



GRAZING AND MOWING

NATIVE GRASSLAND AND GRASSY WOODLANDS

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SUMMARY

- Native grasslands and grassy woodlands benefit from periodic removal of accumulated plant material in the ground layer.
- Livestock grazing or mowing can be used to reduce plant biomass where burning is not practical.
- A site assessment will help determine the most appropriate methods to use.
- The frequency, timing, and stocking rates of a grazing plan need to consider the life cycles of both the indigenous and exotic plant species present.
- Mowing is a useful tool for weed control, fire control lines, and pre-burn curing. Cut material should be removed to reduce biomass.

WHY GRAZE OR MOW A NATIVE GRASSY COMMUNITY?

Native grassy communities typically need active management to reduce the amount of leaf litter and other plant material that builds up over time. This accumulated plant biomass increases fuel loads and inhibits the growth of wildflowers between the grass tussocks. In the past, wildfires and grazing by native herbivores periodically reduced the biomass of grassy communities, which stimulated new grass growth and provided open spaces for germination of a range of wildflowers such as lilies, orchids, daisies and peas.

In general, grasslands require more frequent removal of biomass than do grassy woodlands. Doing nothing is usually not the best option for managing plant biomass in a grassland, except perhaps in areas where kangaroos graze regularly.

Burning is generally considered the best way to manage biomass and maintain an open plant structure in grasslands, however, livestock grazing or mowing / slashing can also be used effectively where burning can not be carried out.

Using livestock to manage biomass needs to be planned carefully as the animals can preferentially eat out particular native herbs and change the species composition of the grassy community. Sometimes, this can result in unpalatable weeds dominating the site.

Mowing is similar to burning in that all the plants present, whether palatable or not, are targeted evenly. However, unless the cut material is removed, the biomass and fuel loads might not be reduced. In many cases, mowing will be impractical because of surface rock.

Undertaking a site assessment in your grassland or grassy woodland remnant will help determine the best technique for biomass management based on the characteristics of the site.

IN THIS SERIES

- | | | | |
|-------------------------------|------------------------------|-------------------------------|--------------------------------|
| 1 Our Grassy Communities | 2 Site Assessment & Planning | 3 Weed Management | 4 A Burning Issue |
| 5 Grazing & Mowing | 6 Reducing Soil Disturbance | 7 Restoring the Missing Links | 8 Aboriginal Cultural Heritage |
| 9 Wetland Management | | | |

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USING GRAZING TO MANAGE BIOMASS

Grasslands and grassy woodlands are adapted to tolerate grazing by native herbivores, but most will degrade if continually grazed by large numbers of livestock. The level of grazing pressure on grassy communities is important as it affects the persistence and density of particular indigenous species. Less common plants such as lilies, orchids and daisies can be the most heavily impacted by overgrazing. Heavy, continual stocking can also compact the soil and destroy the soil crust. This will affect important soil fungi and native plant recruitment, and can lead to weed invasion.

In general, livestock should not be used for biomass management in native grassy communities that have not been grazed in the past. This is particularly so for grasslands with high native plant species diversity that have been regularly burnt. Many native plants are able to withstand and regenerate after fire, but rapidly disappear from the community if grazed continually or heavily by introduced livestock.

Plan your grazing regime (i.e. how many stock, what time of year, how long for, and how often) to avoid overgrazing and to suit the needs of the remnant.

- A site assessment will help identify what is required and what your aims for the management are. For example, you might want to create more gaps between grass tussocks for germination of native wildflowers, or to prevent weeds from seeding, or to maintain a relatively dense cover of native perennial grasses to prevent erosion.

- Where sites have a long history of livestock grazing it is usually better to continue the current regime in the short term while planning new long-term management. Gradually reducing animal numbers is preferable to removing them immediately as, in some circumstances, this can shift the balance in favour of weeds.
- Avoid a set stocking rate and modify according to prevailing conditions and the carrying capacity of the remnant.
- Try to use the maximum number of livestock for the minimum amount of time. Large paddocks could be fenced into smaller units, allowing more livestock to graze for shorter periods, and providing longer rest periods for each unit between grazing events.
- Where possible, avoid grazing when most native plants are growing, flowering or setting seed (i.e. between early spring and mid-summer on the Western Basalt Plains).
- On poorer quality sites that have few or no native wildflowers, grazing heavily in mid to late spring before the exotic annual grass seeds mature followed by no grazing over summer, can help increase the cover of native perennial grasses.
- The soil crust and indigenous plants are vulnerable to damage from trampling by hard-hoofed stock, so avoid grazing in wet conditions.

When deciding which livestock to use for biomass management consider aspect, topography, season, water availability, size of paddocks, vegetation composition and the presence of threatened species.

