

Shire of Broome

Weed Management Strategy and Action Plan

Shire of Broome Weed Management Strategy and Action Plan



1. Introduction

1.1 Acknowledgment of Country

The Shire of Broome acknowledges the Yawuru people as the native title holders of the lands and waters in and around Rubibi (the town of Broome) together with all native title holders throughout the Shire.

We pay respect to the Elders, past, present and emerging, of the Yawuru people and extend that respect to all Aboriginal Australians living within the Shire of Broome.

1.2 The problem with weeds

Weeds have been described as plants out of place, but when we are talking about weed management, it's more about the threats caused by weeds and their impacts on the things we value such as biodiversity and amenity. Weeds outcompete native species because they have no natural enemies (herbivores, pests and diseases) to keep them in check. They can respond quickly to disturbance events and use the opportunity to take over. The problem with this is that they provide little habitat and food for native animals, dominate the landscape, reducing biodiversity and degrading the value of cultural sites and altering fire regimes and other ecological processes.

1.2.1 Weeds without borders

Weeds don't recognise fences or change of ownership and they don't stay where we put them. They are successful opportunists. They invade and spread wherever they can and cause problems across all tenures. A collaborative approach to weed management is necessary to effectively manage weeds in the Shire of Broome.

The Shire of Broome recognises and respects the valuable partnerships it has in the community. The Shire works closely with the Department of Biodiversity, Conservation and Attractions, Environs Kimberley, Yawuru and community volunteers.

1.3 Weed management context

Local government, Commonwealth and State government agencies, as well as many other organisations are involved in the management of weeds. Locally this includes a range of volunteer groups, Traditional Owners, State Government agencies and environmental non-government organisations (eNGO's).

The Biosecurity and Agriculture Management Act, 2007 (BAM Act) provides the mechanism for government to declare a weed or restrict its movement. The Act also gives provision to safely manage the use of agricultural chemicals. If a declared pest is found on land owned or managed by the Shire of Broome, the Shire must adhere to requirements under the BAM Act and its subsidiary legislation. The action required is dependent on the status or category of the declared pest plant. Definitions are included in Appendix C.

The Weeds of National Significance (WoNS) list is a joint initiative of the Commonwealth, State and Territory Governments to coordinate national effort against 32 of Australia's worst invasive plants. These weeds cause negative impacts to Australia's natural and productive landscapes.

There are Commonwealth and State weed management strategies and this document fits under and takes some guidance from each of these documents.

2. Vision, Aim and Goals

2.1 Vision

To protect the environmental, cultural, social and economic assets of Broome from the impacts of invasive weeds.

2.2 Aim

The aim of this document is to provide a strategic framework for managing weeds within the Shire of Broome and prioritise strategic management actions.

