Weed Management Plan for Gamba Grass
(Andropogon gayanus)

2018
Weed Management Plan for Gamba Grass

Weed Management Branch
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Section 1 - Overview

Introduction

This plan is the Weed Management Plan for Gamba Grass (*Andropogon gayanus*) 2018 and is a statutory plan under the *Weeds Management Act* (the Act), administered by authorised Weed Management Officers in the Weed Management Branch, Department of Environment and Natural Resources (DENR).

Statutory weed management plans are legal documents designated under section 10 of the Act for high risk declared weeds in the Northern Territory. These plans establish the legal requirements and management actions to be undertaken by all owners and occupiers of land on which the declared weed is present in the Northern Territory.

Section 9(2) of the Act compels all owners and occupiers to comply with a statutory weed management plan relating to a weed. Non-compliance is an environmental offence level 3 under the *Environmental Offences and Penalties Act*. Non-compliance may include failure to undertake any of the required actions specified in a plan.

Gamba grass (*Andropogon gayanus*) is a Weed of National Significance which has been assessed as a very high risk weed in the Northern Territory. In 2009 the Australian Government listed gamba grass as a key threatening process under the *Environment Protection and Biodiversity Conservation Act 1999* and is one of the five listed grasses in the *Threat abatement plan to reduce the impacts on northern Australia’s biodiversity by the five listed grasses* (Commonwealth of Australia, 2012).

Gamba grass is a tall African perennial grass first introduced into Australia in the 1930s specifically for use as a cattle pasture in the Northern Territory and Queensland. Since its introduction, gamba grass has proven to be highly invasive.

Gamba grass is one of the most destructive weeds in the Northern Territory. It spreads easily and invades pasture, bushland, river corridors, transport and other infrastructure corridors. Its fuel load can produce up to eight times more intense fires than any native grass. Gamba grass fuel loads are around 11 t/ha, compared to 3.6t/ha for native grasses (Setterfield et al., 2010) and have been recorded at up to 30t/ha (Setterfield et al., 2013). The intensity and height of flames of gamba grass fires can threaten human health and safety, life and infrastructure and can cause irreversible damage to ecosystems. Gamba grass is modifying fire regimes and species composition across the Top End (Setterfield et al. 2005).

The first statutory plan for gamba grass was gazetted on 21 July 2010 for a period of ten years. In 2014 the plan was reviewed in accordance with the Act. It was amended following the review and gazetted on 9 April 2014. The 2018 plan is the result of a final review of the original and 2014 amended plan. This Plan will commence on the date it is gazetted, that is 8 August 2018; and will remain in force until it is revoked.

Declaration

Gamba grass is a declared weed throughout the Northern Territory under section 7 of the Act. This prohibits movement or transport of gamba grass on a public road by itself or as a contaminant, its entry to the Northern Territory, or sale by itself or as a contaminant. Land owners and occupiers are required to destroy isolated plants and infestations or control and contain large infestations of gamba grass growing on their land.

Declared weeds affect the entire Northern Territory community. Management of these weeds is an essential precursor to achieving outcomes related to improving the Northern Territory’s productivity, competitiveness, sustainability and natural environment.
Gamba grass is declared for the purpose of setting maximum penalties and for other purposes, as:

- **Class A (to be eradicated)** in all areas of the NT except where it is classified as Class B;
- **Class B (growth and spread to be controlled)** in the area shown in Figure 1 and described in Appendix A; and
- **Class C (not to be introduced)** in all areas of the Northern Territory (all declared weeds are also declared Class C).

It is the expectation of the Northern Territory Government that owners and occupiers of land in the Class B zone control all infestations of gamba grass towards eradication.

The delineation of management zones (refer Figure 1) is directly associated with the declaration classes:

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**Figure 1: Gamba grass management zones**
Definitions

**Eradication:** Relative to pest plants, is the total removal of a species and its propagules from an area so that it cannot recur unless introduced from external sources. For eradication to be achieved, no viable propagules (plant parts or seeds) can remain in the area or be allowed to return. This requires considerable investment over the short to medium term (3-5 years).

**Control and containment:** To reduce size and density of infestations and contain the presence of a species in a specific area. This requires ongoing investment in surveillance and control activities and mitigating the impact of the weed.

Containment requires that gamba grass does not spread further on a property or along a corridor to adjoining clean areas or properties. This management technique involves actively managing the infestation in strategic areas or areas with a high risk of spread potential, and controlling the infestations from the outside towards the centre, gradually reducing the infestation over time.

**Maintenance period:** The period after which there is no longer any reproduction from the original infestation being controlled. During the maintenance period, there may be recruitment from outside the original infestation which requires control. Maintenance is ongoing following the eradication of the original infestation.

**Prevent:** To stop (something) from happening.

**Outlier (isolated) plants and infestations:** Any gamba grass located outside of a core infestation area (in the Class B zone) and any gamba grass in the Class A zone (outside of permitted areas).

**Core infestation:** An established population of gamba grass in the Class B zone from which outliers may arise.

**Human-assisted spread:** Spread of weeds into new areas through trade, transport, tourism and travel, usually on a person or vehicle.

**Sacred site:** A site that is sacred to Aboriginals or is otherwise of significance according to Aboriginal tradition, and includes any land that, under a law of the Northern Territory, is declared to be sacred to Aboriginals or of significance according to Aboriginal tradition (Aboriginal Land Rights (Northern Territory) Act 1976). The Northern Territory Aboriginal Sacred Sites Act applies.

Aim

To mitigate the damage caused by gamba grass in relation to the natural environment, property, infrastructure and public health and safety by defining the minimum management requirements applying to all owners and occupiers of land in the Northern Territory.

Goals

Asset protection and reduction of risk to public health and safety:
1. No new core infestation areas develop in the Class B zone.
2. Gamba grass does not spread beyond existing core or isolated infestation areas.
3. Core gamba grass infestations are reduced in size.
4. Density of core infestations areas are reduced in the Class B zone.
5. Outlying gamba grass plants and infestations are eradicated.
Objectives

1. By 2023, the extent of gamba grass is known in the Northern Territory.
2. By 2023, areas with high value assets at risk from gamba grass have been identified with stakeholder input.
3. By 2023, priority plans for the protection of high value assets have been finalised with stakeholder input.
4. By 2028, outlying gamba grass plants and infestations have been eradicated.
5. Human-assisted spread of gamba grass is minimised.
6. By 2023, all land parcels that are 2 hectares or less have less than 1% gamba grass cover.
7. By 2028, all land parcels that are 8 hectares or less have less than 1% gamba grass cover.
8. Compliance and enforcement plans for gamba grass are aligned with agreed regional weed planning priorities.

Achieving the Plan’s objectives

Achieving these objectives will require strategic and coordinated action and investment from land owners and occupiers with gamba grass, the Northern Territory Weed Management Branch and other Northern Territory Government agencies.

Education and awareness

An important and effective tool in achieving results for any weed management program is education and awareness. Awareness of the damage a weed can have on the environment, people and the economy is helpful for land owners and occupiers to better understand the effects of non-management including risk to life and property.

Successful delivery and implementation of extension activities and programs will assist land owners and occupiers understand their obligations and execute management actions to manage gamba grass in the Northern Territory.

Education and awareness in gamba grass management includes delivery of extension materials and activities focused on:

- Strategic planning
- Data collection
- Best practice control methods
- Spread prevention and hygiene protocols
- Risk management.

Stakeholder investment and long-term commitment to weed management as well as implementation of a targeted education and awareness program based on the elements above, will greatly assist with achieving the objectives of this plan.
Strategic approaches

The Northern Territory Government expects owners and occupiers of land parcels:

- within the Class A zone, to control gamba grass towards eradication; and
- of 8 hectares or less in the Class B zone, to control all infestations of gamba grass towards eradication.