- Sheep and cattle have different grazing preferences. Sheep graze close to the ground and preferentially graze particular species. Cattle are less selective and will graze taller and ranker grass, but they produce larger amounts of manure which can smother small plants. Animal manures also change the nutrient balance of the soil, which can favour the growth of weeds. Manure and nutrients also accumulate at sheep camps.
- Consider shearing sheep before introducing them to your native grassy community to remove weed seeds. If possible, quarantine them for 24 hours so weeds are not introduced in the manure.
- If supplementary feeding of livestock is necessary, try to do it outside the native grassland or grassy woodland remnant to avoid spreading weed seeds.

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BELOW: Mowing is only allowed in designated areas in the cemetery



GRAZING AND MOWING

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USING MOWING TO MANAGE BIOMASS

Mowing (or slashing) can be used to manage biomass in native grasslands and grassy woodlands where burning or grazing are not practical options.

Mowing is typically used in urban areas, on small remnants, along boundaries, or along some road reserves. It is often undertaken for reasons other than maintaining the health of the grassy community. For example, it is used to tidy up areas, reduce fuel loads, enable access, or to improve visibility for road safety.

Unlike livestock grazing, mowing does not selectively target particular plant species. However, native plant populations could decline if regularly mown due to a lack of opportunity to seed and regenerate. Therefore, mowing is generally not appropriate for repeated, broad-scale use in native grasslands or grassy woodlands.

Periodic mowing for biomass management should only be considered in a good quality grassy remnant if it is part of an integrated management strategy for the site. The use of mowing should be restricted to the following circumstances:

- Situations where it is not possible to burn, for example near houses or buildings.
- As part of a control schedule to reduce the seed set of problem weeds.
- Intermittent harvesting of Kangaroo Grass hay for revegetation.
- Essential boundary fire control lines and access tracks.
- Pre-burn slashing (on an occasional basis only) if fuel needs to dry out before burning.

For effective use of mowing as a management tool and to minimise the impacts of mowing on the grassy community, several factors should be considered.

- Try to confine mowing to periods of least disruption to native plants, particularly any threatened species present (i.e. not between early spring and mid to late summer when most native plants are flowering or setting seed).
- In weedy patches, mow prior to seed set of problem weeds.
- Avoid the use of heavy vehicles or equipment for mowing to reduce the potential for compacting soil, producing wheel ruts, spreading weeds, disturbing the soil crust, and crushing plants.
- Avoid mowing in wet conditions to minimise soil disturbance and to prevent forming dense clumps of wet mulch.
- Cut to a height of 100 mm or more to allow the native grass tussocks to re-grow from above-ground tillers. In Victoria, native grasses must not be cut below this height without a planning permit, unless they are in a lawn or planted area.
- Where possible, use a catcher or lightly rake to remove the grass cuttings from the site. Cuttings left on the ground can smother native plants and inhibit the growth of seedlings.

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BELOW: Baling a grassland helps to remove biomass



BELOW: Grazed versus ungrazed



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DEFINITIONS

Biomass

In grassland management, used to describe the accumulated live and dead plant material in the ground layer.

Exotic plant

A plant species introduced to Australia from overseas.

Herbivore

An animal that only eats plants.

Indigenous

A plant or animal species native to a particular location, not introduced.

Native grassy community

Native grassland and woodland vegetation with a ground layer dominated by indigenous perennial grasses, usually with a range of indigenous wildflowers.

Palatable plants

Plants that animals find agreeable to eat.

Recruitment

The process of adding new individuals to a population.

Remnant

Patch of native vegetation remaining after most has been cleared or severely altered.

Tiller

A side shoot or branch of a grass arising near ground level.

FURTHER READING AND RESOURCES

Williams, N. Morgan, J. Marshall, A. (2015) *A Land of Sweeping Plains: Managing and Restoring the native Grasslands of south-eastern Australia*.

Department of Environment and Energy.

www.environment.gov.au/epbc

VVP Conservation Management Network (CMN).

<https://victorianvolcanicplainscmn.wordpress.com/>

McIntyre, S. Mclvor, J.G. Heard, K.M. (2002) *Managing and Conserving Grassy Woodlands*.

WHAT IS THE DIFFERENCE BETWEEN MOWING AND SLASHING?

'Mowing' is used to describe grass cutting to a height of less than 100 mm while 'slashing' refers to cutting higher than 100 mm. In these notes, the term 'mowing' is used broadly to describe cutting the vegetation at any height.



ABOVE: Flowering natives during a spring rest

FOLLOWING UP

Don't forget to monitor your grassland or grassy woodland regularly. Are your aims for biomass management being met by the current grazing or mowing regime?

Is there a good cover of native perennial grasses?

Are there enough gaps between grass tussocks for recruitment of wildflowers?

Are all the native plant species still present?

Are there more or fewer weeds?

Consider creating a few grazing or mowing exclusion plots at the site for comparison.