2.3 Goals

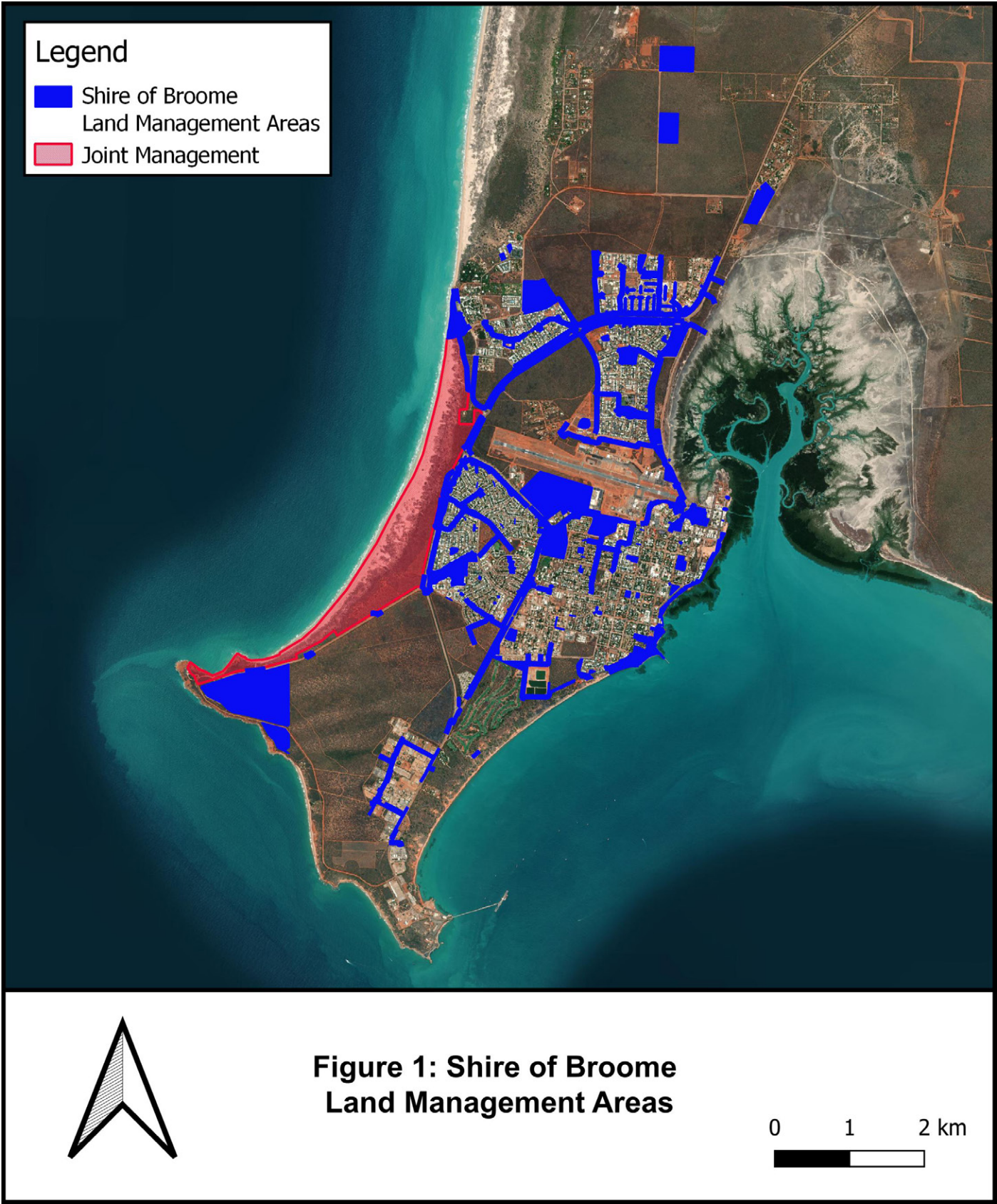
- ◆ **Prevent:** Prevent new weed problems from establishing.
- ◆ **Understand:** Understand the occurrence and extent of priority weed species and their context in the Broome townsite.
- ◆ **Limit Impacts:** Limit the impact of priority weed species on biodiversity and amenity values.

3. Scope

The focus for active control of weeds in this strategy is within the Broome townsite. However, a broader community engagement and education approach is recommended for the whole Shire. Additionally, where possible, priority weed control actions may be undertaken in areas of 4 mile and 12 mile as these areas are seen as potentially the first line of defence, particularly for new weed species coming into the township.

Figure 1 on the next page is an indicative map showing land within the Broome townsite which is under the management of the Shire of Broome. These areas are therefore the sites in which direct weed control action can be undertaken by the Shire.

The Shire of Broome acknowledges the enormous efforts made by members of the community to control weeds within bushland reserves and drains within the Shire, which it values greatly. This document provides strategies and priority actions to improve support for and collaboration with the community on this serious threat to our natural environment.



4. Vectors and Sources

4.1 Drains

Broome’s extensive drainage system helps manage flooding from seasonal rainfall, but also creates ideal conditions for weeds. As disturbed sites, drains support weed growth and act as both sources and vectors, spreading seeds downstream during overflows. Several priority weed species in Broome have floating seeds, making them particularly suited to dispersal through the drainage network.

4.2 Highways

Highways and other major transport routes also act as vectors for weeds, with paths cut through the natural vegetation creating a path of disturbance which weeds to take advantage of. Vehicles, equipment and animals carry weed seeds and other propagules along these arteries, exacerbating the spread of weeds.



▲ Broome Hwy - Neem, Coffee Bush and other weeds

4.3 Hitchhikers

Weeds are great at hitchhiking. Some have spiky fruit that stick to tyres, shoes or animals, while others rely on fruit-eating animals like birds and bats to spread seeds. In Broome, fruit bats help spread Neem Tree seeds this way.