Strategic approaches to weed management planning ensure more efficient use of resources to achieve the best on-ground outcomes. Regional and catchment weed management plans can significantly improve stakeholder awareness and ownership in weed management and provide for long-term goal-setting and agreed regional actions rather than one-off, reactive control.

Through strategic weed management planning on a regional basis, areas can be prioritised for control to reduce spread and infestation of other or clean areas or to protect assets whether they be cultural, economic, production or environment-focused, or for human health and safety. Land owners and occupiers can also agree where effort needs to be focused to maximise the impact of resources applied.

Strategic weed management planning also helps to determine those areas with extreme fire risk and public safety issues in collaboration with relevant agencies and landholders. These areas are a high priority for compliance and enforcement activity by the Northern Territory Government.

Advice regarding this type of planning is available to lands owners and occupiers from the Weed Management Branch.

Regional and catchment scale planning is explored further in Section 2, together with an outline of how Property Management Plans should be developed.

Compliance and enforcement

Implementation of a compliance and enforcement framework includes providing management advice and issuing Orders and Infringement Penalty Notices under the Act, to achieve the objectives of the plan.

Implementation of the management requirements in Section 2 of this plan will ensure compliance with this plan. Compliance with this plan will subsequently reduce the effect gamba grass is having on the environment across the Northern Territory by reducing spread and gamba grass infestation sizes in the B zone, and by eradicating gamba grass from the A zone (unless a permit is in place – see page 15).
Section 2 – Your legal obligations

Roles and responsibilities

Everyone has a role to play in the management of declared weeds.

Land Owners and Land Occupiers: All land owners and land occupiers (public and private) are responsible for managing declared weeds on their land under the Act and relevant statutory Weed Management Plans, including this plan - the Weed Management Plan for Gamba Grass (*Andropogon gayanus*).

Northern Territory Government: The Northern Territory Government Department of Environment and Natural Resources is responsible for administering Northern Territory’s primary legislation for declared weeds, the *Weeds Management Act* (the Act), setting Territory-wide strategic policy for declared weeds and enforcing the provisions of the Act.

The Northern Territory Government also has responsibilities for the management of declared weeds as a land manager under the Act and other relevant laws. The Northern Territory Government manages parks and reserves through the Department of Tourism and Culture (Parks and Wildlife Commission), Crown land, Land Corporation land and road reserves through the Department of Infrastructure, Planning and Logistics and residential land through the Department of Housing and Community Development. Management of fire, particularly with regard to grassy weeds is undertaken by the DENR Bushfires NT Division.

Local Government: Local governments have responsibilities to manage declared weeds and protect land and water resources on land they manage.

Australian Government: The Australian government's role in managing weeds is mainly in relation to national pre-border and border biosecurity, with a co-ordination and leadership role for achieving national biosecurity outcomes, identifying key threatening processes and developing national level policies and strategies such as the Australian Weeds Strategy. It also manages Commonwealth lands, including defence land e.g. Tindal Air Base, Bradshaw, Mount Bundy, and Kakadu National Park. Gamba grass is also considered (negatively) in new carbon sequestration methodology managed by the Department of Environment and Energy as part of the Emissions Reduction Fund. The Commonwealth Government also supports community and Aboriginal ranger groups to control weeds on land which they have an interest.

Legislation

Section 9 of the Act stipulates the General Duties of all owners and occupiers of land with regard to the management of weeds.

Under section 9(1) of the Act, all landowners, including the Crown, public authorities and licensees of Crown lands, must, in relation to their land:

(a) take all reasonable measures to prevent the land being infested with a declared weed;
(b) take all reasonable measures to prevent a declared weed or potential weed on the land spreading to other land; and
(c) within 14 days after first becoming aware of a declared weed that has not previously been, or known to have been, present on the land, notify a Weed Management Officer of the presence of the declared weed.

In the case of non-compliance with section 9 of the Act, a Weed Management Officer can serve an order on a land owner or occupier outlining reasonable measures that must be taken for the control
or eradication of a declared weed species on their land within a specified timeframe. Not complying with the conditions of an Order is an offence and may involve financial penalty.

The Act also contains provisions to prevent the spread of declared weeds, through regulating the purchase, sale, possession for the purposes of sale, propagation or transport of these species into or within the Northern Territory.

In summary, it is an offence to:

- not comply with a weed management plan relating to a declared weed, including gamba grass
- dispose of a declared weed on the land other than that on which it is present (except at a designated weed disposal area)
- sell or trade any declared weeds; and

except in accordance with a permit, a person must not do any of the following:

- bring a declared weed or take part in, or be responsible for, bringing a declared weed into the Northern Territory
- propagate or scatter a declared weed
- sell or offer to sell a declared weed or any thing that contains or carries a declared weed
- hire any equipment, device or thing that contains or carries a declared weed or potential weed
- purchase or offer to purchase a declared weed or any thing that contains or carries a declared weed
- store, grow or use a declared weed or any thing that contains or carries a declared weed
- transport or carry on his or her person a declared weed or anything that contains or carries a declared weed.

**Penalties for offences under the Act**

The Northern Territory Government has the capacity to prosecute for non-compliance with the Act or this weed management plan. A land owner or occupier must also comply with a Weed Management Officer’s Order in relation to any of these requirements.

Land owners and occupiers should be aware that non-compliance with section 9 of the Act can incur a range of penalties from 77 to 770 penalty units\(^1\) for an individual and up to 385 to 3850 penalty units for a body corporate.

Non-compliance with an Order can incur a penalty of 100 penalty units.

\(^1\) Click on the link for current penalty unit value.
**Required actions by all persons with gamba grass on their land**

The actions detailed in Table 1 have been identified as the minimum acceptable requirements needed to achieve compliance with this plan by all persons and organisations with gamba grass on land they own or occupy. All required actions with timeframes based upon commencement of the plan are to be implemented from the gazetted date found on page 4.

Actions are described for land located in the Class A or B zones (Parts 1 and 2), and more specific actions are described based on land location, purpose, or lot size and the Northern Territory Planning Scheme zoning2 (Parts 3-9) (Parts 4--7 reflect those land parcels outside of the boundaries of Part 3).

**Table 1: Required gamba grass management actions**

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<td>Part</td>
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**Class A zone – eradication target**

**PART 1: Class A zone – eradication target.**

All land owners and occupiers with gamba grass on their land in the Class A zone must:

1.1 Eradicate gamba grass from the land. Eradication is to be achieved within five years of commencement of this plan.

1.2 Survey land for gamba grass and submit to the Weed Management Branch the following information:

- survey area covered: GPS track log or area shown on map; and
- location of gamba grass areas found with the density, diameter (area), and date observed within one year of implementation of this plan, and again in May 2020 and 2026³.

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2 All lot size descriptions include vacant Crown land and other publicly owned land parcels (such as parks and reserves, future development land, Land Corporation land, Defence and Commonwealth owned and leased land), Aboriginal Land and all unzoned land, privately owned or leased (e.g. pastoral or Land Use Agreement parcels) or land under development.

