NOT TO GRAZE:

**Do not graze:**

- When the site is in good condition without the need to control grass
- When problem grasses are not green as they will be less palatable and livestock will eat preferred native species giving exotic species an advantage
- When grazing sensitive preferred species are setting seed and flowering
- When invasive weeds such as St Johns Wort and Paterson's Curse are likely to get an advantage by germinating in open ground
- When the site is very dry and susceptible to degradation or very wet and prone to pugging
- After natural regeneration events occur including following fire and flood

### Rules of thumb

- Sites differ greatly depending on their management history and location. Annual variation occurs at different sites subject to the season, rainfall and temperatures. The best guide to management is the current status of a target species (is it germinating, growing, flowering or seeding) and the abundance of exotic annuals
- It is preferred to graze with more animals for a shorter time rather than less animals for a longer time. This reduces grazing selectivity and allows longer rest periods for desired species to recover
- Try not to graze when native species are setting seed. Refer to suggested handbooks and guides within this tool to assist with species identification and lifecycles
- Identify and become familiar with a native species to use as an indicator to determine when to remove stock
- Exclude fertilizer use as it increases exotic grasses and weeds and decreases native species
- Avoid feeding stock in sites being managed to improve native vegetation condition as stock may select native pasture over dry feed which has been introduced. Dry feed may also may introduce weeds to the site
- Maintain average sward height of native species above 100mm and ground cover generally above 70% to reduce the suppression effect of exotic grass on regeneration of trees, shrubs, native grass and forbs
- In sites with high variability in vegetation condition manage the site for the best parts unless the paddock can be sub-divided
- Use the type of stock most appropriate to the desired outcome
- Where invasive weeds are present such as St Johns Wort, Patersons Curse and Chilean Needle Grass, carefully consider grazing because these weeds are likely to spread once the perennial grass sward is opened up by grazing

# Basic Vegetation Condition States

Seven vegetation condition descriptions have been developed to guide grazing management on sites that are being managed to improve native grassy systems across northern Victoria.

Specific management actions have been developed for each vegetation condition state and are provided in the accompanying guides. These are intended to improve health of native grassy woodland systems across northern Victoria.

## Description of terms

- **Forb** – native herbaceous plant (not grass) including wildflowers and saltbushes
- **Few weeds** – where exotic plants are a minor part of the ground cover of a site
- **Many weeds** – where exotic plants make up a significant part of the ground cover at a site
- **Good native forb diversity** – where native forbs make up a significant part of the plant diversity ground cover at a site
- **Low native forb diversity** – where native forbs are a minor part of the ground cover at a site
- **Sown pasture** – exotic pasture, usually perennial species, sown on a paddock which has often had significant herbicide treatment to remove all other plant species and has had super-phosphate added
- **Sward** – the standing grass covering an area of land
- **Exotic** – an introduced species
- **Herbaceous or Herb** - a plant that has leaves and stems that die down at the end of the growing season and usually have no persistent woody stem above ground
- **Grassy system** – native grassy woodland or native grassland

# Which state is your site?

| Grassy system with few weeds | Grassy system with many weeds | Remnant trees with sown exotic pasture |
|---|---|---|
| 1 **good native forb diversity** – sites often have many native species (60+) and include grazing sensitive native wildflowers, lilies, orchids, shrubs and grasses | 3 **good native forb diversity** – mostly in high rainfall areas subject to past disturbance such as major mechanical soil disturbance (track building), old recreation areas, and localized stock camping | 6 **where important tree cover exists** – old growth woodland with many hollow bearing trees or threatened wildlife habitat (such as the Grey-crowned Babbler or Bush Stone-curlew) |
| 2 **low native forb diversity** – sites often have over 20+ species including native wildflowers and legumes such as Twining Glycine, Tall Bluebell and Pink Bindweed | 4 **low native forb diversity** – usually fewer than 15 species and only grazing tolerant forbs present such as Grassland Wood-sorrel and Wattle Mat-rush | 7 **where strategically important revegetation exists** – linking or expanding existing remnants |
| | 5 **patchy perennial native grass cover and mostly exotic annual pasture grasses** – often less than five hardy native grass species such as Wallaby-grass, Spear-grass and Umbrella-grass | |

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**SITE SPECIFIC GUIDE** VEGETATION STATE 1

GRAZING TOOL FOR MANAGING GRASSY WOODLANDS AND GRASSLANDS OF NORTHERN VICTORIA

# Grassy system with few weeds and good native forb diversity

**Objective**
To maintain the diversity of native species at the site and to graze only when it benefits native species diversity

*Photo courtesy of Glenda Datson*

These sites have a very diverse range of native species (60+), many of which are grazing sensitive. Species may include orchids, lilies, daisies, saltbushes, wildflowers, shrubs and grasses.