4.4 Source populations and parent trees

Identifying where weeds are coming from is vital to effective long term management and arresting the spread of invasive species.

Source populations may exist at the top of a catchment, in local gardens or on unmanaged land. Identifying these sources and controlling weeds here, or working collaboratively with other land holders and land managers on these sites, can stop further spread or reinfestation of sites in adjacent areas.

Parent trees are those large, well-established trees of weed species which may have even been planted initially. These are potentially the source of surrounding infestations and therefore removing these trees will remove this source of new weeds in the long term. For example, Neem Trees were planted extensively in Northern Australia for their medicinal properties and as fast growing, hardy shade trees. There are two very large and well-established Neem Trees within Chinatown (corner of Short Street and Carnarvon Street) which are likely to be acting as parent trees.

4.5 Unmanaged land

Areas of unmanaged land within Broome townsite, such as vacant blocks, over-cleared or underdeveloped land, unallocated Crown Land and unmanaged road reserves are harbouring weeds which then disperse into the surrounding environment.

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5. Approach

There is a significant weed load within the Shire of Broome, particularly around the Broome townsite. In many cases it is unlikely that we will be able to eradicate weed species from the area and we need to prioritise efforts in order to protect high priority assets and to be able to contain and reduce the rate of spread of some weed species.

The Shire of Broome is seeking to change the approach to weed management from reactive to proactive. This Strategy and Action Plan highlights key priorities for protection and management as well as providing a prioritised list of target weed species.

An integrated approach to weed management in Broome is needed. This means using different techniques at different stages of the weed's life cycle or in different circumstances. By combining control methods such as physical, chemical, cultural (if and where appropriate) and biological (where available) it helps to ensure that weeds don't build up a tolerance to one control method. The weed load in Broome is such that physical removal is no longer possible in all areas, however, if an integrated approach is used, a program of chemical control may first be applied which may make the infestation more manageable and then follow up control may be able to be done by hand, for example with isolated seedlings being pulled out by volunteers or ranger groups. In other cases, a community weeding effort may cut out many mature Neem or Coffee Bush plants which could then be followed up by spot spraying seedlings as they recruit. This approach also helps to reduce chemical use.

6. Strategies for Effective Control

6.1 Prioritisation

It is not possible to control all weed species everywhere. Prioritising the areas that need to be protected, the weed species that should be targeted and the most impactful actions we can take to reduce the spread of invasive species are all important strategies to achieve effective weed control.

Work to protect areas of native vegetation in the best condition first. We need to protect our best biodiversity assets. Native plant species can quickly be lost by being outcompeted, shaded out or smothered by weeds. This results in the loss of habitat and food for our native animals. In the short term, it is often easier and cheaper to control weeds where natives have already been lost, but these areas are more likely to be reinfested by weeds. It is also much more expensive to revegetate and restore native ecosystems than to protect them.

6.2 Source Control

Working from the top of the catchment down is best practice for weed control. Sources of weeds including parent plants and infestations at the top of local catchments should be identified. Where possible weed control work should start here and work downward to help prevent reinfestation. This strategy however, should not be used in isolation while significant weed populations threaten biodiversity values downstream. This is because it takes significant resources to control weed infestations and we need to make sure that the things we value are not being lost while we are busy working away at the top of the catchment.



▲ Coffee bush seeding into a recently sprayed drain

Taking this approach on a site-specific scale is also useful. This means working from the upstream, or uphill areas of your site and working down, as that is the way many weed species spread (water and gravity). This approach prevents reinfestation at a local scale. For example, working on a section of drain and controlling only the weeds at the bottom of the drain will likely mean the bottom of the drain is regularly reinfested from surrounding areas.

It is more effective to control weeds one section at a time, from boundary to boundary, starting upstream and working your way down.

Weed mapping and investigation of potential parent plants or source populations should be undertaken to be able to confidently prioritise actions for maximum benefit. There is significant local knowledge and expertise available in the community to inform this process.

6.3 Practice Improvement

Some opportunities for improving practices have been identified:

◆ Hygiene

Vehicles, machinery and equipment moving through weed-infested areas can carry soil, seeds and plant material, spreading weeds and pests between sites. This is a major way weeds spread across Broome.