3 For all required submissions and Department contact information, refer Appendix E.
**PART 1: Class A zone – eradication target.**
All land owners and occupiers with gamba grass on their land in the Class A zone must:

| 1.3 | Destroy all outlier gamba grass plants and infestations as a priority. |
| 1.4 | Not allow gamba grass to spread into ‘clean’ (gamba grass free) areas or adjoining land. |
| 1.5 | Minimise seed production by controlling gamba grass prior to flowering and seeding. |
| 1.6 | Actively monitor and destroy any gamba grass plants during the maintenance period. |
| 1.7 | Notify the Weed Management Branch of the presence of gamba grass within 14 days when identified in areas which it has not been observed previously. |

Class B zone – control and contain target

**PART 2: Class B zone – control and contain target.**
All land owners and occupiers with gamba grass on their land in the Class B zone must:

| 2.1 | Destroy all outlier gamba grass plants and infestations as a priority. |
| 2.2 | Control, contain and reduce all gamba grass infestations to meet requirements for land location, purpose or size as per Parts 3-9. |
| 2.3 | Not allow gamba grass to spread into clean areas or adjoining land. |
| 2.4 | Control gamba grass prior to flowering and seeding. |
| 2.5 | Monitor areas under active control for new infestations and control as required. |
| 2.6 | Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone that is a distance of 100 m within the Class B zone from the Class A zone boundary within five years of commencement of this plan. |
| 2.7 | Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone that is a distance of 100 m around recognised sacred sites and sites of cultural significance, within five years of commencement of this plan. |
| 2.8 | Notify the Weed Management Branch of the presence of gamba grass within 14 days when identified in areas which it has not been observed previously. |

The following refers to Parts 3-6 and 8:

Land owners and occupiers within the Class B zone may continue to use gamba grass as a pasture species; however, it must be grazed as per Section 4 of this plan. Land owners and occupiers must ensure that the gamba grass is contained within existing pasture paddocks and does not spread within or from the property.

Gamba grass may be cut and baled for the purpose of fodder for use only on the property on which it is grown. Cutting and baling must be completed prior to gamba grass flowering (typically April).

Gamba grass must not be sold as hay or moved off properties but may be moved within properties for use as fodder, provided that the fodder is clean of seed and does not result in the establishment of new infestations of the grass. Hay containing gamba grass cannot be moved along or across public roads unless a valid permit is held (refer Permits section). This applies even when properties on different sides of the road are under the same ownership or management.
PART 3 – Class B zone: All lots located in Zone T (Township) or Rural Activity Centres (Local Government Areas).
Includes all urban and peri-urban developments - residential and industrial
All land owners and occupiers with gamba grass on their land in these zones must:

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<tr>
<td><strong>3.1</strong></td>
<td>Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone on all land parcels ≤ 200 hectares, that is a distance of 15 m around property boundaries, infrastructure, flammable materials and along tracks and roads, within one year of commencement of this plan.</td>
</tr>
<tr>
<td><strong>3.2</strong></td>
<td>Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone on all land parcels &gt; 200 hectares, that is a distance of minimum 15 m in width, along existing firebreaks, river corridors, infrastructure such as roads and tracks and fence lines or other natural land formations to prevent spread into ‘clean’ areas or into neighbouring land within five years of commencement of this plan.</td>
</tr>
<tr>
<td><strong>3.3</strong></td>
<td>Destroy all gamba grass plants on land parcels ≤ 2 hectares within five years of commencement of this plan and maintain infestation at levels of less than 1% cover.</td>
</tr>
<tr>
<td><strong>3.4</strong></td>
<td>Destroy all outlier gamba grass plants and infestations and control, contain and demonstrably reduce all dense gamba grass infestations on land parcels &gt; 2 hectares within five years of commencement of this plan.</td>
</tr>
<tr>
<td><strong>3.5</strong></td>
<td>Destroy all gamba grass plants on land parcels &gt; 2 hectares within ten years of commencement of this plan and maintain infestations at levels of less than 1% cover.</td>
</tr>
<tr>
<td><strong>3.6</strong></td>
<td>Not allow gamba grass to establish on soil stockpiles.</td>
</tr>
<tr>
<td><strong>3.7</strong></td>
<td>Not use gamba grass contaminated soil stockpiles as clean fill or topsoil.</td>
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PART 4 – Class B zone (1 - 8 hectares).
All land owners and occupiers with gamba grass on their land of parcels this size must:

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<tr>
<td><strong>4.1</strong></td>
<td>Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone on all land parcels, that is a distance of 15 m in width around property boundaries, infrastructure, flammable materials and along tracks and roads, within one year of commencement of this plan.</td>
</tr>
<tr>
<td><strong>4.2</strong></td>
<td>Destroy all gamba grass plants on land parcels ≤ 2 hectares within five years of commencement of this plan and maintain infestation at levels of less than 1% cover.</td>
</tr>
<tr>
<td><strong>4.3</strong></td>
<td>Actively control, contain and reduce all gamba grass infestations by minimum 50% of infestation size on land parcels &gt;2 – 8 hectares within five years of commencement of this plan and demonstrably reduce infestations over the life of this plan.</td>
</tr>
<tr>
<td><strong>4.4</strong></td>
<td>For development/construction areas: Design and implement a weed spread prevention program including quarantine and/or hygiene procedures, which will ensure no new infestations establish as a result of the development process/activities, or off-property.</td>
</tr>
<tr>
<td><strong>4.5</strong></td>
<td>Control gamba grass in areas scheduled for construction works prior to flowering. No earthworks to occur through seeding gamba grass.</td>
</tr>
<tr>
<td><strong>4.6</strong></td>
<td>Actively control, contain and reduce all gamba grass infestations over the life of this plan.</td>
</tr>
<tr>
<td><strong>4.7</strong></td>
<td>Not allow gamba grass to establish on soil stockpiles.</td>
</tr>
<tr>
<td><strong>4.8</strong></td>
<td>Not use gamba grass contaminated soil stockpiles as clean fill or topsoil.</td>
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</table>
### PART 5 – Class B zone (>8 - 20 hectares).

All land owners and occupiers with gamba grass on their land of parcels this size must:

<table>
<thead>
<tr>
<th>5.1</th>
<th>Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone on all land parcels, that is a distance of 15 m in width around property boundaries, infrastructure, flammable materials and along tracks and roads, within one year of commencement of this plan.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2</td>
<td>Destroy all outlier gamba grass plants and infestations within five years of commencement of this plan.</td>
</tr>
<tr>
<td>5.3</td>
<td>Actively control, contain and reduce all core gamba grass infestations by minimum 50% of infestation size within five years of commencement of this plan and demonstrably reduce infestations over the life of this plan.</td>
</tr>
<tr>
<td>5.4</td>
<td>Not sow or plant gamba grass.</td>
</tr>
<tr>
<td>5.5</td>
<td>For development/construction areas: Design and implement a weed spread prevention program including quarantine and/or hygiene procedures, which will ensure no new infestations establish as a result of the development process/activities, or off-property. Provide the spread prevention program to the Weed Management Branch upon request.</td>
</tr>
<tr>
<td>5.6</td>
<td>Control gamba grass in areas scheduled for construction works prior to flowering. Ensure works do not occur through seeding gamba grass.</td>
</tr>
<tr>
<td>5.7</td>
<td>Not allow gamba grass to establish on soil stockpiles.</td>
</tr>
<tr>
<td>5.8</td>
<td>Not use gamba grass contaminated soil stockpiles as clean fill or topsoil.</td>
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</table>

### PART 6 – Class B zone (>20 hectares).

All land owners and occupiers with gamba grass on their land of parcels this size must:

<table>
<thead>
<tr>
<th>6.1</th>
<th>Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone on all land parcels &gt; 20 - 200 hectares, that is a distance of 15 m in width around property boundaries, infrastructure, flammable materials and along tracks and roads, within one year of commencement of this plan.</th>
</tr>
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<tbody>
<tr>
<td>6.2</td>
<td>Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone on all land parcels &gt; 200 hectares, that is a distance of minimum 15 m in width along existing firebreaks, river corridors, infrastructure such as roads and tracks and fence lines or other natural land formations to prevent spread into clean areas or into neighbouring land within five years of commencement of this plan.</td>
</tr>
<tr>
<td>6.3</td>
<td>For properties &gt; 200 hectares, develop a Property Weed Management Plan⁴ as per the “Planning for better weed management” guide and identify buffer zones in the property plan. Submit to the Weed Management Branch upon request.</td>
</tr>
<tr>
<td>6.4</td>
<td>Actively control, contain and reduce all gamba grass infestations by minimum 50% of infestation size on land parcels &gt; 20 - 200 hectares within five years of commencement of this plan and demonstrably reduce infestations over the life of this plan (for properties not utilising gamba grass as a pasture).</td>
</tr>
</tbody>
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⁴ A compliant property weed management plan will include, as a minimum, all steps listed as per the Planning for better weed management document, ‘How To’ guide.
### PART 6 – Class B zone (>20 hectares).

