

# Guidelines for the Management of the Weeds of **ML 29678**



# Managing Weeds for Wildlife Conservation

## Introduction

The plant and animal species found in an area can show whether the country is healthy for wildlife and being managed sustainably. We place particular value on some of these species because they are rare or threatened in the Northern Territory, Australia or worldwide, or are only found in a small area. Some are important because their presence shows that the special needs they share with a wide range of other species are being met.

Most land in the Northern Territory is already managed in a way that supports native wildlife, by avoiding clearing and loss of ground cover, and with few weeds or pest animals. However, a few native species can only flourish under active management, and these deserve special attention. Species that have become threatened usually depend on one or more elements of the environment that are sensitive to change. Restoring these elements will benefit a wide range of wildlife, and if the threatened species is present, their number should also recover. A diverse range of habitats is needed to support the diversity of wildlife. So a range of different management actions will be required to preserve all species.

Many of the management actions recommended can also improve the sustainability of pastoral production. Most adjustments needed are also considered best practice for pasture management, such as using moderate stocking rates and periodically spelling country, managing weeds and controlling feral animals. These practices help ensure healthy and productive native pastures. In very few cases, pastoral production is incompatible with the preservation of a particular threatened species. Management for these species necessitates removing stock and other grazing animals from key areas of habitat. Some species persist only under the lightest grazing pressure. This booklet explains how to manage grazing pressure across the property to make sure there is habitat for these species even on a production property.

Wetland and marine species face particular challenges associated with overfishing and pollution.

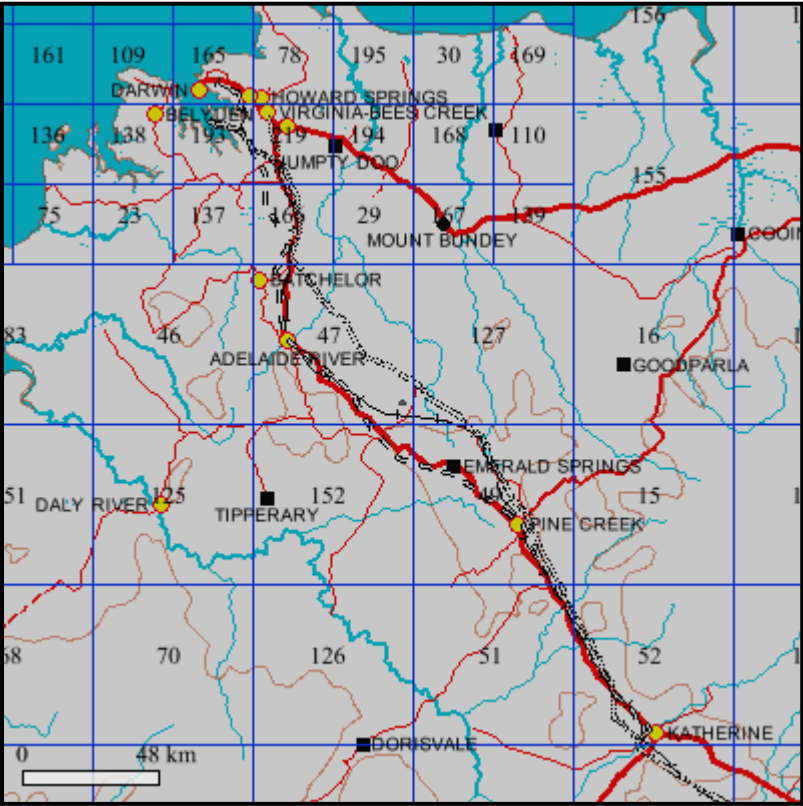
## Using this booklet

This booklet provides information to help land managers control weeds in the Northern Territory. Profiles of individual species outlining impacts on wildlife and production; and recommended methods of control have been produced for the weed species considered a higher priority for control across the whole Territory. Over time more profiles will be developed as priority species for control change and localised weed profiles are developed.

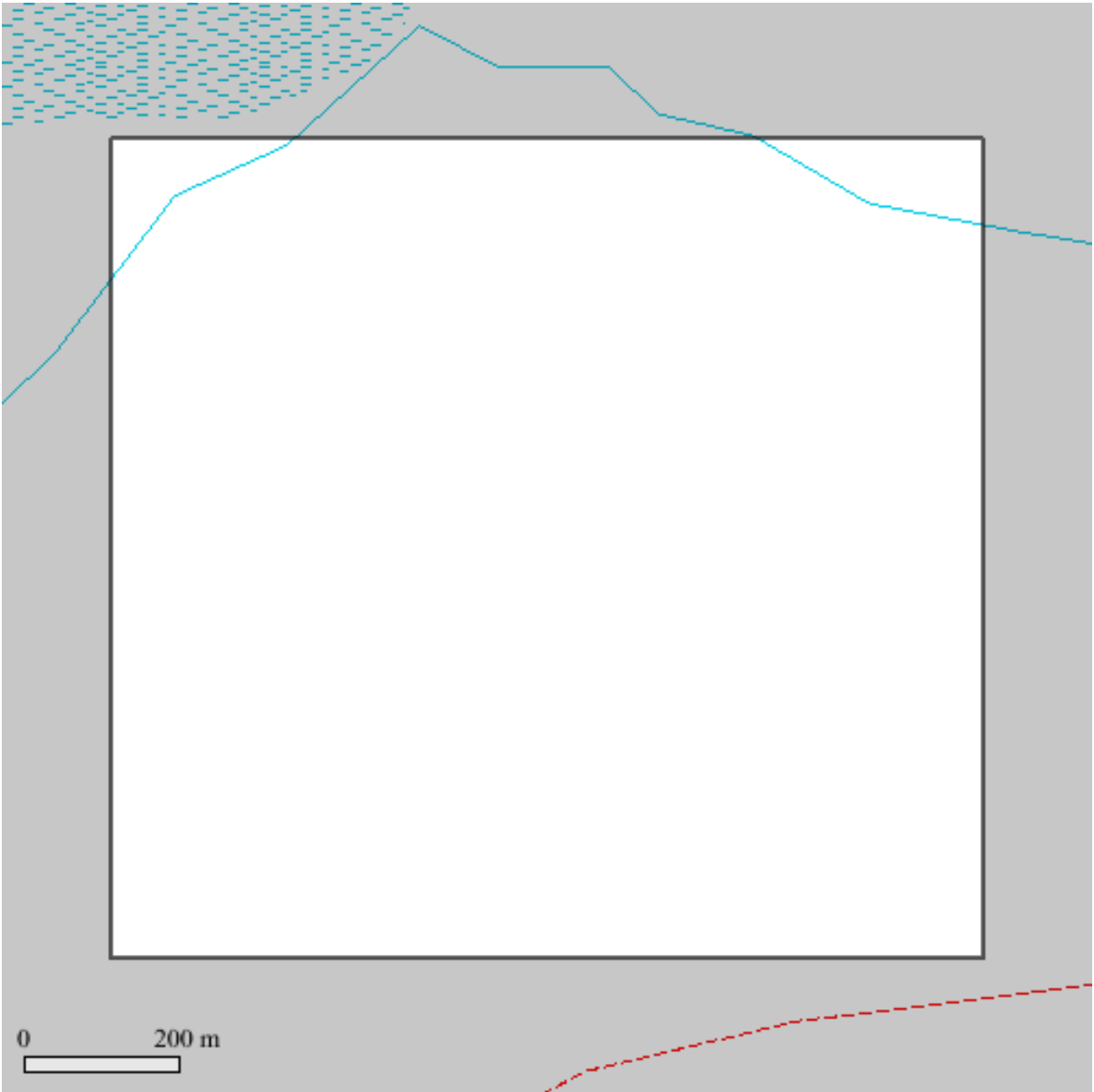
Databases kept by the Northern Territory Department of Land Resource Management (DLRM) were used to identify the weed species recorded in the selected area, or within grid cells that overlap the area. This list reflects the range of weeds likely to be found in the selected area. However, future booklets for this area may include additional species as databases are updated several times a year.