Basic hygiene practices can drastically reduce this risk and it is a cost-effective approach. It may take a little more time initially, but it saves time and money in the long run by avoiding the creation of new weed infestations.

A designated washdown bay at the operations centre could support more thorough cleaning. If a sump or drainage pit is included, it must be maintained regularly and waste disposed of in landfill. Weeds around the washdown area should also be monitored and controlled.

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◆ Mulch making

There have been some community concerns about weed seed or other propagules remaining viable in mulch created from green waste at the Broome Waste Management Facility. Further research into improving the mulch making practice in Broome has the potential to greatly reduce the spread of weeds within the Broome townsite and encourage greater use of mulch in weed suppression. Ensuring mulch is turned and composted at >55 oC will help in eliminating pathogens.

◆ Timing

With a lot of area to cover and weeds all seeding at once it can be very difficult to control weeds at optimal times. Understanding expected optimal times for control of each of the priority weed species is an essential starting point for effective control. This information is included in Table 5 below. These timings are subject to some level of local and seasonal variation and are linked primarily to rainfall events, temperatures and other environmental cues. Weed managers should use this table of optimal control timings as a guide only and be ready to act before or after these times, paying attention to the growth stage of the weed species.

Effective control of weeds is essentially about applying appropriate controls while weeds are actively growing but before they develop seed. For example, using chemical control while a weed is growing strongly will ensure good uptake of chemical, reducing the amount needing to be applied.

If using a mechanical control method, such as mowing, wiper snipping, slashing, or cutting out woody weeds, there is a very high risk of spreading seed around and making the problem a lot worse. That is why it is vital not to move any weeds while they are seeding. For example, mowing or slashing Buffel Grass while it is in seed can actively spread seeds, potentially making the problem far worse.

Workforce programming must account for appropriate timing of action for effective weed control.

◆ Drainage Infrastructure

The Pindan soils on which Broome townsite lies, though porous, are relatively slow to absorb water. The inherent risk to community safety and environmental health associated with standing water in a residential setting, means that the drainage systems in Broome are designed to carry water to various coastal outlet locations or the back of sand dunes, which have greater soil permeability.

Available engineering and bioengineering solutions to minimise the potential impacts of this approach on receiving sites such as Minyirr should be explored. For example, sub-surface delivery, gross pollutant traps, drop out pits, drainage sumps etc.

6.4 Influence other land managers

As a Local Government Authority, the Shire of Broome can exert some level of influence over land not under its direct management. Mechanisms available to seek better outcomes in terms of weed management and prevention include:

◆ Planning and Development

The Shire can recommend conditions to the Western Australian Planning Commission (WAPC) at the subdivision stage, supported by relevant policies. This allows the Shire of Broome to suggest weed control and landscaping requirements (DPLH pers. comm., 2025). Developing a local landscaping policy would be a cost-effective way to reduce ongoing weed management.

Local governments may also apply and bond these conditions at planning approval, including native vegetation protection, landscaping plans, and weed management programs. Clear completion criteria should be set to ensure compliance before clearance and bond release. Bonding encourages staged development, avoiding wholesale clearing that promotes weed growth.

Bonding weed control/landscaping or site maintenance can promote the use of staged development, rather than what is considered a cheaper option of wholesale clearing initially, with cleared land attracting and promoting weed growth and dispersal.

Standardised conditions and clear landscaping guidelines help manage developer expectations and simplify compliance, saving Shire officers time. Including native species lists will help prevent new weed problems.

Ensuring subdivision planning allows for adequate and appropriate drainage infrastructure is vital to avoiding future weed issues. Drains being highly modified systems present bare areas as an opportunity for weed growth.

Feedback from previous Shire of Broome weed strategies has indicated that some community members are willing, but unable to assist with weed management in drains due to their steeply sloped banks.

Ensuring compliance in design and construction of drainage infrastructure to adhere to the Shire's standards of battering banks to 1:6, with 3m wide bases to permit access, flat longitudinal grades and drop structures will help to ensure that drains are more accessible and velocities are kept low, minimising erosion, maximising absorption, and maximising nutrient stripping.