**All land owners and occupiers with gamba grass on their land of parcels this size must:**

| 6.5 | Actively control and contain all gamba grass infestations outside of pasture (gamba grass) growing paddocks and demonstrably reduce infestations over the life of this plan (for properties utilising gamba grass as a pasture). |
| 6.6 | Implement intensive grazing management techniques to prevent seeding if utilising gamba grass as a pasture. Consider a species replacement program (Refer Section 4 - Management). |
| 6.7 | For development/construction areas: Design and implement a weed spread prevention program including quarantine and/or hygiene procedures, which will ensure no new infestations establish as a result of the development process/activities, or off-property. |
| 6.8 | Control gamba grass in areas scheduled for construction works prior to flowering. No earthworks to occur through seeding gamba grass. |
| 6.9 | Not allow gamba grass to establish on soil stockpiles. |
| 6.10 | Not use gamba grass contaminated soil stockpiles as clean fill or topsoil. |
| 6.11 | Not cut gamba grass for the purpose of use as fodder or mulch for sale. |

### PART 7 – Class B zone: Mining and extractive industries.

**All land owners and occupiers with gamba grass on their mining and/or exploration leases must:**

| 7.1 | Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone on all land parcels that are ≤ 200 hectares, that is a distance of 15 m in width around property/lease area boundaries, infrastructure, flammable materials and along tracks and roads, within one year of commencement of this plan. |
| 7.2 | Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer zone on all land parcels that are > 200 hectares, that is a distance of minimum 15 m in width along existing firebreaks, river corridors, infrastructure such as roads and tracks and fence lines, or other natural land formations to prevent spread into clean areas or into neighbouring land. |
| 7.3 | Consult with adjoining land owners and the Weed Management Branch prior to applying for exploration and mining leases, licences and development of mines and associated roads and infrastructure. Utilise the Northern Territory Government’s NR Maps website as a guide to identify possible weed locations in your proposed lease areas. |
| 7.4 | Survey for and map weeds (including gamba grass) in areas proposed for exploration lines, extractive leases and associated infrastructure and road corridors. Submit weed survey and control data to the Weed Management Branch prior to exploration or construction commencing. |
| 7.5 | Destroy gamba grass in areas scheduled for construction, extraction or exploration works prior to flowering. No earthworks to occur through seeding gamba grass. |
| 7.6 | Actively control, contain and reduce all gamba grass infestations by minimum 50% of infestation size within five years of commencement of this plan and demonstrably reduce infestations for the term of the lease (during the life of this plan). |
| 7.7 | Not move machinery or transport materials contaminated with gamba grass seed from site. |
PART 7 – Class B zone: Mining and extractive industries.
All land owners and occupiers with gamba grass on their mining and/or exploration leases must:

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<tr>
<td>7.8</td>
<td>Regularly inspect and destroy gamba grass on stockpiles, tracks, windrows and haul roads.</td>
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<tr>
<td>7.9</td>
<td>Design and implement a weed seed spread prevention program in accordance with the “Preventing Weed Spread Is Everybody’s Business” document, including hygiene procedures. Include exclusion zones in heavily infested areas. Educate contractors and maintenance staff in gamba grass identification. Avoid exploration or grading through seeding gamba grass and collaborate with adjoining land owners. Align and plan in conjunction with owner/manager of underlying tenure.</td>
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PART 8 – Class B zone: Hay industry (production, sale, purchase, transport).
All land owners and occupiers with gamba grass on their hay production land must:

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<tr>
<td>8.1</td>
<td>Not cut or mow an area for the purpose of producing hay if it is infested or contaminated with a declared weed, including gamba grass. All areas used for hay production must be free of gamba grass.</td>
</tr>
<tr>
<td>8.2</td>
<td>Establish and maintain by chemical, mechanical or physical means, a gamba grass free buffer that is a distance of 40 m in width from the outside boundary edge of all hay cutting areas.</td>
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<tr>
<td>8.3</td>
<td>Not drive cutting or baling machinery through seeding gamba grass.</td>
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<tr>
<td>8.4</td>
<td>Apply for and be granted a ‘permit to use a declared weed’, to transport contaminated products (hay) for destruction. Transport companies must also have a permit to transport weed contaminated products. All weed seed contaminated hay must be fully covered/tarped when being transported.</td>
</tr>
<tr>
<td>8.5</td>
<td>Adhere to all other required actions as per land size outside of the hay growing areas.</td>
</tr>
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</table>

PART 9 – Class B zone: Transport and service corridors and easements.
All corridor and easement land owners and occupiers with gamba grass on their land must:

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<tbody>
<tr>
<td>9.1</td>
<td>Consult the Weed Management Branch in the development of tenders and future contracts for weed management, other maintenance and construction.</td>
</tr>
<tr>
<td>9.2</td>
<td>Consult with adjoining land owners and the Weed Management Branch prior to corridor construction works. Utilise the Northern Territory Government’s NR Maps website as a guide to locate weed infestations.</td>
</tr>
<tr>
<td>9.3</td>
<td>Collect targeted data for weeds in corridors to inform a detailed management program.</td>
</tr>
<tr>
<td>9.4</td>
<td>Conduct annual surveys to identify any new or re-establishing gamba grass infestations and to monitor contract performance.</td>
</tr>
</tbody>
</table>
PART 9 – Class B zone: Transport and service corridors and easements.

**All corridor and easement land owners and occupiers with gamba grass on their land must:**

| 9.5 | Develop a maintenance schedule for control that limits risk of spread from vehicles and equipment (such as slashers, bulldozers, graders or trains) by moving towards large infestations and not through or away from these areas; include post-slicing follow-up chemical control. Refer to the “Preventing Weed Spread Is Everybody’s Business” document for information. |
| 9.6 | Actively control and contain all gamba grass infestations and demonstrably reduce infestations in the Class B zone over the life of this plan. |
| 9.7 | Survey for and map gamba grass in areas scheduled for construction, clearing or grading prior to works commencing to determine gamba grass control requirements. Control all gamba grass before works commence and prior to flowering. |
| 9.8 | Not move any soil contaminated with gamba grass seed from site. It is to be buried or treated. It is not to be used as clean fill or topsoil. |
| 9.9 | Maintain data records and submit weed survey and control data to the Weed Management Branch upon request. |

**Permits**

Under section 30 of the *Weeds Management Act*, a person may apply to the Minister for a permit to use a declared weed. (This power has been delegated to the Department’s Weed Management Branch Director.) The Minister may refuse or grant a permit subject to a range of conditions. Permits will generally only be granted where landholders have demonstrated a commitment to continual improvement in weed management or research, and are not intended to allow ongoing use or spread of declared weeds.