Indicator species that may help you to gauge the health and condition of the site, depending on their presence or absence, include: Flax Lilies, Donkey Orchids, Showy Copper-wire Daisy, Yam Daisy, Native Flax, Kangaroo Grass and Tussock Grass.

## Management Recommendations

- Maintain historic management wherever possible i.e. Don't graze if the site has not been periodically grazed in the past.
- Exclude grazing except in late summer and early autumn in years of good summer rainfall. This allows the main active summer perennial grass sward to be reduced and provides gaps for native forbs, trees and shrubs to germinate, establish and set seed during the winter and spring.

## Assumptions and Further Information

- This advice is provided to assist in making grazing management decisions applied with an understanding of the current ground layer vegetation condition of the site, following an inspection by the landholder.
- All grasses referred to are identifiable by photos in the Evergraze publication "Identifying native perennial grasses".
- All wildflowers referred to are found in Wildflowers of the Foothills and Mountains of Northeastern Victoria and Wildflowers of the Plains and Low Hills of Northeastern Victoria. Contact your local CMA for a copy of this useful glove box sized brochure.

Only graze in late summer and early autumn in years with good summer rain when active summer perennial grass sward is dominant.

| SUMMER | | | AUTUMN | | | WINTER | | | SPRING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEPT | OCT | NOV |
| ✖ | ✖ | | | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ |

Ideal grazing time may vary depending on seasonal variation and should be based on observation

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**SITE SPECIFIC GUIDE** VEGETATION STATE 2

GRAZING TOOL FOR MANAGING GRASSY WOODLANDS AND GRASSLANDS OF NORTHERN VICTORIA

# Grassy system with few weeds and low native forb diversity

**Objective**
To maintain the diversity of native species at the site and to graze only when it benefits native species diversity.

These sites have a diverse range of native species (20+) and may include lilies, daisies, saltbushes, wildflowers and grasses.

Indicator species that may help you to gauge the health and condition of the site, depending on their presence or absence, include: Chocolate Lily, Early Nancy, Bulbine Lily, Shiny Everlasting Daisy, Burr Daisies New Holland Daisies, Riceflowers, Mat-rushes, Creeping Saltbush, Saloop, Nodding saltbush, Bluebushes and Fissure weeds, Woodrush, Wallaby Grasses, Native Wheatgrass and Weeping Grass.

## Management Recommendations

- Exclude grazing except in late summer and early autumn in years of good summer rainfall. This allows the main active summer perennial grass sward to be reduced provides gaps for native forbs, trees and shrubs to germinate, establish and set seed during the winter and spring.
- To maintain the health of the perennial grass sward maintain average sward height of native species between 100-300mm depending on the grass species.
- Maintain ground cover above 70% at all times to reduce potential weed spread.

Graze in late summer and early autumn only in years of good summer rain when active summer perennial grass sward is dominant

| SUMMER | | | AUTUMN | | | WINTER | | | SPRING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEPT | OCT | NOV |
| ✖ | ✖ | | | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ |

Ideal grazing time may vary depending on seasonal variation and should be based on observation

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**SITE SPECIFIC GUIDE** VEGETATION STATE 3

# Grassy system with many weeds and good native forb diversity

**Objective**
To manage grazing so that native species cover improves over time and exotic annual species are reduced.

These sites are not common and are often small paddocks that were used for another land use such old school grounds or recreation reserves that had some major past disturbance which allowed weeds to establish but still maintain many native species. Note that these sites may contain native threatened species. The native flora is diverse (30 + species) and may include orchids, flax-lilies, lilies, daisies, saltbushes, wildflowers, acacias and grasses; but exotic species, especially annual grasses and flat weeds, may be common.

## Management Recommendations

- Maintain historic management wherever possible.
- Select a common exotic annual grass to use as an indicator to determine when to start grazing.
- Select a preferred palatable native species to use an indicator to determine when to remove stock.
- Graze in late winter and early spring once exotic annuals have completed germinating and are actively growing. This encourages control of annual exotic grass biomass and seeding. Remove grazing once annuals flower and set seed to allow native grasses to build up and in turn help suppress exotic annuals.