◆ Other government agencies

- Seek agreements with the various state government agencies to better control weeds on land they manage. Department of Communities, Development WA, Main Roads WA and the Water Corporation have been identified as land managers in Broome townsite with weeds not being adequately managed.

- Notify landholders of weeds on their land, particularly declared weeds.

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6.5 Collaborate

Actively seek opportunities to work with other land managers and the community. Focus efforts where others are also working to maximise impacts through collaboration.

Explore opportunities to attract additional funding to maximise the impact of the Shire's resources for weed control and the efforts of volunteers and other organisations. Wherever possible, support volunteer groups applications for funding by providing letters of support and permission, complimentary funding, or in-kind support.

6.6 Engage and Educate

The more that people are aware of the impacts of weeds and understand what to look for and how to control them, the more they are likely to help with the issue. The scale of the problem with weeds in Broome is such that it will not successfully be tackled alone.



▲ Before



▲ After

These before and after photos of the recent effort of SKIPA volunteers at Magabala Botanic Park in Broome North show that 5 people can make a huge difference in only 1.5 hrs.

The Shire of Broome needs a strong commitment to community engagement and weed education, which can be achieved by:

- ◆ Making simple, easy to understand information available.
- ◆ Ensuring a framework exists to support both community and Shire Staff to easily and safely facilitate volunteer involvement.
- ◆ Offering environmental induction or training for Shire employees to build basic knowledge of weed management priorities, including species control, timing, and protection areas.
- ◆ Ensuring resources are available to identify priority weed species and understand their impacts, with clear, well-understood hygiene protocols.



▲ Native vegetation in the Broome townsite

7. Priorities for Protection

7.1 Priority 1 - Minyirr Park

During the development of this strategy, Minyirr Park was identified as the top priority area for protection by Shire Officers, Department of Biodiversity, Conservation and Attractions (DBCA) representatives, and members of the community.

Minyirr Park is part of the Yawuru Minyirr Buru Conservation Park. It is jointly vested with Yawuru and the Shire of Broome and managed collaboratively between the Yawuru, DBCA and the Shire of Broome. These reserves are one important component of the Yawuru Conservation Estate which comprises intertidal, sub-tidal and adjacent terrestrial reserves in and around Broome and Roebuck Bay (DBCA, 2018).

Minyirr Park is an important natural asset which conserves the threatened monsoon vine thickets and dune systems along Walmanyjun Cable Beach. The Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula is listed as an endangered ecological community under both State and Commonwealth legislation (Biodiversity Conservation Act, 2016 and Environment Protection and Biodiversity Conservation Act, 1999). This vegetation community represents the southern-most occurrence of rainforest type vegetation in Western Australia (DCCEEW, 2013).

For the Yawuru people, it is a living cultural landscape which is highly valued for customary practice and management. It is a sacred bilyurr (spirit) place for Yawuru people. This place is known for its protection and healing qualities (EK & NBY, 2018). The site also plays an important role in tourism and is therefore very important economically for the Shire of Broome. It is also highly valued by residents for its recreational, aesthetic and biodiversity values.

Identifying this site as a priority for protection means concentrating weed control efforts not just within the park but in areas that directly impact it, such as the adjacent drainage channels which have been identified by Shire staff, DBCA and community volunteers as the most significant weed source for Minyirr Park.

7.2 Priority 2 - Native vegetation in good or better condition

Other areas of remnant vegetation in good or better condition should also be prioritised for protection. This may mean prioritising control of weeds in areas adjacent to other reserves or in drains feeding directly into intact areas.