- A person or organisation in the Class B zone may currently utilise gamba grass as a pasture without a permit if managed in accordance with the above requirements. However, persons must obtain a permit to move gamba grass contaminated hay across a public road if the road bisects the property. Gamba grass contaminated hay may only be moved within the property boundary of which it was grown.

- Permits must be acquired for transport of gamba grass contaminated hay for destruction (e.g. to a cubing/pelleting plant).

- A person or organisation in the Class A zone shall not, except in accordance with a permit, utilise gamba grass as an improved pasture.

- Permit applications can take up to six weeks to process, depending on the proposed activity.
Section 3 – Planning

It is well recognised that successful planning, prevention of weed spread and management of weeds requires effective partnerships, clear management goals, best practice management techniques, and methods to monitor progress and targeted research. Planning is one of the most useful tools in managing weeds and achieving the best outcomes for effort.

Regional weed management plans

Weeds are an ongoing threat to the natural, economic and cultural assets of a region. This continues despite the time and effort already invested in weed management.

Regional weed management plans identify priority weeds in a region and form part of a strategic approach to reducing the impact of a region's priority weeds by the Northern Territory Government, with key stakeholders including Regional Weed Reference Groups. Direct consultation with key stakeholders is integral to the development of these plans. These are not statutory documents.

In the Northern Territory, there are regional weed management plans for Darwin, Katherine, the Barkly and Alice Springs regions.

The plans also align with and support the implementation of individual statutory weed management plans and provide direction for managing weed threats through:

- Identifying priority weeds, priority landscape areas and priority pathways of weed spread.
- Providing a platform for a Regional Weed Reference Group to operate.
- Guiding future funding and resource investment.

The scale and range of weed management issues which already exist across the regions highlight the importance of a coordinated and collaborative approach to the reduction of weed impacts. Therefore, the regional weed management plans encourage a 'working together' approach. These plans aid in the development and implementation of catchment management plans.

Regional priority areas for weed management

As gamba grass primarily affects the Top End and Katherine regions (including the Gulf, Victoria River District area and Arnhem Land), landscapes and spread pathways have been identified as priority areas for weed management and asset protection within the regions. These priorities have been identified by the Regional Weed Reference Groups in both Darwin and Katherine.

Priority landscape areas presented in Table 2, were determined using one or more of the following criteria:

- Fire risk danger
- Low incursions of weeds
- Site of significance for biodiversity conservation in the NT
- Significant commercial values
- Very high visitation areas
- Significant cultural and heritage values
- Susceptibility to invasion
- Weed source areas including top of streams and up-wind areas.
Table 2: Examples of priority landscape areas for gamba grass

<table>
<thead>
<tr>
<th>Landscape area</th>
<th>Identified examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>River corridors</td>
<td>Katherine River, Victoria River, Roper River, Finniss River and coastal flood plains</td>
</tr>
<tr>
<td>All sites of significance for biodiversity conservation in the NT</td>
<td>Kakadu National Park, Cobourg National Park, Nitmiluk National Park, Legune coastal floodplain, Limmen Bight and associated coastal flood plains, Arnhem Plateau, Islands</td>
</tr>
<tr>
<td>Sturt Plateau</td>
<td>Rangelands</td>
</tr>
<tr>
<td>Remote communities</td>
<td>Wadeye, Arnhem lowlands</td>
</tr>
<tr>
<td>Rural areas</td>
<td>Darwin River, Coomalie, Palmerston, Humpty Doo and Edith Farms</td>
</tr>
<tr>
<td>Pastoral properties</td>
<td>Tipperary and Twin Hills</td>
</tr>
</tbody>
</table>

Priority pathways of spread presented in Table 3, were determined using one or more of the following criteria:

- The physical characteristics of weeds to be transported
- Human activities most likely to spread weeds
- A physical corridor for weed spread.

Table 3: Examples of priority pathways of spread for gamba grass

<table>
<thead>
<tr>
<th>Pathway of Spread</th>
<th>Example mechanisms of spread along priority pathways</th>
</tr>
</thead>
<tbody>
<tr>
<td>River corridors</td>
<td>Livestock, feral and native animal movements, wind, water, recreational activities</td>
</tr>
<tr>
<td>Mining &amp; exploration areas</td>
<td>Construction and maintenance of mines and access roads, including land clearing, slashing and grading</td>
</tr>
<tr>
<td>Gas pipeline</td>
<td>Construction and maintenance activities</td>
</tr>
<tr>
<td>Rail corridors</td>
<td>Construction and maintenance activities</td>
</tr>
<tr>
<td>Pastoral holdings</td>
<td>Point of delivery for livestock and hay</td>
</tr>
<tr>
<td>Road network</td>
<td>Construction and maintenance, such as slashing and grading; 4WD tourism; wind</td>
</tr>
<tr>
<td>Outstations</td>
<td>Movement of vehicles and equipment</td>
</tr>
<tr>
<td>Telstra network</td>
<td>Construction and maintenance activities</td>
</tr>
<tr>
<td>Barge landings</td>
<td>Shipping cargo to remote locations</td>
</tr>
<tr>
<td>People</td>
<td>Vehicles, quads, hikers, bikes, trespassers</td>
</tr>
</tbody>
</table>

Regional priorities may change over the life of this plan as regional plans are reviewed and updated.
Catchment weed management plans

A catchment weed management plan can identify values and threats, where to invest resources, prioritise management actions, direct annual weed management actions and provide a framework for resourcing, responsibilities and monitoring programs. This holistic planning approach means risks to assets are understood and better managed.

Catchment weed management plans incorporate integrated control methods (at a finer scale than regional plans) across landscape or catchment-scale areas to ensure best management outcomes are achieved with the resources available. They can also consider fire risk depending on zoning and incorporate fire mitigation plans including fuel reduction and fire breaks developed by Bushfires NT, Sites of Conservation Significance, threatened species, and assets including stock etc. Bushfires NT can provide further information on fuel reduction and firebreaks: p 08 8922 0844.

Stakeholder and community participation play a major part in the development and implementation of catchment weed management plans. This can be achieved through community working groups or catchment action programs. A collaborative and proactive approach that allocates responsibilities and identifies resources and measurable reductions in weed infestations in certain timeframes will create greater ownership of weed management, in turn accomplishing better on-ground outcomes.

Property weed management plans

It is recommended that all landholders who have declared or problematic weeds on their land develop a property weed management plan (a required action for properties in the Class B zone that are > 200 hectares), which includes a detailed assessment of all weed infestations on the property. This assessment will enable consideration of each weed’s current distribution, potential for spread (along watercourses, access tracks/roads, animal movement etc.) and potential impacts on land use and other values such as biodiversity.

Successful weed management may require significant investment over an extended period of time. In particular, the control of large, established infestations will require careful planning, prioritisation and budgeting.

A property weed management plan should detail exactly what needs to occur in order to meet or exceed all requirements of this plan, and any other weed management requirements which may be applicable to a certain property.

What you should do:

- Survey and map ‘clean’ areas, isolated gamba grass plants and infestations on your property.
- Ensure ‘clean’ areas are kept clean.
- Consider areas where risk of spread or impact is highest (e.g. along roads, adjacent to infrastructure).
- Consider your legal requirements and obligations for management.
- Determine your goals and control methods.
- Develop realistic timeframes.
- Take into account the correct timing of control methods such as slashing, burning and grazing.
- Schedule survey, control and follow-up, and document the results.
Depending on circumstances, an effective property weed management plan may also:

- Implement early detection programs
- Implement and maintain gamba grass free buffer zones

Prioritising control work will help get the most from resources. Prioritise control of:

- Outlying and isolated gamba grass plants and infestations
- Gamba grass plants likely to contaminate vehicles and equipment such as slashers, graders and baling machinery (with seed)
- Gamba grass infestations likely to spread into neighbouring properties or clean areas.