Additional threatened species booklets and information on natural resource values for this and other areas in the Northern Territory can be found on the Infonet ([www.infonet.org.au](http://www.infonet.org.au)), North Australian Land Manager ([www.landmanager.org.au](http://www.landmanager.org.au)) and DLRM (<http://www.lrm.nt.gov.au/weeds>) web pages.

# Location Map for ML 29678



Species listed in the table below were recorded from all the grid cells shown above that overlap ML 29678



# Species List

## Weeds of the ML 29678 in the Northern Territory

| Common Name            | Scientific Name                | NT Status                   | National Status | Other Status                       | ID     | Info                 |
|------------------------|--------------------------------|-----------------------------|-----------------|------------------------------------|--------|----------------------|
| Gamba Grass            | <i>Andropogon gayanus</i>      | A C                         | WONS            | MP K1 Q2 WA2 C&E<br>G&M CYP        | 179446 | <a href="#">Info</a> |
| Coral Vine             | <i>Antigonon leptopus</i>      | .                           | .               | C&E                                | 288514 |                      |
| Neem                   | <i>Azadirachta indica</i>      | .                           | .               | MP K1 C&E G&M CYP<br>WeedsAus      | 288704 |                      |
| Indian Bluegrass       | <i>Bothriochloa pertusa</i>    | .                           | .               | DEU                                | 288804 |                      |
| Calopo                 | <i>Calopogonium mucunoides</i> | .                           | .               | MP C&E CYP                         | 288904 |                      |
| Rubber Bush            | <i>Calotropis procera</i>      | B C (S<br>of 16.5<br>deg S) | .               | WA1 WA2 G&M                        | 288914 |                      |
| Mission Grass (annual) | <i>Cenchrus pedicellatus</i>   | .                           | .               | WeedsAus                           | 291864 | <a href="#">Info</a> |
| Purpletop Chloris      | <i>Chloris barbata</i>         | .                           | .               | DEU                                | 289314 |                      |
| Gambia Pea             | <i>Crotalaria goreensis</i>    | .                           | .               | MP                                 | 183442 |                      |
| Ulcardo Melon          | <i>Cucumis melo</i>            | .                           | .               | DEU                                | 289734 |                      |
| Fierce Thornapple      | <i>Datura ferox</i>            | A C                         | .               | WA1 WA3 WA4 G&M                    | 289904 |                      |
| Poinciana              | <i>Delonix regia</i>           | .                           | .               | C&E                                | 289914 |                      |
| Awnless Barnyard Grass | <i>Echinochloa colona</i>      | .                           | .               | DEU                                | 290114 |                      |
| Soft Lovegrass         | <i>Eragrostis pilosa</i>       | .                           | .               | DEU                                | 372338 |                      |
| Phassa Plum            | <i>Grewia asiatica</i>         | .                           | .               | C&E G&M CYP                        | 290544 |                      |
| Indian Heliotrope      | <i>Heliotropium indicum</i>    | .                           | .               | DEU                                | 290584 |                      |
| Hyptis                 | <i>Hyptis suaveolens</i>       | B C                         | .               | G&M                                | 290734 |                      |
| Cupid's Flower         | <i>Ipomoea quamoclit</i>       | .                           | .               | C&E                                | 371932 |                      |
| Lantana                | <i>Lantana camara</i>          | B C                         | WONS            | K2 WA1 Q3 Gr G&M CYP<br>DEU NSW SA | 237738 |                      |
| Lions Tail             | <i>Leonotis nepetifolia</i>    | B C                         | .               | MP K2 C&E CYP                      | 290854 |                      |

|                        |                                              |                                       |      |                             |        |                      |
|------------------------|----------------------------------------------|---------------------------------------|------|-----------------------------|--------|----------------------|
| Coffee Bush            | <i>Leucaena leucocephala</i>                 | .                                     | .    | MP C&E G&M CYP              | 290894 | <a href="#">Info</a> |
| Siratro                | <i>Macroptilium atropurpureum</i>            | .                                     | .    | C&E                         | 291024 |                      |
| Guinea Grass           | <i>Megathyrsus maximus</i>                   | .                                     | .    | MP DEU                      | 291184 | <a href="#">Info</a> |
| Red Natal Grass        | <i>Melinis repens</i>                        | .                                     | .    | DEU                         | 291224 |                      |
| Mimosa                 | <i>Mimosa pigra</i>                          | A (S of 14 deg S) B (N of 14 deg S) C | WONS | MP K2 WA1 WA2 Q1 G&M CYP SA | 291304 | <a href="#">Info</a> |
| Common Sensitive Plant | <i>Mimosa pudica</i>                         | C                                     | .    | WA1 WA2                     | 291294 |                      |
| Lippia                 | <i>Phyla nodiflora</i> var. <i>nodiflora</i> | .                                     | .    | G&M NSW                     | 291964 |                      |
| Salvinia               | <i>Salvinia molesta</i>                      | B C                                   | WONS | MP WA1 WA2 Q2 G&M NSW SA    | 183554 |                      |
| Bitter Broom           | <i>Scoparia dulcis</i>                       | .                                     | .    | DEU                         | 292424 |                      |
| Sicklepod              | <i>Senna obtusifolia</i>                     | B C                                   | .    | WA1 WA2 Q2 G&M CYP DEU      | 131903 |                      |
| Coffee Senna           | <i>Senna occidentalis</i>                    | B C                                   | .    | G&M DEU                     | 292474 |                      |
| Spiny-head Sida        | <i>Sida acuta</i>                            | B C                                   | .    | WA1 G&M                     | 292584 |                      |
| Flannel Weed           | <i>Sida cordifolia</i>                       | B C                                   | .    | WA1 G&M DEU                 | 292594 |                      |
| Paddy`s Lucerne        | <i>Sida rhombifolia</i>                      | B C                                   | .    | MP G&M DEU                  | 292604 |                      |
| Branched Porterweed    | <i>Stachytarpheta australis</i>              | B C                                   | .    | .                           | 361505 |                      |
| Cayenne Snakeweed      | <i>Stachytarpheta cayennensis</i>            | B C                                   | .    | NSW                         | 292924 |                      |
| Common Stylo           | <i>Stylosanthes guianensis</i>               | .                                     | .    | DEU                         | 292964 |                      |
| Caribbean Stylo        | <i>Stylosanthes hamata</i>                   | .                                     | .    | DEU                         | 292974 |                      |
| Townsville Lucerne     | <i>Stylosanthes humilis</i>                  | .                                     | .    | DEU                         | 292984 |                      |
| Shrubby Stylo          | <i>Stylosanthes scabra</i>                   | .                                     | .    | G&M DEU                     | 292994 |                      |
| Cinderella Weed        | <i>Synedrella nodiflora</i>                  | .                                     | .    | C&E                         | 293024 |                      |
| Caltrop                | <i>Tribulus terrestris</i>                   | B C                                   | .    | CYP SA                      | 361555 |                      |
| Sabi Grass             | <i>Urochloa mosambicensis</i>                | .                                     | .    | DEU                         | 293294 |                      |
| Para Grass             | <i>Urochloa mutica</i>                       | .                                     | .    | MP G&M                      | 293304 | <a href="#">Info</a> |

\* Click on the "Info" links on the right to go to the management related information on each species. Where the "Info" column is blank no management guidelines have been created, usually because the species is not a significant threat to wildlife.

For further information on species without management guidelines go to [www.landmanager.org.au/view/index.aspx?id=####](http://www.landmanager.org.au/view/index.aspx?id=####) where #### is the ID number from the table above for the species of interest.