Priority Scale



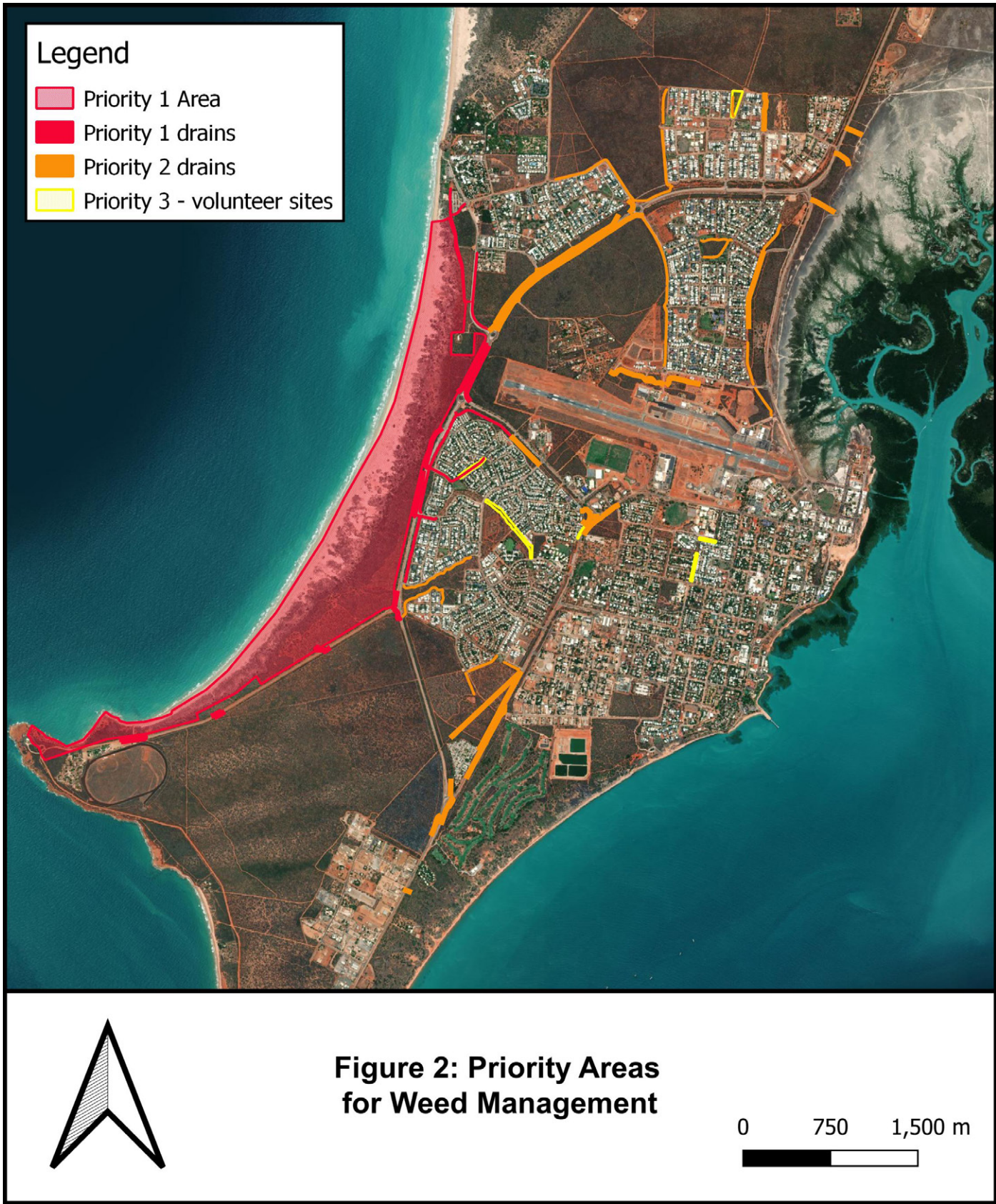
7.3 Priority 3 - Hold your ground

It is vital to retain areas of control over weeds. There is virtually no point controlling weeds once, as they will quickly take hold again. Established weed infestations will likely have a high level of weed seed in the soil or other propagules such as tubers (eg. Coral Creeper) from which they will rapidly recruit. All retreatments of weeds should aim to first revisit previously controlled areas and then work out from there. Weeds are also amazing colonisers, quickly filling in bare areas, so long term weed control efforts should aim to re-establish local native vegetation wherever possible.

7.4 Priority 4 - Areas of community effort

Another important priority is to actively provide support to community members and other local groups who are working to control priority (and other) weeds. The Shire is fortunate to have some hard working, dedicated and informed community volunteers making significant gains in the war against weeds. Providing support to these volunteers and other groups will help to sustain these efforts. This is sometimes described as “working where the energy is” and it is a cost-effective way of tackling environmental issues. Each individual site or group will need to be considered specifically in terms of planning to provide support in specific areas or for groups with different needs. This approach may help to extend the areas being controlled or maintained by community volunteers, attract new volunteers or extend the ‘life’ of a community group. An example of this approach may be for the Shire to dedicate some effort to the area immediately upstream of where the volunteers are working, or for the Shire’s Weed Control Officer to work collaboratively with volunteers on a busy bee or weeding day. This may help to extend the impact of the work, improve communication and understanding between parties and help all involved to feel they are not fighting this battle alone.