Monitoring helps determine if what you are doing is working, or if you can do things better. It is essential to monitor control work, as management of gamba grass requires ongoing commitment.

Typically, gamba grass seeds remain viable for up to three years therefore follow-up control to destroy any re-emergent gamba grass plants is required for at least three years after the initial treatment. This period takes into account any seeds remaining in the soil which may be viable for up to three years.

Best practice for monitoring control efforts is as follows:

- Document control methods and success of control
- Analyse success or failure of control works
- Review and amend control as required to reach optimal results
- Inspect and retreat controlled areas no less than four weeks after spraying but prior to seeding
- Regularly check areas that are disturbed, are clean or downstream or downwind of current infestations to ensure no new outbreaks are occurring
- Establish photopoints to help compare growth and management success from year to year.

Refer to the Northern Territory Government’s [Planning for better weed management](#) document for further information on developing a property plan.
Section 4 – Management

Best practice management methods should be utilised by land owners and occupiers to minimise the impacts of gamba grass and are to be used to achieve compliance with the requirements of Section 2 of this plan.

Data collection and survey

Surveying for weeds and collecting and analysing weed data can greatly improve success in weed management, particularly on large blocks or at a landscape or catchment scale. Knowing the location and the extent of gamba grass on your property or in the surrounding area will inform prioritisation of control work and most efficient use of resources. Pathways of spread, including road and infrastructure corridors, are particularly important to survey.

Refer to the Northern Territory Government’s Weed Data Collection Manual and Field Guide documents for further information on data collection, or contact the Weed Management Branch for advice on 8999 4567.

Integrated weed management

Integrated weed management is the control of weeds through a long-term management approach, using several techniques such as:

- chemical control
- intensive grazing
- buffer zones
- burning
- slashing
- species replacement
- land rehabilitation
- soil conservation and ground cover management.

Integrated weed management programs require long-term planning, knowledge of a weed’s biology and ecology and appropriate weed control methods. An integrated natural resource management approach uses a range of methods to manage country effectively.

Using multiple techniques to control weeds increases the chance of better management outcomes. For example, an integrated weed management program for a large infestation of gamba grass may involve:

- intensively grazing the area
- burning at the appropriate time (depending on the terrain and access, burning could be substituted with bulldozing or slashing to reduce the bulk of the plants)
- sowing an improved pasture to compete with the gamba grass seed bank
- excluding stock until pasture establishes
- following-up with herbicide spot spraying on regrowth
- repeating this regime over three years
Land degradation and soil erosion can also occur if large infestations are continually treated with herbicide or by physical control or fire without a plan for revegetation, rehabilitation or a species replacement program.

A long-term weed management plan that considers an integrated weed management approach, using all available techniques or tools to control weeds and manage country, can be developed for a particular area. Any integrated weed management plan or strategy should focus on the most economical and effective control of the weeds and include ecological considerations as well as hygiene and spread prevention measures.

The long-term approach to integrated weed management should reduce the extent of weeds and reduce the weed seed stock in the soil. It should consider how to achieve this goal without degrading the desirable qualities of the land, such as its native ecology or agricultural crops.

Outlier plants and infestations – what do they look like?

Outlier gamba grass plants, as can be seen here, must be destroyed as a priority.

Outlier gamba grass infestations, as can be seen here spreading into adjacent bushland from core infestations, must be destroyed as a priority to prevent further spread into clean areas.

Figure 2: Outlier gamba grass plants and infestations
Timing of control

The growth and reproductive cycles of a weed species must be taken into account when controlling gamba grass. Implementing control measures at the wrong time of year can significantly reduce both the short and long-term success of management actions and waste resources. Table 4 provides an overview of gamba grass growth and reproduction and identifies corresponding optimal treatment times for different control options. It should be noted that peak growth, flowering and seeding times can vary due to seasonal variations, the type of environment and as a result of slashing and burning.

**Table 4: Guide to timing of gamba grass control**

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<tr>
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<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
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<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
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<tbody>
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<td>Flowering</td>
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<td>Seed fall</td>
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<td>Germination</td>
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</table>

*Approximate times for reproductive events

*Months most suitable for control option

*Control option less suitable

*Control option not suitable

Spread prevention

Weed spread prevention is the most cost-effective way to manage weeds. Gamba grass seed can be spread via wind, water, livestock and other animals (e.g. feral pigs) and machinery and vehicles contaminated with seed. It can also be spread by seed contaminated fill, gravel or hay. To prevent spread within or from an area:

- Prioritise eradication of isolated plants/infestations along tracks and roads.
- If using machinery, work towards major infestations, not away from.
- Spray infestations from edges inwards.
- Implement and maintain gamba grass free buffer zones.
- Minimise seed production through slashing or grazing.
- Don’t drive through seeding gamba grass.
- Wash down and clean contaminated vehicles and machinery.
- Do not accept/buy gamba grass contaminated products such as hay, fill and sand.
- Do not sell or transport products contaminated with gamba grass or its seed.
- Ensure recreational activities such as quad biking, fishing and hunting do not spread weeds.

Refer to the Northern Territory Government’s *Preventing Weed Spread Is Everybody’s Business* document for more industry specific weed spread prevention protocols.
Eradication and control - tools and techniques

Chemical control

When applied correctly, chemical control is by far the most effective and efficient control method for gamba grass. Products containing glyphosate produce the best outcomes. Glyphosate is a ‘non-selective’ herbicide, as are many residual herbicides, so contact or drift onto desirable plants should be prevented. When undertaking chemical control:

- Do not spray if rain is expected within four hours.
- Do not spray desirable or native species of grass.
- If required, slash, graze or burn ‘rank’ plant material from last year’s growing season (if possible) to improve access for spraying and reduce the amount of chemical required.
- Do not use dirty water. Glyphosate binds to the sediment and does not work effectively.
- Spray gamba grass when leaves are green and are actively growing and plants are at least 50 cm high.
- Spray twice during the growing season and prior to seeding as a minimum – typically once before January and again prior to April.
- Apply herbicide to the entire plant.
- If using bore water, you may require a wetting agent.
- Re-inspect sprayed areas and conduct follow-up spraying to deplete the seed bank – essential as the introduction or production of any new seeds will enable the infestation to persist.

Soil cultivation

Destroying weeds through soil cultivation is particularly effective for young weeds. Tools and equipment that can be used to dig up and destroy weeds range from large tractors, discs and ploughs to hand tools such as mattocks and chip hoes. Manual cultivation is a viable means of weed control in small-scale situations or as a follow-up control measure. Shoots can be separated from roots or buried deeply to prevent regrowth, and roots can be dragged to the surface to dry out. Some types of weeds can be controlled with repeated passes; however, eradication of perennial weeds (and gamba grass is) can be difficult and depends on their root systems. Cultivation is more effective if weeds are cultivated before they flower and under reasonably dry conditions.

Slashing and hand-pulling

Physical control includes hand pulling or slashing/mowing. Slashing can be mechanical using a tractor and slasher or a hand-held brush-cutter. Slashing is cheaper than soil cultivation and preserves ground cover, reducing soil erosion and allowing access in wet weather. It reduces biomass for easier spraying and fire fuel reduction. Continual slashing may provide control if a desirable pasture species is present and encouraged to replace the weed (species replacement), but slashing will not eradicate a weed. Slashing alone is not an effective control for gamba grass.