**A** = To be eradicated

**WONS** = Weeds of National Significance

**DEU** = Plants listed as environmental weeds by the Desert Uplands Strategic Land Resource Assessment

**K1** = High Priority Weeds posing environmental threats in the Katherine region

**NSW** = Declared Noxious Weed in NSW

**Q3** = Qld Class 3 Weed (to be controlled near environmentally sensitive areas- not to be supplied/sold without a permit)

**WA1** = WA Weed Class P1 (movement prohibited)

**WA4** = WA Weed Class P4 (prevent spread)

**B** = Growth & spread to be controlled

**C&E** = Csurhes, S. & Edwards, R. (1998) Potential Environmental Weeds in Australia.

**G&M** = Grice AC, Martin TG. 2005. The Management of Weeds and Their Impact on Biodiversity in the Rangelands.

**K2** = High Priority Weeds posing existing threats in the Katherine region

**Q1** = QLD Class 1 Weed (not to be introduced, kept or supplied)

**SA** = Declared Plant in South Australia

**WA2** = WA Weed Class P2 (aim to eradicate)

**C** = Not to be introduced

**CYP** = Draft Cape York Peninsula Pest Management Plan 2006-2011

**Gr** = Groves et al. 2003. Weed categories for natural and agricultural ecosystem management.

**MP** = Northern Territory Parks & Conservation Masterplan

**Q2** = Class 2 Weed (eradicate where possible, not to be introduced, kept or supplied)

**WeedsAus** = Listed as a significant weed by Weeds Australia

**WA3** = WA Weed Class P3 (control infestations)



### Introduction

Weeds are introduced plants that reproduce or even proliferate unaided. Most weeds are exotic, however native plants can also be considered weeds if introduced outside of their natural range. In many cases it is not for many years, or even decades after a plant's introduction that it is considered a weed as they tend to be recognised as such only when they have already spread.

Environmental weeds are plants that represent a threat to the conservation values of natural ecosystems.

Weeds can out-compete native plants for essential resources such as space, light, water and nutrients. As they invade native plant communities they cause a reduction in plant diversity with the loss of threatened species.

This alteration of plant communities affects animals when plants they depend on for food and shelter are replaced. Species that are already threatened are particularly vulnerable to weed invasion. Weeds can change the structure of a habitat, making it unsuitable for threatened animals and native wildlife in general and dense thickets of weeds impede movement of wildlife.

Weeds can alter landscapes by choking rivers and smothering grasslands. They can also alter fire regimes, in most cases increasing the frequency and intensity of fires. This can lead to the death of plants and animals and destroy essential habitat features.

Weeds are encouraged by disturbance of the natural environment, increased nutrient levels and the absence of predators. In tropical savannas, disturbance of the natural environment includes floods, alteration of the natural fire regime, over-grazing, extensive tree-clearing and changes in water availability.

### Weeds in the Northern Territory

The Northern Territory features some of the most extensive, unmodified natural landscapes in Australia. Of the rich flora of the northern savannas less than 10% is introduced (compared for example to 16 and 24% for New South Wales and Victoria respectively). Despite the comparatively good condition of northern savannas there are some significant weed issues. These include highly invasive introduced pasture grasses, aquatic weeds, prickly bushes and weeds of disturbed land. Environmental weeds in the Northern Territory are discussed briefly below by life form.

### Trees

The Northern Territory has relatively few tree weeds, and none are currently deemed a direct problem for any threatened species. However, Athel Pine is a significant transformer weed, meaning it has the capacity to completely change the landscape. Athel Pine has spread through waterways in central Australia, where it interferes with stream flow and replaces River Red Gums. Neem is also a transformer weed which is rapidly dominating riparian zones in the Queensland Gulf and the East Kimberley regions. It is presently found only at scattered locations in the Northern Territory, but is a common environmental weed around Darwin. Neem has been cultivated for centuries for its medicinal and insecticidal properties. Its fruit are readily spread by birds. Both Athel Pine and Neem support a narrower range of wildlife than do the native trees they replace.



*Photo: © Gabriel Crowley*

Hyptis flourishes in overgrazed environments

Profile written by John Westaway & Gabriel Crowley,  
edited by Zoe Disher

[www.landmanager.org.au/view/index2.aspx?id=644857](http://www.landmanager.org.au/view/index2.aspx?id=644857)

Link to legislation and Weed Management Plans:

<http://www.lrm.nt.gov.au/weeds/legislation>

*Last updated Jan 2013*



*Photo: © Peter Duce*

Neem tree, foliage, flowers and fruit

The enthusiasm for converting northern Australia into a carbon bank is likely to see increased pressure for more exotic tree plantations. It is probable that at least some of the trees introduced for this purpose will do well enough outside plantations to pose a threat to biodiversity. One of the favoured species for biofuel production, Physic Nut, is already a declared weed in Western Australia and the Northern Territory.

### Exotic grasses

A handful of the hundreds of grasses that been introduced into Australia have become a serious problem for biodiversity. Most were chosen for being productive and nutritious for livestock and introduced with the intention of replacing native species. Few people would argue against the usefulness of exotic grasses within the confines of a grazed paddock. If introduced grasses were highly palatable at all stages of their life cycle, then they would be eaten down by livestock and not present a problem. However not all exotic grasses are palatable, or their palatability may fluctuate through their life cycle. So there are times when these grasses can grow out of control. Some problem grasses are not palatable at all - most of these came into the country accidentally or for use in gardens or erosion control.

Problematic introduced grasses also tend to be good breeders: Mission Grass produces prolific seeds; Gamba Grass has robust basal clumps that resprout after rain; Para Grass sends out long tillers that set down new roots in the mud; Buffel Grass has both a perennial root stock and abundant, wind- and animal-dispersed seed. All of these grasses are highly invasive. Due to their capacity to fuel extensive high-intensity fires that weaken and kill trees, these exotic, perennial grasses now constitute one of the most serious environmental issues facing Australia's tropical savannas.

Grader Grass is an introduced, unpalatable annual grass that has invaded savanna woodlands and croplands in high rainfall areas, especially in Queensland but also on properties in the Katherine and Darwin regions. It has the ability to smother native plants and should be controlled and not spread further.

Because of their reproductive properties, exotic grasses often escape into the wider environment where they threaten biodiversity values. These grasses also reduce the ability of pastoral properties to conserve wildlife.

### Prickle bushes

Another group of significant weeds in the Northern Territory is the thicket-forming prickly bushes. These include Mimosa and Prickly Acacia which are well established in threatened species habitat in the Top End. A number of other prickly bushes, including Mesquite and Parkinsonia, are also widespread and problematic but have not yet encroached on threatened species habitat. These bushes form dense thickets which out-compete native vegetation, use up valuable soil water and shade out native grass species. This results in a loss of ground cover and increased soil erosion.

### Aquatic weeds



*Photo: © John Westaway*

Tall Gamba Grass forming dense stand to the exclusion of native ground flora

A number of aquatic plants have been introduced into Australian waterways, some of which have become invasive weeds. These weeds replace native aquatic plants and choke wetlands and waterways. This in turn prevents birds and other wildlife from using the habitat and reduces fish stocks by depleting oxygen levels in the water.

Examples include Alligator Weed, Water Hyacinth, Cabomba, Salvinia and the grasses Para Grass and Olive Hymenachne. They are aggressive invaders of waterways and swampy areas and most are regarded as Weeds of National Significance.





*Photo: © NRETAS*

Salvinia forming dense aquatic mat to the exclusion of native wetland plants



*Photo: © Darryl Evans*

Siam weed is regarded as one of the world's worst weeds and is on the Alert List for Environmental Weeds

## Shrubs and herbs

There are also a number of herbaceous shrubs and sub-shrubs that can transform large areas of habitat. Primary among these is Noogoora Burr which occurs along parts of the Victoria River. Others to watch out for are Sicklepod, Malachra and Lion's Tail, all of which have markedly expanded their distributions in northern Australia in recent decades.