Graze in late winter and early spring

| SUMMER | | | AUTUMN | | | WINTER | | | SPRING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEPT | OCT | NOV |
| ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | | | ✖ | ✖ |

Ideal grazing time may vary depending on seasonal variation and should be based on observation

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**SITE SPECIFIC GUIDE** VEGETATION STATE 4

GRAZING TOOL FOR MANAGING GRASSY WOODLANDS AND GRASSLANDS OF NORTHERN VICTORIA

# Grassy system with many weeds and low native forb diversity

**Objective**
To manage grazing so that native species cover improves over time and exotic annual species are reduced.

These sites are common and are often referred to as “rough or native” pastures and may contain many species of native grass (10+) with one or two often dominant and few species of native forbs. Exotic annual pasture grasses and herbaceous weeds may be common.

Indicator species that may help you to gauge the health and condition of the site, depending on their presence or absence, include: Wood Sorrel, Wattle Mat-rush, Caustic Weed, Geraniums, Australians Bindweed, Spear Grasses, Windmill Grasses, Wallaby Grasses and Red-leg Grass.

## Management Recommendations

- Select a common exotic annual grass(s) to use as an indicator to determine when to start and stop grazing.
- Graze regularly in late winter and early spring once exotic annuals have completed germinating to control annual exotic grass biomass and seedingand remove grazing once annuals run up to head. The rest period will allow native grasses to build up and in turn will help suppress exotic annuals next season.
- Opportunistic grazing may occur in wet summers where summer active grasses provide abundant growth.
- To maintain the health of the perennial grass sward maintain average sward height of native species between 100-300mm depending on the grass species.
- Maintain ground cover above 70% at all times.
- Where eucalypt tree regeneration is desired and there is adequate recent remnant tree seeding following good autumn/winter rainfall, intense grazing to achieve around 30+% bare ground prior to germination is desirable. Remove stock before germination is likely.

Graze regularly in late winter and early spring, opportunistic grazing in wet summers where there is abundant growth

| SUMMER | | | AUTUMN | | | WINTER | | | SPRING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEPT | OCT | NOV |
| ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | | | ✖ | ✖ |

Ideal grazing time may vary depending on seasonal variation and should be based on observation

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**SITE SPECIFIC GUIDE** VEGETATION STATE 5

GRAZING TOOL FOR MANAGING GRASSY WOODLANDS AND GRASSLANDS OF NORTHERN VICTORIA

# Grassy system with many weeds and patchy perennial native grass cover and mostly exotic annual pasture grasses

**Objective**
To manage grazing so that native species cover improves over time and exotic annual species are reduced.

These sites are common and are usually dominated by exotic annual pasture grasses such as Bromes, Barley, Annual Rye, Silver Grass and Wild Oats. One or more hardy species of native grass occurs scattered throughout the pasture and native forbs are uncommon.

Indicator species that may help you to gauge the health and condition of the site, depending on their presence or absence, include: Spear Grasses, Windmill Grasses, Wallaby Grasses and Red-leg Grass.

## Management Recommendations

- Select a common exotic annual grass(s) to use as an indicator to determine when to start grazing.
- Graze regularly in late winter to mid spring once exotic annuals have completed germinating to control annual exotic grass biomass and seeding and remove grazing once annuals run up to head. The rest period will allow native grasses to build up and in turn will help suppress exotic annuals next season.
- Where eucalypt tree regeneration is desired and there is adequate recent remnant tree seeding following good autumn/winter rainfall, intensify grazing to achieve around 30+% bare ground prior to germination is desirable. Remove stock before germination is likely.

Graze regularly in late winter and until mid-spring

| SUMMER | | | AUTUMN | | | WINTER | | | SPRING | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEPT | OCT | NOV |
| ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | ✖ | | | ✖ | ✖ |

Ideal grazing time may vary depending on seasonal variation and should be based on observation

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**SITE SPECIFIC GUIDE** VEGETATION STATE 6