- For individual plants or small infestations - remove individual plants by hand or by using a mattock. The entire root ball must be removed for this method to be effective. Ensure no plants reshoot.
- Slash prior to seeding and follow up with other control such as spraying or soil cultivation.
Grazing

Gamba grass can be a useful pasture species, but strategic grazing management is required to ensure that it is managed properly to prevent its growth and spread (as required under the Act) while also maximising the potential benefits to cattle production. Intensive management is required to ensure that grazing quality is optimised (vegetative leaf production associated with better digestibility and palatability) and also that the ecology of the plant is influenced to minimise seed production. Grazing pressure, especially in March – June, can reduce the amount of seed produced, as well as preventing gamba grass becoming tall and rank; which has obvious benefits for both pasture productivity and a reduced wildfire risk.

Heavier grazing pressure is required in the growing season (Wet season) compared to the Dry season, so stock numbers will need to be adjusted accordingly. Rotational, ‘crash’ or cell grazing strategies can be used to manipulate vegetative leaf production during the growing season to ensure that grazing is an effective tool to manage gamba grass to minimise seeding. Non-grazed gamba grass can produce more than 20 t/ha by the end of the Wet season, when it progresses into its reproductive phase and produces seed and high amounts of stalk, at which stage it becomes less attractive to grazing animals. Set stocking rates can have limited benefits if gamba grass is allowed to set seed and go ‘rank’ over the Dry season for both cattle productivity, and utilising stock grazing as a weed management tool. Cattle may potentially be encouraged to graze rank gamba grass areas in the Dry season, by strategic use of supplements (which can increase pasture utilisation), or through the use of fire to ‘green up’ country which can then be grazed towards the end of Dry season when feed may be getting scarce.

Optimal stock numbers between the Wet season and the Dry season will depend on other factors including gamba grass density and other pasture species available for grazing within the paddock, duration of grazing period, desirable cattle production (e.g. steer weight gain versus cow maintenance), and of course, season and local knowledge. Proportion of the property affected by gamba grass should also influence overall property management and timing of grazing between paddocks with or without gamba grass. A whole-of-property management plan should outline paddocks where strategic grazing is required as a tool for gamba grass control and cattle production, in context of overall property management.

When using grazing as a control (Class B zone only unless under permit conditions):

- Maintain gamba grass height to less than 1 m.
- Use higher stocking rates during the Wet season.
- Manage infrastructure to enable intensive or rotational grazing.

Buffer zones

A buffer zone is a designated area free of gamba grass which isolates all other gamba grass on a property from clean areas or adjoining properties. Buffer maintenance will reduce the amount of seed blowing or washing into gamba grass free areas or across property boundaries.

Maintaining a gamba grass free buffer does not constitute clearing of native vegetation, providing the works are undertaken in accordance with relevant clearing controls.

Refer to Appendix B for information on clearing controls and clearing permit requirements.

The consistent use of herbicide in these buffer zones may result in loss of protective groundcover and could potentially cause erosion if not applied appropriately. Consider an integrated management approach in areas of dense infestation including rehabilitation of the area, a species replacement program or implementing erosion control measures.
Click on the link for more information about soil conservation and erosion and sediment control.

Careful consideration and planning is required for implementation of buffer zones, particularly on large parcels and in areas of native vegetation. A property weed management plan will assist in determining the best areas to implement buffer zones and if they are practical for your situation. Refer to Section 3 of this document for your specified buffer zone implementation requirements.

**Fire/burning**

Burning can be a part of an integrated approach to weed management, but is not an effective method used on its own. It is necessary to follow up any burning of gamba grass with targeted chemical control. Burning gamba grass will lead to increases in gamba grass density if used without chemical follow-up control.

Burning is typically used early in the Dry season (April-June) to reduce rank growth and fuel loads, decreasing the risk of potentially dangerous fires later in the Dry season. Controlled burns during the Wet season (during dry spells) can also reduce rank growth and allow tussocks to regenerate for easy application of herbicide. When undertaking a Wet season burn, ensure there are access tracks to control the burn, especially if infrastructure is nearby. For a Wet season burn to be successful, it may be necessary to hold some fuel over from the previous year. Any burning must be in accordance with the Bushfires Management Act and Fire and Emergency Act. Bushfires NT has Planned Burn Risk Assessment Sheets which must be completed prior to undertaking any burning.

Bushfires NT works with landowners and the wider community to manage bushfire in the Northern Territory by providing support for mitigation, management and suppression activities, and by coordinating landowner and volunteer participation in response to significant fires.

Urban fire management is overseen by the Northern Territory Fire and Rescue Service (NTFRS).

If using burning as an integrated control tool:
- Only use burning with other management actions (e.g. chemical control).
- Obtain a ‘Permit to Burn’ prior to any fire control by contacting the Northern Territory Fire and Rescue Service, Bushfires NT or your local Volunteer Fire Brigade Captain.

Refer to the Northern Territory Government’s Gamba Grass Management Guide for further information on control methods and timing of control.

**Species replacement**

A species replacement program can reduce large gamba grass monocultures. Species replacement typically requires a staged approach where gamba grass infestations are gradually replaced over time with native or more suitable pasture species. This is best implemented by cultivating (on contour) an area and sowing the desired species. Cell or rotational grazing on a large property can help with the implementation of this management practice. Implementing a species replacement program also reduces the likelihood of erosion and infestation by other opportunistic weeds. This is not a ‘quick fix’ management method and requires good planning and follow-up spot spraying of gamba grass plants until the new species is fully established.

For information on possible replacement species, please contact the Northern Territory Government’s Primary Industry and Resources Department on: 08 8999 2006.

For more information on how to stage removal of large gamba grass infestations without creating other land management issues, contact the Northern Territory Government’s Land Management Unit (within the Department of Environment and Natural Resources) on: 08 8999 4572.
Good land management is an important part of managing gamba grass. This is particularly so where mechanical control methods are used or herbicide is used repeatedly in a single area, reducing the vegetation cover to bare ground in some instances. Prevention of soil erosion should be considered in these instances to reduce the risk of losing valuable topsoil. Whenever soil is exposed, it is at risk of erosion – from wind, rain or further disturbance (e.g. stock or vehicle access).

Groundcover is an effective, comparatively cheap and easy way to manage erosion risk and can eliminate the need for other erosion or sediment controls. Groundcover acts to protect the soil from disturbance by reducing erosive forces, binding the soil and increasing infiltration. Establishment of new vegetative groundcover can be subject to seasonal constraints.

Rehabilitation may be required in some areas. Rehabilitation is the restoration of degraded or disturbed areas to a pre-determined standard. It is required wherever there has been a change in the landscape which is causing active erosion and soil loss. Vegetation is the best defence to protect against soil erosion. However, the factors that caused the problem must be treated first. A combination of erosion control works and revegetation will have the most chance of success in preventing further erosion.

Clearing controls (Appendix B) apply to all gamba grass management areas.

While gamba grass is a vigorous competitor and will invade native vegetation eventually if a seed source is present, re-establishment of the native or other understorey plants will slow down re-invasion.

Refer to the Northern Territory Government’s technical notes for further information on groundcover management, land rehabilitation, soil erosion management and rehabilitating degraded sites.
Section 5 – Monitoring and evaluation

Full compliance with a statutory weed management plan can require a great deal of effort, commitment and investment from land managers, particularly from those who are already affected by declared weeds. For this reason it is essential that the Northern Territory Government monitors whether the stipulated management actions are contributing towards the identified goals at a Territory level.

The Weed Management Branch will monitor the results of the plan to determine whether the plan is achieving its objectives, remains relevant, responds to changing conditions and is supported by the community.

Continuous improvement can only be achieved if the following can be determined:

- investments in weed management are resulting in progress towards the plan’s identified goals and objectives.
- the recommended management actions are achieving the most effective and efficient control outcomes.