This group includes a number of weeds, such as Hyptis, Rubber Bush, Snakeweed and Sida, which tend to be more of a problem in overgrazed or heavily disturbed areas. These weeds may be more an indicator than a cause of environmental degradation.

Also within this group are species on the Alert List for Environmental Weeds, a list of 28 non-native plants that threaten biodiversity and cause other environmental damage. These include Barleria, also known as Porcupine Flower, and Siam Weed.

Barleria is an erect, prickly shrub that can form dense thickets in open woodlands due to its persistent and invasive nature. It has been found around townships in the Northern Territory including Darwin, Berry Springs, Katherine, Mataranka and in the Victoria River district. Siam Weed is another highly invasive plant. It is recognised as one of the world's worst tropical weeds and is currently present in a few small infestations in far north Queensland. Although only in the early stages of establishment, these weeds have the potential to seriously degrade Australia's ecosystems. Preventing spread of such species will protect savannas and riverine habitat of northern Australia.

## Impacts on wildlife conservation

Wetlands and floodplains are particularly prone to weed invasion because of the regular disturbance caused by floodwaters, combined with the nutrients washed in from across the catchment. Weeds taking advantage of these conditions include a number of exotic grasses, prickly bushes, herbs, shrubs and trees. Couch Grass, Buffel Grass, Para Grass, Prickly Mimosa, Prickly Acacia and Noogoora Burr are identified problems for one or more of the Northern Territory's threatened species found in these environments.

There are also a number of threatened species for which weeds are a potential threat (particularly in association with pest animal disturbance), but for which no single weed menace has been identified. Native ferns found along moist sheltered streams in the Top End are particularly at risk of such weed invasions, either through direct replacement or by resulting changes to fire regimes.

General weediness can also cause the deterioration of animal habitat and reduce the abundance of many small animals, including insects. Even where this decline is not significant enough to class the affected animals as threatened, both reduced prey abundance and reduced visibility of prey could have a flow-on effect to threatened predators. These predators include the Arnhem Leaf-nosed Bat, Bare-rumped Sheath-tailed Bat, Red Goshawk and Masked Owl. For this reason, it is important to control any significant weed infestation, whether or not it has a known impact on a threatened species.

## Control

Much effort can be invested in weed control but there are few demonstrated cases of a problem weed being entirely eliminated. So it is extremely important that a strategic approach is adopted to maximise the effectiveness of control efforts.

The first thing to do is to work with your neighbours and the wider community so that weeds removed from your country are not simply replaced through seeds washed or blown in from nearby infestations. Working collaboratively may provide access to financial support or weed management teams. So find out if there is a local Landcare or ranger group.



**Photo:** © Chris Brock

Buffel Grass outcompetes other understorey plants and increases fire hazard

Concentrate your efforts on priority weeds, based on severity of impact and ease of control. To benefit threatened species, focus your control on the weeds listed in this document. Remove weeds at the edge of any infestation, especially any outliers. Don't wait until the problem is too big to handle. Control of new weeds before they become a problem is particularly important.

There is no point in clearing up a patch of weeds once or twice, only to let it regrow. So get to know your weeds, where they grow, when they produce seed, and when they are most susceptible to pesticides. Plan a follow-up control program, regularly returning to check areas that you may think are now weed free.

Constantly assess what you have achieved. Map weeds or record their locations so that you know if they are expanding or contracting. Even recording areas that are currently weed-free can be useful down the track. Record the control measures that you have used, so that you can assess which is the most effective. If one approach is not working, try another.

The best control is prevention. So when choosing plants for your garden or for pasture forage, check whether they have weedy characteristics. They may already be on a list of prohibited or undesirable species. But there are signs to watch out for once you plant them. Check whether they spread uncontrollably from seeds or suckers. Do the birds feed on and spread the seeds? If it is hard to control in your own garden, especially if you are not pampering them with ample water or fertilizers, it is even more likely to become a weed in the bush.

Look out for plants coming up outside your property, focus on areas that are downstream and downwind. Even if they aren't in your area yet, familiarize yourself with Rubber Vine and Pond Apple which have had serious impacts on native riparian vegetation in Queensland. Look out for strange plants that could become a menace, and send them to the Northern Territory Herbarium for identification. Avoid use of hay from weed-infested areas.

Don't bring in trouble accidentally. Practising good weed hygiene is essential to avoid the spread of weeds, for example aquatic weeds such as Salvinia, Cabomba and Olive Hymenachne that are potentially devastating to wetlands. So when retrieving boats and trailers from waterways, take care that weed plants and seeds are not transported to other catchments. Wash-down your vehicle if you think you have been driving through areas where it might have collected weed seeds. When controlling weeds, ensure pesticides do not enter the waterway and avoid disturbing the river banks.

#### For further information: Read

- + Anon 2008. *Do you have a Garden Thug in your Garden or Aquarium?* Greening Australia, Northern Territory Government, Nursery and Garden Industry of the Northern Territory and Weedbusters Australia. [http://lrm.nt.gov.au/\\_\\_data/assets/pdf\\_file/0019/13195/TopEndGardenThug.pdf](http://lrm.nt.gov.au/__data/assets/pdf_file/0019/13195/TopEndGardenThug.pdf)
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**Photo:** © Gabriel Crowley

Rubber Vine - a weed for Northern Territorians to watch out for

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- + Charles Darwin University and NT Government 2009. Northern Territory Weed Management Handbook. <http://lrm.nt.gov.au/weeds/manage>.
- + Overview of Northern Territory Weed Control Legislation [www.weeds.org.au/nt2.htm](http://www.weeds.org.au/nt2.htm)
- + Water and Rivers Commission 2001. Herbicide use in wetlands. Water Notes WR22, April 2001, 4pp. <http://www.nynrm.sa.gov.au/Portals/7/pdf/LandAndSoil/49.pdf>
- + Weeds Branch, Northern Territory Department of Land Resource Management 2007. *Guidelines for weed data collection in the Northern Territory*. Northern Territory Government, Australia. [http://lrm.nt.gov.au/\\_\\_data/assets/pdf\\_file/0003/13485/weed\\_data\\_collection\\_guidelines\\_jan2011.pdf](http://lrm.nt.gov.au/__data/assets/pdf_file/0003/13485/weed_data_collection_guidelines_jan2011.pdf)
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## Visit

Weeds Australia: National Portal [www.weeds.org.au](http://www.weeds.org.au)

Northern Territory Department of Land Resource Management <http://www.lrm.nt.gov.au/home>

Weeds of National Significance Web Site <http://www.weeds.org.au/WoNS/>

## Contact

Weeds Branch, Department of Land Resource Management

[Contacts - Weeds Branch - Land Resource Management](#)

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### Introduction

Gamba Grass is an African grass that was brought into Australia to replace native grasses as a pasture forage. It grows in the Top End, and is particularly well established in the Darwin Daly region. A small outbreak is present in northeast Arnhem Land and isolated patches on the Tiwi Islands. While many pastoralists believe Gamba Grass is a useful pasture species, this support is not universal. Gamba Grass can be hard to control and, if not grazed continually in the growing season, can become rank and unpalatable. However, opposition to Gamba Grass is unanimous amongst environmental scientists.

### Impacts

Gamba Grass is so vigorous that little else grows near it. It is able to trap most of the available nitrogen to the exclusion of other plants. Small ground-layer plants are most at risk - the endangered Glenluckie *Helicteres* being one of them. Two of the three known populations of this small shrub grow in areas that are heavily infested by Gamba Grass.