GRAZING TOOL FOR MANAGING GRASSY WOODLANDS AND GRASSLANDS OF NORTHERN VICTORIA

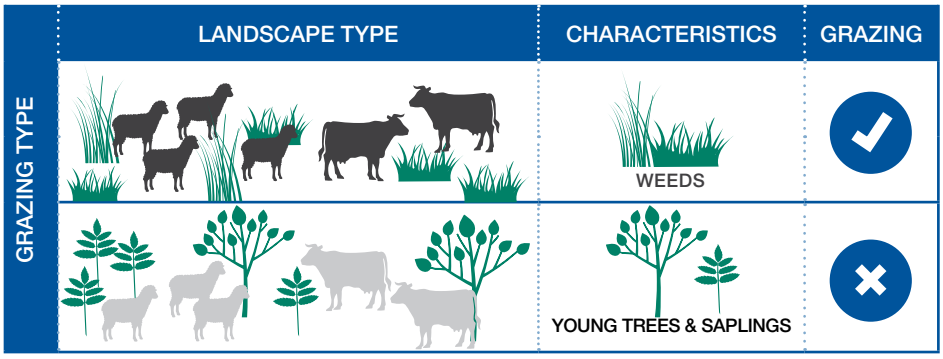
# Sown exotic pasture where important tree cover exists

**Objective**
To manage grazing to reduce weeds, encourage tree regeneration and at times improve for revegetation

These sites may be common in paddocks and typically display clusters or patches of mature hollow bearing trees which are often used by stock as camps for shade and shelter. The paddocks are usually dominated by exotic perennial pasture grasses such as Phalaris and perennial Rye or legumes such as Lucerne and clover or annual pasture grasses. The plants under the trees may contain these species or in the case of stock camping, the elevated nutrients and high ground disturbance from manure promotes Nitrogen loving plants including thistles, marshmallows and nettles. These sites often contain irreplaceable old trees and provide habitat for threatened wildlife species such as the Bush-stone Curlew and Grey-crowned Babbler.

## Management Recommendations

- Control grass and herbaceous weed growth and seeding with heavy grazing to meet site objectives and consider using other vegetation management interventions such as spot spraying and revegetation.
- In cases where natural regeneration occurs remove stock and crash graze, when weeds are actively growing, to reduce ground cover and allow germination.

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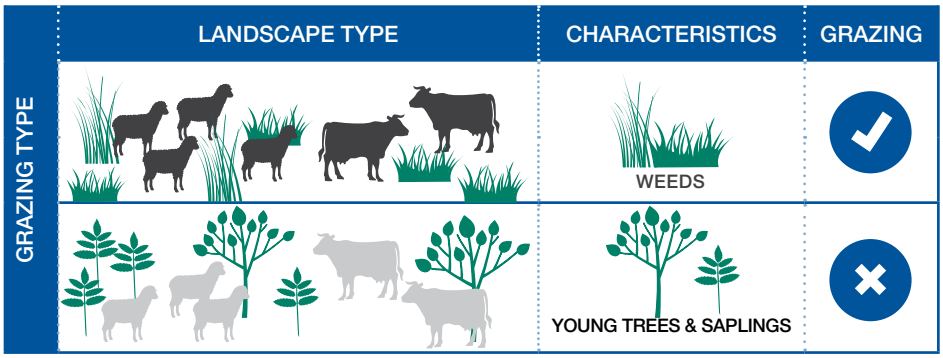
# Sown exotic pasture where strategically important revegetation site exists

**Objective**
To manage grazing to reduce weeds, encourage tree regeneration and at times improve for revegetation.

These sites are important revegetation sites because they are of strategic environmental significance, linking or expanding existing remnant vegetation. The actual condition of the site and the type and amount of weeds effects the site preparation required prior to revegetation.

## Management Recommendations

- Prior to revegetation heavy grazing may be used to reduce grass quantity and weed cover to improve site preparation.
- If regenerating trees and shrubs are susceptible to grazing, exclude grazing. If necessary, allow short term crash grazing to reduce grass quantity ensuring:
  1. Careful attention is given to grazing effects on regenerating species and remove stock immediately if damage occurs; and
  2. Crash graze only when problem grasses are actively growing and therefore most palatable.

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# IDENTIFYING NATIVE PERENNIAL GRASSES

## Native Wheatgrass

*Elymus scaber*

Photos: Lachlan Rowling

**Habitat:** grows on most soil types, particularly in moist and shaded areas of paddocks.

**Growth habit:** a loosely tufted grass up to 100cm height; highly variable in appearance.

**Seed head:** a narrow spike to 25cm long; spikelets with many awned florets; awns straight when young and curved at maturity.

**Leaves:** leaves often have a half twist; flag leaf (directly below seed head) sticks out at a right angle.

**Other distinctive features:** auricles present.

Cool season perennial

## Rough Speargrass

*Austrostipa scabra*

Photos : Lowan Turton

Photos hlan Rowling

**Habitat:** widespread and common occurring on rocky outcrops, westerly aspects and lighter textured shallow or well drained soils; common in low ground cover positions with limited soil depth.