Adaptive management involves using the feedback from monitoring and evaluation to inform and revise plans and policy. This weed management plan has been drafted using the best information available at the time of writing. However, should new information become available which should be included in, or influence the structure and content of this plan, the plan may be revised.

Performance indicators

A performance indicator is something which can be used to assess performance. The following indicators will provide a way to measure the performance of this plan against its objectives.

Table 5: Performance indicators

<table>
<thead>
<tr>
<th>Performance indicator</th>
<th>What will be measured?</th>
<th>How will it be measured?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective enforcement</td>
<td>Effective enforcement by Weed Management Branch.</td>
<td>Proportion of Orders complied with.</td>
</tr>
<tr>
<td></td>
<td>Public acknowledge their roles and responsibilities with respect to gamba grass management.</td>
<td>Number of website downloads from selected nt.gov.au links delivering gamba grass information e.g. management guide, weed ID sheet, statutory weed management plan.</td>
</tr>
<tr>
<td>Better information and awareness</td>
<td>Weed spraying contractor capacity.</td>
<td>Number of active licences issued to businesses as at 1 October annually.</td>
</tr>
<tr>
<td>Active management</td>
<td>Change in (gamba grass) distribution and cover.</td>
<td>Aerial data. Selected monitoring sites.</td>
</tr>
<tr>
<td></td>
<td>Survey results.</td>
<td>Roadside assessment data.</td>
</tr>
<tr>
<td></td>
<td>Eradication in the Class A zone (outside of permit areas).</td>
<td>Selected monitoring sites.</td>
</tr>
<tr>
<td>Area affected by gamba grass</td>
<td>Spread reduction.</td>
<td>Density of gamba grass on selected monitoring grids in 2022 and 2027.</td>
</tr>
<tr>
<td>Northern Territory Government managed land</td>
<td>Planning capacity.</td>
<td>Number of NTG and statutory authorities with active weed management plans in place.</td>
</tr>
</tbody>
</table>
Appendices

Appendix A – Class B zone area extent – description

Inside that area starting at the Daly River mouth, being the south-west corner of NTP 3219 then along a line following the coast in a generally north and east direction, specifically excluding all islands separated from the mainland, to the Wildman River mouth at the western boundary of Kakadu National Park, then south along the western boundary of Kakadu National Park to the north-east corner of NTP 2384 (Mt Bundy Training Area), then following the northern and western boundary of NTP 2384 until rejoining the western boundary of Kakadu National Park at the southern boundary of NTP 2384, then generally southeast along the western boundary of Kakadu National Park to northern boundary of Nitmiluk National Park NTP 4424, then west along the northern boundary of Nitmiluk National Park, then generally south along the western boundary of Nitmiluk National Park (NTP4424, NTP4372, NTP 3629), to the Katherine River at the south-east corner of NTP 4750, then generally west southwest along the centreline of the Katherine River, then north along the centreline of Daly River to the northern boundary of NTP 4059, then west along the northern boundary of NTP 4059, then west from the north west corner of NTP 4059 to the south-east corner of NTP1666, then generally west along the southern boundary of NTP 1666, then north along the western boundary of NTP 1666 then generally north-west along the southern boundary of NTP2681 to the Daly River mouth, closing at the south-west corner of NTP 3219, which is shown on the shaded map.
Appendix B – Clearing controls and information

What is native vegetation?

Native vegetation is defined as terrestrial and intertidal flora indigenous to the Northern Territory, including grasses, shrubs and mangroves. Native vegetation does not include introduced or exotic grass or pasture species, or declared weeds subject to the Weeds Management Act.

What constitutes clearing of native vegetation?

Clearing of native vegetation is defined by the Northern Territory Planning Scheme and means the removal or destruction by any means of native vegetation, other than: lopping a single tree; grazing livestock; constructing a road; burning by fire; mowing lawn; the removal or destruction of a declared weed within the meaning of the Weeds Management Act; or clearing in accordance with a permit.

Will I need a clearing permit to establish gamba grass free buffer zones?

The physical or chemical removal of gamba grass will not require a clearing permit so long as native vegetation is not disturbed or removed during the process. If native vegetation will be removed, then a permit will be required if the scope of works is outside of the relevant permitted controls.

On pastoral leases, clearing of native vegetation is subject to the Pastoral Land Act, which does not require a clearing permit to be issued for clearing associated with fixed improvements (e.g. roads, tracks, fencelines, laneways, firebreaks, etc.).

On freehold land, clearing of native vegetation is subject to the Planning Act and must be in accordance with Sections 10.2 and 10.3 of the Northern Territory Planning Scheme and the Northern Territory Land Clearing Guidelines. This means that a development permit will be required for clearing any native vegetation unless the clearing is for the purpose of:

- A property boundary firebreak up to 5 m wide on a lot up to 8 ha in size; or
- A property boundary firebreak up to 10 m wide on a lot greater than 8 ha in size; or
- An internal fenceline up to 10 m wide on a lot greater than 8 ha in size; or
- A firebreak otherwise specified by a Regional Fire Control Committee.

Where can I get more information about clearing controls?

Further information regarding clearing controls is located on the following websites.

- NTG general information: Land clearing guidelines and management plans
- NT Planning Scheme
- NT Land Clearing Guidelines
- NT Pastoral Land Clearing Guidelines
# Appendix C – Support and information for land managers

The Northern Territory Government can provide training, advice and extension materials to support improved gamba grass management. The following documents are available by contacting the Weed Management Branch on 8999 4567 or accessing the internet site [www.nt.gov.au/weeds](http://www.nt.gov.au/weeds).

<table>
<thead>
<tr>
<th>Document</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamba grass Identification Table</td>
<td>Contains photos and written descriptions to assist with identification.</td>
</tr>
<tr>
<td>Gamba grass Management Guide</td>
<td>Provides information on gamba grass identification, impacts and habitat, and provides best management practice advice and control techniques.</td>
</tr>
<tr>
<td>Northern Territory Weed Management Handbook</td>
<td>Provides information on approaches to weed management, including integrated weed control methods. Specific information is provided on herbicides registered for use in the Northern Territory. The ‘Weed control option tables’ include a colour photo of the weed in question, list which herbicides are registered for use, indicate optimum treatment times and which method/s can be employed for maximum effectiveness.</td>
</tr>
<tr>
<td>Preventing Weed Spread Is Everybody’s Business</td>
<td>Provides information on roles and responsibilities regarding weed spread prevention in the NT.</td>
</tr>
<tr>
<td><strong>Weed Data Collection Manual</strong></td>
<td>Provides information on when, what and how to collect weed mapping data in the NT.</td>
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<td>-------------------------------</td>
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<tr>
<td><strong>Field Guide for mapping weeds in the Northern Territory</strong></td>
<td>This is a step-by-step guide to collecting weed mapping data using a GPS, how to submit data and how to use this data for weed management on your property.</td>
</tr>
<tr>
<td><strong>Weed ID Deck</strong></td>
<td>Weed identification flip-book. Contains photos and written descriptions to assist with identification. Great for the glovebox.</td>
</tr>
<tr>
<td><strong>Planning for better weed management</strong></td>
<td>This is a guide to help you plan your weed management on your property and identify areas of priority management.</td>
</tr>
</tbody>
</table>
Appendix D – References

Australian Department of Environment and Energy website.


Appendix E - Submissions and consultations contacts

NT Weed Management Branch

Phone: 8999 4567

Email: weedinfo@nt.gov.au

Address: PO Box 496 Palmerston NT 0831

Web: nt.gov.au/weeds