The voluminous bulk of Gamba Grass results in fires that are both intense and extensive. Even in the early dry season, they may cause complete ground cover and canopy loss. Several species may be both outcompeted by Gamba Grass and then incinerated in a Gamba Grass-fuelled fire. The Vulnerable Armstrong's Cycad is one threatened plant that could be lost in this process. Gamba Grass increases the fuel load to such an extent that even tree death from fire becomes a regular event.

While all tree death as a result of exotic grass fires is undesirable, the impact on rainforests is the most worrying. Rainforests in the Northern Territory largely persist in fire-protected pockets created by topography, rock formations and springs. Gamba Grass can encroach on these pockets, rendering them flammable instead of fire-protected. The first rainforest plants to be displaced by Gamba Grass fires are likely to be species found at the rainforest edge, such as the epiphytic *Luisia* Orchid and the ground-dwelling *Malaxis* orchid. If such fires cause further attrition of rainforest patches, even species typically found in the core of patches, such as the Darwin Palm, *Pternandra* and the ground-dwelling *Zeuxine* orchid, could be affected. Large stands of Gamba Grass grow on the Mary River floodplain, where they abut hills containing the threatened rainforest species Yellow Star. If Gamba Grass is not controlled in this area, the habitat of this species is likely to get burnt, and Yellow Star along with it. On the Tiwi Islands, fires fuelled by Gamba Grass could also threaten rainforests containing *Mitrella*, *Quandong*, *Xylopia*, Native Walnut, *Tarennoidea*, Tiwi Islands Waxflower, *Mapania* and *Dendromyza*. Through its effect on fire regime Gamba Grass also has the potential to reduce the abundance of the two *Typhonium* species that are found only on the Tiwi Islands.

The impact on animals can be equally severe. Large Gamba Grass plants leave little or no spaces between grass clumps, reducing the feeding habitat of many species. Additionally, wildlife have nowhere to hide from the flames of Gamba Grass fire, and after fire, cannot access the shelter that would have once been provided by unburnt patches of grass, leaf litter and logs. Hollows high up in the tree canopy may also be burnt. If these are occupied during a fire, the animals inside them will probably die. Once a fire has passed, surviving animals can be deprived of shelter and nesting sites. Each of these processes can be devastating, as the following examples illustrate.



Photo: © Jeremy Garnett

Gamba Grass (*Andropogon gayanus*) dominates the understorey and creates a dangerous fire hazard

#### Weed of National Significance

NT Class B Weed in Katherine to Darwin area (growth & spread to be controlled), NT Class A Weed elsewhere in the Northern Territory (to be eradicated), & NT Class C Weed throughout the Northern Territory (not to be introduced)

WA Weed Class P1 (movement prohibited) & WA Weed Class P2 (aim to eradicate)

Qld Class 2 Weed (eradicate where possible, not to be introduced, kept or supplied)

[www.landmanager.org.au/view/index2.aspx?id=179446](http://www.landmanager.org.au/view/index2.aspx?id=179446)

link to: [Gamba Grass Weed Management Plan](#)

Profile written by Gabriel Crowley and edited by Zoe Disher

Last updated Jan 2013





Photo: © Ted Johansen

Gamba Grass is a major threat to Yellow-snouted Geckos

For much of the year, Gouldian Finches and Partridge Pigeons feed on seeds that fall on patches of bare ground between clumps of grasses and other herbaceous plants. Gamba Grass can completely destroy this habitat. First it replaces the seed-producing native plants. Then, as the growing season progresses, it occupies any bare ground, and, if burnt, later converts much of the habitat to little else besides bare ground. Were Gamba Grass to invade Gouldian Finch habitat, the intense fires it fuels are also likely to destroy nest trees. If lit early in the year, these fires may also kill chicks in the nests. Similarly, survival of Northern Quoll, Brush-tailed Rabbit-rat, or Northern Brush-tailed Phascogale individuals sheltering in tree hollows burnt in Gamba Grass fires could be jeopardised. Yellow-snouted Gecko is a species of dappled environments, living amongst grass plants and fallen leaves, and feeding on insects taken from patches of bare ground. Its stronghold is in the catchment of the Wildman River, particularly in areas dominated by native perennial grasses. Its habitat is also threatened by Gamba Grass, which is well established in nearby pastures.

If the spread of Gamba Grass is not checked, then this weed poses one of the most significant threats to biodiversity across the Top End, even to species, such as Crested Shrike-tit, that are currently outside its range. Gamba Grass fires also pose significant risk to human life and property.

### Classification

Gamba Grass was declared a Weed of National Significance in April 2012. It is a declared weed in the Northern Territory and comes under an approved statutory Weed Management Plan, ([Click here](#)). Weed Management Plans establish the management requirements that MUST be undertaken by land managers with respect to declared weeds. Gamba Grass is also now a declared weed in Western Australia, and Queensland and the Northern Territory. It is listed as a high impact weed in the Field Guide to Assessing Australia's Tropical Riparian Zones. Its use in pasture production is no longer recommended. Gamba Grass is recognised as a Key Threatening Process to biodiversity in northern Australia.

### Control

Control of Gamba Grass can be achieved. While this requires considerable effort, the benefits in preventing loss of Australian species and landscapes in the long term make it worthwhile. Recommended practices include keeping machinery free of Gamba Grass seed to prevent spread beyond infested areas; containing existing large areas and eradicating small outlying infestations; and containing and actively managing Gamba Grass on pastoral lands where it is already established. While Gamba Grass may be useful as hay, its should not be bailed once it has seeded.

Small outbreaks can be controlled by hand pulling, slashing or spraying entire plants with glyphosate during the growing season. Fire can be used to reduce plant size before undertaking physical or chemical control. Early wet season burning, in particular, will reduce plant vigour, and encourage the production of new growth that is most sensitive to pesticide. To be most effective all control should be undertaken before seed production, when plants are actively growing. This will also reduce the likelihood of seeds being inadvertently spread either in the fire updraft or by machinery. Grazing helps to keep Gamba Grass in check, but high stocking rates and continual stocking may be necessary to do so. Keeping native pastures in good condition and not overgrazing will help prevent the establishment of new Gamba Grass plants. Gamba Grass is a declared weed in the Northern Territory; resources are available from the NT Government, free of charge, to assist landholders to manage this weed on their property.

For further information:

Read

- + Northern Territory Weed Information: Gamba Grass *Andropogon gayanus* <http://irm.nt.gov.au/weeds/find/gamba>
  - + Queensland Government Pest Factsheet: Gamba Grass [http://www.daff.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Gamba-Grass-PP147.pdf](http://www.daff.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Gamba-Grass-PP147.pdf)
  - + Western Australian Government Declared Plant Factsheet: Gamba Grass [http://www.agric.wa.gov.au/objtwr/imported\\_assets/content/pw/weed/decp/gamba\\_grass.pdf](http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/weed/decp/gamba_grass.pdf)
  - + Weeds of National Significance: Gamba Grass <http://www.weeds.org.au/WoNS/gambagrass/>
  - + Key Threatening Process Information: Invasion of northern Australia by Gamba Grass and other introduced grasses [www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=18](http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=18)
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# Managing weeds for wildlife conservation

## Annual Mission Grass

### Introduction

Annual Mission Grass was introduced to Australia in the 1940s from Africa. It was introduced as a pasture plant however after its release, it was found to have little value as cattle forage. Annual Mission Grass is now well-established across northern Australia, notably as a weed of sorghum crops. It also colonises areas of bare ground from which other weed species have been eliminated.

Annual Mission Grass is a very vigorous annual grass that can grow to 3 m tall although it is commonly much smaller. It produces a large number of light fluffy seeds, which are readily dispersed by both wind and water. Plants germinate with the first wet season rains, produce seed in the early dry season and most plants die by the middle of the year.

### Impacts

Annual Mission Grass colonises disturbed sites, frequently establishing in areas from which Perennial Mission Grass has been controlled. High-biomass, introduced grasses such as Mission Grasses can out-compete native grasses and herbs thus reducing local plant biodiversity.