**Growth habit:** erect tufted grass to 80cm tall.

**Seed head:** a moderately contracted to open panicle to 30cm long; spikelets are10–15cm long, sharply pointed with a long sickle shaped awn.

**Leaves:** leaves are very fi ne, long and strongly rolled; leaves are rough to touch.

Year-long green perennial

## Plains Grass

*Austrostipa aristaglumis*

Photos: Lachlan Rowling

Photo: Harry Rose

**Habitat:** common to dominant in native/naturalised pastures on heavy clay (particularly black earth) soils of the north slopes and plains; prefers good moisture, high fertility and neutral to alkaline pH.

**Growth habit:** coarse and densely tufted to 180cm height; tussocks up to 30cm in base diameter. If underutilised, plants are often a mixture of tall senesced older growth and fresh green shoots.

**Seed head:** to 55cm long and loose whorled branches when mature; seed bases are sharply pointed with awns to 4cm long and twice bent.

**Leaves:** to 40cm long, ribbed, generally hairless and often rough to touch.

Year-long green perennial

## Wallaby Grasses

*Austrodanthonia spp.*

Ph : Lachlan Rowling

**Habitat:** widespread and common with a number of species occurring in NSW and Victoria; some species adapted to hard, shallow soils through to species on fertile clay soils.

**Growth habit:** fine leaved tufted grass to 100cm tall.

**Seed head:** a contracted to open panicle; spikelets green, with pink tinges in early fl owering, become fl uffy white with maturity.

**Leaves:** grey-green to dark green and often hairy; hairy fringe at the junction of the leaf blade and leaf sheath.

Year-long green perennial

## Native Millet

*Panicum decompositum*

Photos: Lachlan Rowling

Photo: Harry Rose

**Habitat:** mainly occurring on heavy clay soils, in depressions and along fl oodplains.

**Growth habit:** can form large, upright tussocks to 145cm in height; diffi cult to distinguish from other Panicum species including P. *queenslandicum* (Yabila grass).

**Seed head:** becomes a large, open branched panicle at maturity, with spikelets commonly paired and hairless; pollen sacs are deep orange; ripe seeds are 1.5-2mm long.

**Leaves:** wide, mostly hairless, light blue-green (often with white mid-rib) to 50cm long and 12mm wide.

Warm season perennial

## Common Windmill Grass

*Chloris truncata*

Photos: Lachlan Rowling

**Habitat:** widespread on many soil types; useful coloniser of bare areas following summer rain; relatively salt tolerant.

**Growth habit:** tufted grass, usually less than 20cm height; contains stolons (runners) that can root down at the node.

**Seed head:** windmill-like (digitate) seed head consists of 6–9 spikes that radiate out like spokes of a wheel from main stem; truncate spikelets are arranged in two rows on the underside of branches; black seeds are blunt and awned.

**Leaves:** hairless, pale green–blue green in colour, short and narrow with an abrupt taper at the tip (boat shaped); new leaves are folded lengthwise along the mid-rib.

Warm season annual-perennial

## Kangaroo Grass

*Themeda australis syn. Themeda triandra*

Photo: Gill Fry

Photo's: Lachlan Rowling

**Habitat:** grows on most soil types; a widespread species often found in non-arable areas and landscapes that have been protected from grazing or only lightly grazed (e.g. roadsides and travelling stock reserves); considered a widespread and dominant species prior to European settlement.

**Growth habit:** an erect, densely tufted grass to 150cm height.

**Seed head:** contains leaf like structures (spathes) and fertile spikelets have long black awns.

**Leaves:** blue-ish green in summer and rust purple after frosting; leaves are folded with long hairs at the leaf-sheath junction; sheath is hairy.

Warm season perennial

## Warrego Summer Grass

*Paspalidium jubifl orim*

Photo: Jenene Kidston

Photo: Harry Rose

**Habitat:** common in paddock depressions, swamps; most productive on heavier, fertile soils; responds well to flooding and inundation.

**Growth habit:** a leafy and slender tussock forming grass with erect stems growing from 30–120cm in height.

**Seed head:** a closed panicle; long and narrow with up to 16 branches (each up to 4cm long) pressed against the main stem; seeds are pale green to straw coloured, are round and have no awns.