The main impact of Annual Mission Grass is through high fuel loads, which are substantially greater than those of most native grasses. The increased fuel loads promote intense, late, dry season fires which have a detrimental effect on trees and other native flora and fauna. The ability of Annual Mission Grass to dominate the understorey and promote more intense fires means that it has the potential to gradually transform eucalypt woodlands into grasslands. It is therefore considered a threat to a range of species and environments across the Top End.

### Classification

Annual Mission Grass is listed as a high impact weed in the Field Guide to Assessing Australia's Tropical Riparian Zones and a Key Threatening Process to biodiversity in Northern Australia. It is not a declared weed at the State/Territory or National level.

### Control

The seed-bank of Annual Mission Grass is concentrated on the soil surface and germinates each wet season, so control can be achieved by preventing plants from seeding. Ploughing and other soil disturbance should be avoided however, as the seed becomes buried in the soil and may remain viable for several years.

Annual Mission Grass can be effectively controlled in small patches by removing by hand and spraying with herbicide. While no herbicide is specifically recommended for use on Annual Mission Grass, glyphosate is effective at controlling most grasses. Burning plants before they seed may also eliminate the plant from an area. However, burning or spraying after the plants have set seed is not recommended as seed germination can be prolific in the bare areas created by weed control.

Control efforts should concentrate on containing existing large areas and eradicating small outlying infestations. Adopt good hygiene practices to prevent weeds spreading beyond infested areas, such as keeping machinery free of weed seeds and not using seeding grasses in hay.



Photo: © Kym Brennan

Annual Mission Grass (*Pennisetum pedicellatum*) seeds

Not listed as a weed Nationally or in the NT, Qld or WA

Profile written by Gabriel Crowley

[www.landmanager.org.au/view/index2.aspx?id=291864](http://www.landmanager.org.au/view/index2.aspx?id=291864)

Last update Jan 2013

## For further information:

### Read

- + Dixon, I., Douglas, M., Dowe, J. & Burrows, D. 2006. Tropical Rapid Appraisal of Riparian Condition: Version 1 (for use in tropical savannas). River Management Technical Guideline No. 7. Canberra, Land & Water Australia. <http://lwa.gov.au/files/products/river-landscapes/pr061169/pr061169.pdf>
  - + Weeds Australia Weed Identification Guide: Annual Mission Grass *Cenchrus polystgachios* <http://www.weeds.org.au/cgi-bin/weedident.cgi?tpl=plant.tpl&state=&s=&ibra=all&card=G07>
  - + Northern Territory Government Weed Information: Annual Mission Grass [http://irm.nt.gov.au/\\_\\_data/assets/pdf\\_file/0018/19143/mission\\_grass\\_annual\\_id\\_sept11.pdf](http://irm.nt.gov.au/__data/assets/pdf_file/0018/19143/mission_grass_annual_id_sept11.pdf)
  - + Key Threatening Process Information: Invasion of northern Australia by Gamba Grass and other introduced grasses <http://www.environment.gov.au/biodiversity/threatened/ktp/pubs/northern-australia-introduced-grasses.pdf>
  - + JCU North Queensland Weed Identification Guide: *Cenchrus pedicellatus* [http://www-public.jcu.edu.au/discovernature/weeds/JCUDEV\\_015517](http://www-public.jcu.edu.au/discovernature/weeds/JCUDEV_015517)
  - + Mott J.J. 1980. Germination and establishment of the weeds *Sida acuta* and *Pennisetum pedicellatum* in the Northern Territory. *Australian Journal of Experimental Agriculture and Animal Husbandry* 20, 463-469.
  - + Setterfield S.A., Douglas M., Barratt J. and Brooks K. 2006. Reproductive phenology of *Pennisetum pedicellatum*. Pp 272-274 in *Fifteenth Australian Weeds Conference: Managing weeds in a changing climate, Adelaide, 24-28 September 2006* edited by C. Preston, J.H. Watts and N.D. Crossman. Weed Management Society of South Australia Inc., Adelaide. <http://www.caws.org.au/awc/2006/awc200612721.pdf>
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### Introduction

Coffee Bush was introduced into Australia last century from tropical America and is regarded as a high quality and palatable tropical fodder tree. It is considered a versatile tree and has been introduced widely around the tropics. The species is now naturalised throughout many parts of northern Australia and has become a weed of roadsides, disturbed areas and creeks. Coffee Bush is regarded as a weed in over 25 countries around the globe. Coffee Bush is a prolific seeder and has the capacity to spread rapidly. It is capable of growing on infertile soils and forms dense thickets. Coffee Bush also develops persistent seed banks in the soil.

There are two closely-related subspecies of Coffee Bush: *Leucaena leucocephala* ssp. *leucocephala* and *L. leucocephala* ssp. *glabrata*, of which there are cultivated varieties developed as forage plants. It is the former, sub-species that has become a serious environmental weed in the Northern Territory. It now occurs around many coastal communities and in a high number of river catchments across four of the 13 bioregions in the Top End. Coffee Bush is probably the most abundant woody weed in Darwin where it grows on coastal cliffs, the edge of mangroves and along most riparian systems.

### Impacts

Although Coffee Bush does not readily invade undisturbed forests or woodlands, it invades both disturbed and undisturbed riparian areas. Given the disturbance regimes associated with waterways, this species poses a serious threat to river systems and coastal wetlands.

Established stands of Coffee Bush form dense thickets, which suppress recruitment of native plants, thus directly reducing local biodiversity. Such dense stands also effect local wildlife populations by impeding their movements and reducing their ability to forage and avoid predation.

Coffee Bush is still promoted as a forage species for cattle and is an example of conflicting interest between pastoral and conservation values. Although Coffee Bush will not set seed if continuously grazed, stands of the plant will seed and thicken up if left ungrazed. This is particularly the case for *L. leucocephala* ssp. *leucocephala* as it seeds continuously and heavily throughout the year given sufficient soil moisture.

### Classification

Despite the fact that Coffee Bush is considered to pose a significant threat to biodiversity in tropical rangelands, it is not a declared weed at the State/Territory or National level. Coffee Bush is listed as a high impact weed in the Field Guide to Assessing Australia's Tropical Riparian Zones.

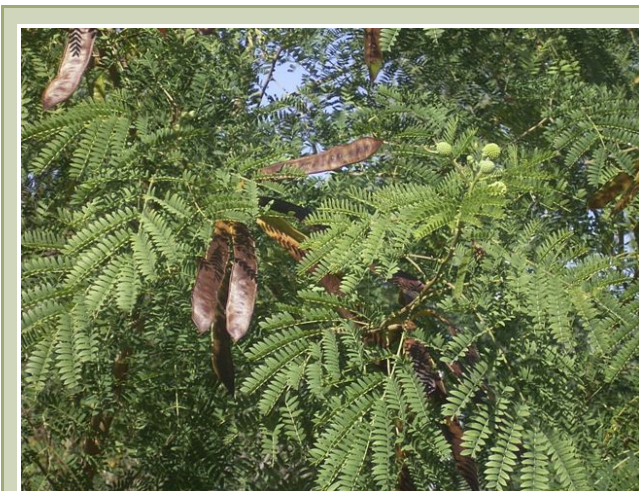


Photo: © Gary Hillen

Coffee Bush (*Leucaena leucocephala*)

Not listed as a weed Nationally, in the NT, WA or Qld

[www.landmanager.org.au/view/index2.aspx?id=290894](http://www.landmanager.org.au/view/index2.aspx?id=290894)

Profile written by John Westaway and edited by Zoe Disher

Last updated Jan 2013



**Photo:** © NRETAS

Coffee Bush forms dense stands replacing local native flora.

## Control

Individual Coffee Bush plants may be manually removed when small, taking care to ensure root removal. Grazing of plants before they grow tall can assist in control of this weed.

No herbicides are registered for the control of Coffee Bush in the Northern Territory. However in Queensland triclopyr and picloram are recommended for use in basal bark, cut and paint and foliar spray applications to Coffee Bush.

### For further information:

#### Read

- + Field Guide to Assessing Australia's Tropical Riparian Zones. [http://savanna.cdu.edu.au/environorth/teach/downloads/Field-Guide-Assess-Tropical-Riparian-Zones-07\\_low-res.pdf](http://savanna.cdu.edu.au/environorth/teach/downloads/Field-Guide-Assess-Tropical-Riparian-Zones-07_low-res.pdf)
- + Weeds Australia website <http://www.weeds.org.au/cgi-bin/weedident.cgi?tpl=plant.tpl&ibra=all&card=E28>
- + Northern Territory Government Weeds listing: Coffee Bush (*Leucaena leucocephala*): <http://lrm.nt.gov.au/weeds/find/alligator2>
- + Biosecurity Queensland leaflet on Leucaena *Leucaena leucocephala*. [http://www.daff.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Leucaena-PP85.pdf](http://www.daff.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Leucaena-PP85.pdf)

### Introduction

Guinea Grass was one of the earliest African Grasses to be introduced into northern Australia for cattle forage. It thrives in wet climates, growing best on well-drained soils where annual rainfall exceeds about 1,000 mm. In drier environments, it can colonise low lying areas and creek-lines. It is commonly found in disturbed sites or spreading along tracks and roads.

Guinea Grass forms dense clumps up to 1.5 m high. It can regenerate from seed, but generally persists through expansion of its perennial rootstock. It has been recorded in the Victoria River District, in the Daly region and on the Sturt Plateau, and at scattered locations across the Arnhem Land coast. It occurs in isolated patches on the Tiwi Islands.

### Impacts

Guinea Grass is a prime example of conflicting interests between wildlife conservation and pastoral production. It not only dominates the understorey where conditions are suitable, but its productive biomass promotes intense fires that can kill canopy trees. The extent of many rainforest patches has been reduced where Guinea Grass has established around their edges. Marginal attrition of rainforests caused by repeated Guinea Grass-fuelled fires could become a significant threat to several Tiwi rainforest plants, including Taracumbi Fern, Darwin Palm, Blue Quandong and Native Walnut. Orchids that grow on tree branches and mistletoes will also be particularly susceptible to these hot fires. Endangered land snails may also be at risk where Guinea Grass has invaded spring-fed rainforest habitat. Guinea Grass could also threaten species that use patches of bare ground for feeding sites, such as Partridge Pigeon and Butler's Dunnart.

### Classification

Despite its impact and its recognition as having significant weed potential, Guinea Grass is not formally classed as a weed in any State or Territory or at the National level. Advice provided by the Northern Territory government on the establishment of Guinea Grass pasture includes preventing its spread to roadsides or adjacent properties. It is listed as a high impact weed in the Field Guide to Assessing Australia's Tropical Riparian Zones. Though not one of the introduced grasses listed as a Key Threatening Process to biodiversity in northern Australia, its inclusion would be justified on the basis of it producing fuel loads that are equally damaging as many of the species listed.



**Photo:** © Gabriel Crowley

Guinea Grass (*Megathyrsus maximus*) produces high fuel loads for fires that destroy canopy trees

Not listed as a weed Nationally or in the NT, Qld or WA

Profile written by Gabriel Crowley and edited by Zoe Disher

[www.landmanager.org.au/view/index2.aspx?id=291184](http://www.landmanager.org.au/view/index2.aspx?id=291184)

Last updated Jan 2013





**Photo:** © Gabriel Crowley

Guinea Grass spreads along tracks from which it invades the adjoining woodlands and forests

## Control

There are various ways to control Guinea Grass. The most effective method is to dig up isolated clumps before the plants spread. While no herbicides are registered for the control of Guinea Grass in the Northern Territory, elsewhere glyphosate and fluazifop-p-butyl have been found to be effective. Pesticides should be used with care in and around wetland environments. Glyphosate is a non-specific weedicide, but is of low toxicity to wetlands animals. Fluazifop-p-butyl is a selective herbicide for grass control with a low toxicity to wetland animals, but needs to be used carefully around sedges, which it also kills.

### For further information: Read

- + Weeds Australia Weed Identification Guide: Guinea Grass <http://www.weeds.org.au/cgi-bin/weedident.cgi?tpl=plant.tpl&state=nt&s=&region=mac&form=grass&card=G24>
- + Queensland Government Pest Plant Profile: Guinea Grass [http://www.daff.qld.gov.au/4790\\_7296.htm](http://www.daff.qld.gov.au/4790_7296.htm)
- + Biosecurity Queensland Factsheet for Guinea Grass *Megathyrsus maximum* [http://www.daff.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Guinea-Grass-PP82.pdf](http://www.daff.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Guinea-Grass-PP82.pdf)



### Introduction

Mimosa is a shrubby legume that was introduced to Australia from South America for displaying in botanical gardens in the late 19th century. Its weedy characteristics only became apparent around 60 years later. Mimosa thrives on floodplains where floodwaters help to distribute its seeds. Mimosa is grazing-resistant and even flourished when wetlands were being intensely grazed by water buffalo.

In Australia, Mimosa is largely confined to the Northern Territory, where it is found in the Top End between the Western Australian border and the Roper River. The most serious outbreaks are in the Darwin-Daly region, the worst of these being on the Adelaide River floodplain. Mimosa has the potential to spread much further afield and invade any floodplain north of about Elliott.

### Impacts

Mimosa grows readily in wet grassy environments, converting them to impenetrable shrubland. Its dense foliage shades out the understorey and few native ground cover plants can survive under its canopy. If allowed to spread further in the Darwin region, Mimosa could displace several threatened plants where their habitats have not already been invaded by Para Grass. These include Spindly Goodenia, two bladderworts and two ground orchids.

Mimosa changes habitat structure so that it is no longer suitable for a wide range of animals, notably Yellow Chat, a bird of Top End floodplains. It may also become a problem for Water Mouse, Howard Springs Toadlet and Australian Painted Snipe.

Mimosa not only threatens wildlife, it also reduces pastoral and cultural values. Pastoral production is severely reduced by large infestations. Habitat for important bush tucker species, such as Magpie Geese, Brolga and other waterfowl, is also reduced. Mimosa control has unanimous support and is the subject of collaborative efforts across the Daly, Finniss, Reynolds, Adelaide and Mary River Catchments.

### Classification

Mimosa is a Weed of National Significance. It is a declared weed in the Northern Territory and comes under an approved statutory Weed Management Plan, ([Click here](#)). Weed Management Plans establish the management requirements that MUST be undertaken by land managers with respect to declared weeds. It is also a declared weed in Western Australia and Queensland. It is listed as a high impact weed in the Field Guide to Assessing Australia's Tropical Riparian Zones.

### Control

Control of Mimosa should start with the removal of any single plant or small clusters outside extensive stands. Seedlings can be manually removed, taking care to remove their root systems. Larger plants can be sprayed. Several chemicals have been used successfully against Mimosa, including fluroxypyr, metsulfuron-methyl, dicamba and glyphosate. Foliar spraying and applying pesticide to the basal bark or a cut stump are both effective. Soil applications of tebuthiuron have



Photo: © NRETAS

Mimosa (*Mimosa pigra*) can form impenetrable thickets across grassy floodplains

Weed of National Significance

NT Class A Weed S of 14°S (to be eradicated), NT Class B Weed N of 14°S (growth & spread to be controlled) & NT Class C Weed (not to be introduced)

WA Weed Class P1 (movement prohibited) & WA Weed Class P2 (aim to eradicate)

QLD Class 1 Weed (not to be introduced)

Profile written by Gabriel Crowley and edited by Zoe Disher

[www.landmanager.org.au/view/index2.aspx?id=291304](http://www.landmanager.org.au/view/index2.aspx?id=291304)

link to: [Mimosa Weed Management Plan](#)

Last updated May 2011

also provided some control however it is advised that this chemical is not used in established waterways or areas where surface water is present due to toxicity concerns.