**Leaves:** smooth, fl at and narrow, up to 25cm long; tapering to a long fi ne point.

**Other distinctive features:** stem joints (nodes) and leaf sheaths are hairy and long hairs surround the ligule.

Warm season perennial

# IDENTIFYING NATIVE PERENNIAL GRASSES

## Curly Windmill Grass

*Enteropogon acicularis*

Photos: Lachlan Rowling

**Habitat:** occurs across a range of soil types; more common in conservatively grazed paddocks; good drought and flood tolerance, moderate frost tolerance.

**Growth habit:** potentially long-lived perennial with a dense, tussock forming habit to 110cm height.

**Seed head:** digitate, containing several and up to 15 branches that radiate out like spokes on a wheel across several planes. Spikelets are awned, light in colour and narrower than Chloris truncata.

**Leaves:** broad and fl at, variably hairy and often a distinct blue–green; older leaves become crimpled, curled or spiralled.

Warm season perennial

## Hairy Panic

*Panicum effusum*

Photos: Lachlan Rowling

**Habitat:** most common in dry areas on sandy or shallow low fertility soils; found in low – moderate abundance in native pastures, woodlands or disturbed areas.

**Growth habit:** a short, tufted grass to 50cm height.

**Seed head:** is a wide open panicle with spikelets often paired at the end of branches.

**Leaves:** are flat and dull green–grey colour; leaf sheaths and nodes are hairy; there are distinctive long glandular hairs along leaf margins.

Warm season perennial

## Paddock Lovegrass

*Eragrostis leptostachya*

Photos: Lachlan Rowling

**Habitat:** found in woodlands, native pastures and naturalised pastures; widespread on low–moderate fertility soils.

**Growth habit:** a slender, tufted grass to 90cm height; prostrate growth habit common in grazed pastures.

**Seed head:** consist of open, spreading branches (panicle) that is more than twice as long as broad; branches and spikelets branching approximately at right angles; spikelets often lead pencil coloured with many divisions (toothed appearance).

**Leaves:** leaf blades are rolled in the bud and smooth along the margins; leaf sheaths are hairy.

Warm season perennial

## Redgrass

*Bothriochloa macra/decipiens*

Photos: Lachlan Rowling

Photo: Harry Rose

**Habitat:** occurs on most soil types but often dominant on poor, lower fertility soils; frequently invades overgrazed or bare pastures when fertility levels decline; does not occur on highly acidic soils.

**Growth habit:** tufted grass with prostrate basal leaves and erect wiry stems to 100cm.

**Seed head:** 3–4 erect branches usually pressed together; branch bases are bare; spikelets are awned and often pitted.

**Leaves:** leaf blades are rolled in the bud; sheath and blades have prominent mid-rib.

**Other distinctive features:** stems have red, hairless nodes turning dark red after seeds fall.

Warm season perennial

## Snow or Tussock Grass

*Poa sieberiana*

Photos: Harry Rose

**Habitat:** a widespread species often found in woodland and forest environments; more common on well drained upper slopes than lower drainage lines.

**Growth habit:** a densely tufted grass to 80cm height.

**Seed head:** pyramid-shaped and open, varying from green to purple in colour.

**Leaves:** green to grey–green, long and fi ne; rough to touch and without a ligule.

Year-long green perennial

## Weeping Grass

*Microlaena stipoides*

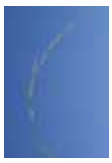

Photo: Harry Rose

Photo: Lachlan Rowling

Photo: Lori McWhirter

**Habitat:** common, especially in damp or semi-shaded areas; highly tolerant of soil acidity and exchangeable aluminium; resilient native species during drought.

**Growth habit:** a perennial grass of variable form often with a low growing, dense leafy tuft.

**Seed head:** narrow and weeping (raceme or panicle); spikelets have two straight awns to 20mm length.

**Leaves:** flat lime or blue green with a boat-shaped tip and commonly a notch or pinch near the tip.

**Other distinctive features:** small auricles present.

Year-long green perennial

## Three-awned Wiregrass

*Aristida ramosa*

Photo: Lachlan Rowling

Photo: Harry Rose

**Habitat:** grows on poor, shallow and sandy soils of low fertility. May exist on better soils that are poorly managed.

**Growth habit:** tufted up to 120cm high.

**Seed head:** spikelets have a sharply pointed base and distinct three-branched awn.

**Leaves:** very few, coarse, narrow and often pale coloured.

**Other distinctive features:** stiff wiry stems that are often branched at the nodes (stem joint).

Warm season perennial