**Photo:** © Stuart Blanch

Mimosa invasion along the Adelaide River Floodplain

Large infestations are best mechanically felled using chains, with follow-up burning. Both napalm and seeding of introduced Para Grass and Aleman grass have been used to fuel the fires, the recovery of the grasses also helping to suppress Mimosa regrowth. However, neither of these grasses should be used as they have ongoing effects on biodiversity and fire hazard levels that are possibly more detrimental than those of Mimosa.

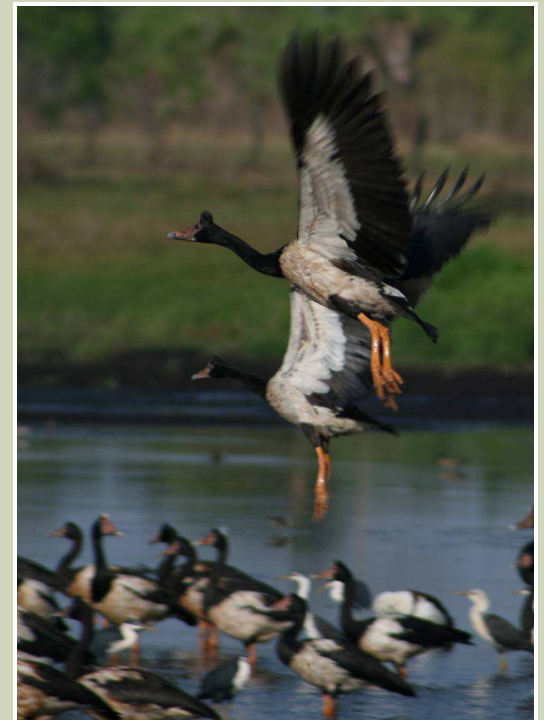
After burning or chaining, Mimosa regrowth should be sprayed followed by stick-raking and respraying. This whole process may take six or more years. Prevent reinfestation and new outbreaks by cleaning any machinery that has been used in affected areas.

Thirteen biological control agents have been released against Mimosa, of these five beetles and four moths have successfully established in the wild. These agents act in conjunction with other control methods and will help with the long term control of Mimosa.

#### For further information:

##### Read

- + Northern Territory Weed Information: *Mimosa pigra*. <http://lrm.nt.gov.au/weeds/find/mimosa>
- + Weeds Australia Weed Management Guide: *Mimosa pigra*. [www.weeds.gov.au/publications/guidelines/wons/pubs/m-pigra.pdf](http://www.weeds.gov.au/publications/guidelines/wons/pubs/m-pigra.pdf)
- + Weeds in Australia web page: *Mimosa pigra*. [www.weeds.gov.au/cgi-bin/weeddetails.pl?taxon\\_id=11223](http://www.weeds.gov.au/cgi-bin/weeddetails.pl?taxon_id=11223)
- + Weeds of National Significance information: [Weeds Australia - Weeds of National Significance - Mimosa](#)



**Photo:** © Stuart Blanch

Mimosa destroys the habitat of Magpie Geese

### Introduction

Para Grass is an exotic grass that threatens wetlands across northern Australia. Introduced into Australia in the late 19th century, it is now established in coastal floodplains across the Top End between Darwin and Nhulunbuy. It is a particular problem on the floodplains of the Mary River and Magela Creek, as well as on Croker Island. A small population was recorded on Bathurst Island in the 1990s.

### Impacts

Para Grass is an extremely vigorous grass that spreads by producing new roots along robust branching runners. It chokes wetlands and has been recorded suppressing native plant diversity by up to 75%. At risk are a range of plants that grow in permanently or seasonally flooded wetlands, including tiny plants like bladderworts, Typhonium and ground orchids, as well as the more robust Wild Rice and Arrowleaf Monochoria. Para Grass has been used to suppress regrowth of the noxious weed Mimosa. Changes in vegetation structure and composition wrought by Para Grass render habitat unsuitable for species as diverse as Water Mouse, Howard Springs Toadlet and Yellow Chat. Many fish, including Barramundi, cannot survive in the oxygen-depleted waters Para Grass creates. Fires fuelled by Para Grass kill trees. Successive fires can eventually reduce complex vegetation communities, with a range of species and life-forms, to monospecific grassland.

### Classification

The Northern Territory Parks and Conservation Masterplan lists Para Grass as a significant environmental weed in 11 out of 13 bioregions in the Top End. However, the Northern Territory Government still recommends its use as a pasture grass in wet or seasonally flooded areas in this region. These are exactly the type of habitats in which it is most invasive, and in which its use is now actively discouraged in Queensland. It is listed as a high impact weed in the Field Guide to Assessing Australia's Tropical Riparian Zones and recognised as a Key Threatening Process to biodiversity in northern Australia.

### Control

While herbicides are not registered for the treatment of Para Grass in the Northern Territory, elsewhere spraying with glyphosate has been found to be effective. The best level of control is attained by spraying actively growing plants. Roundup Biactive® can be used to control Para Grass with no adverse effects on other wetland species. Grazing can be used to keep Para Grass in check, but not eliminate it. Another solution, used in Townsville, is to burn patches of Para Grass in the late dry season. These areas are returned to open water, allowing Wild Rice to recolonise.

### For further information: Read

- + Biosecurity Queensland Pest Series Factsheet: Para grass (*Brachiaria mutica*) [www.dpi.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Para-Grass-PP90.pdf](http://www.dpi.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Para-Grass-PP90.pdf)
- + Field Guide to Assessing Australia's Tropical Riparian Zones. [www.savanna.cdu.edu.au/environorth/teach/downloads/Field-Guide-Assess-Tropical-Riparian-Zones-07\\_low-res.pdf](http://www.savanna.cdu.edu.au/environorth/teach/downloads/Field-Guide-Assess-Tropical-Riparian-Zones-07_low-res.pdf)
- + Weeds Australia Weed Identification: Para Grass *Urochloa mutica* <http://www.weeds.org.au/cgi-bin/weedident.cgi?tpl=plant.tpl&state=&s=&ibra=all&card=G08>



Photo: © Gabriel Crowley

Fires fuelled by Para Grass (*Brachiaria mutica*) have killed these trees

Not listed as a weed Nationally, in the NT, Qld or WA

Profile written by Gabriel Crowley and edited by Zoe Disher

[www.landmanager.org.au/view/index2.aspx?id=293304](http://www.landmanager.org.au/view/index2.aspx?id=293304)

Last updated Jan 2013

- + National Wetlands R & D Program, 2001, *Weed Management and the Biodiversity and Ecological Processes of Tropical Wetlands*  
<http://www.environment.gov.au/water/publications/environmental/wetlands/pubs/weed.pdf>
  - + Queensland Government Invasive Species Risk Assessment: Para Grass, 2012 [http://www.daff.qld.gov.au/documents/Biosecurity\\_EnvironmentalPests/IPA-Para-Grass-Risk-Assessment.pdf](http://www.daff.qld.gov.au/documents/Biosecurity_EnvironmentalPests/IPA-Para-Grass-Risk-Assessment.pdf)
  - + Northern Territory Government Weed Identification: Para Grass <http://www.lrm.nt.gov.au/weeds/?a=126455>
  - + Key Threatening Process Information: Invasion of northern Australia by Gamba Grass and other introduced grasses [www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=18](http://www.environment.gov.au/cgi-bin/sprat/public/publicshowkeythreat.pl?id=18)
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