The areas community volunteers are working in needs to be mapped in the Shire’s GIS mapping or internal asset management system and registered in a central location to ensure effort can be directed for support and improved communication.



8. Priority Weed Species and Categories

Information and photos to help with identification of the priority weeds listed below are available in Appendix A for reference.

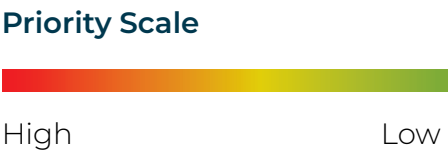
8.1 Priority 1 Species - Watch and Act

Weeds listed here as priority one weeds are those species which have the potential to become big problems but are only currently present at low density. Controlling these species, as and when they are recorded within the Shire of Broome, is a cost and time effective strategy which will help to prevent them becoming big weed issues in the future.

A more detailed “Alert” list of weed species is provided in Appendix B, and definitions of weed status categories can be found in Appendix C.

Common Name	Scientific Name	Status	Concern
Gallon's Curse	<i>Cenchrus biflorus</i>	Permitted - s11	Alters fire regimes, increases erosion risk, and competes with native vegetation.
Sicklepod	<i>Senna obtusifolia</i>	DP (s22)	Declared weed. Major environmental weed in QLD and NT. Potential for large infestations to create thickets, outcompeting natives. One very recent record in Broome townsite along a drain (tbc).
Rubber Bush	<i>Calotropis procera</i>	DP (s22)	A weed of disturbed sites, roadsides, waste areas, inland watercourses, coastal sand dunes, grasslands, open woodlands and pastures. Relatively uncommon in Broome townsite.
Coral Creeper/ Queens Jewels	<i>Antigonon leptopus</i>	Permitted - s11	Recognised internationally as a weed of Monsoon Vine thickets, dunes and coastal vegetation, it smothers native vegetation. Leaves dry out and drop in the dry season causing increased fire hazard and fuel loads. Reproduces by seed, tubers and root suckers.

▲ Table 1: Priority 1 Species – Watch and Act



8.2 Priority 2 Species - Take Strategic Action

Priority 2 weeds are those species within the Broome townsite (and the broader Shire of Broome) which are having serious detrimental impacts on biodiversity and amenity values and continue to threaten these values. These species are well established across the townsite on numerous sites and in high abundance. It is important to plan to control these weeds in a strategic manner to ensure the protection of the highest value assets in the Broome townsite and wherever possible, to restrict the spread of these invasive species.

Common Name	Scientific Name	Status	Concern
Bellyache Bush	<i>Jatropha gossypifolia</i>	DP (s22) WoNS	Invasive along rivers and wetlands, displacing native vegetation.
Coffee Bush	<i>Leucaena leucocephala</i>	Permitted - s11	A prolific seed producer. Seeds germinate readily and can grow into dense thickets. Has become a weed of undisturbed bushland.
Hairy Merremia	<i>Distimake aegyptius</i>	unknown	An escapee from gardens that can form dense infestations that will grow over native shrubs, grasses or young trees, effectively smothering them.
Mint Bush	<i>Mesosphaerum suaveolens</i>	Permitted - s11	Invades woodlands, open forests and watercourses and forms dense thickets on flood plain margins.
Neem Tree	<i>Azadirachta indica</i>	DP (s22)	Has a detrimental impact upon terrestrial and riparian ecosystems, agricultural production and cultural sites.
Snake Vine/ White Creeper	<i>Distimake dissectus</i>	Permitted - s11	An escapee from gardens that can form dense infestations that will grow over native shrubs, grasses or young trees, effectively smothering them.
Siratro	<i>Macroptilium atropurpureum</i>	Permitted - s11	As an environmental weed, Siratro can form dense infestations along forest edges, and will grow over native shrubs, grasses or young trees, effectively smothering them.
Stinking Passionflower	<i>Passiflora foetida</i>	Permitted - s11	A fast growing vine which can form dense infestations, growing over native plants, effectively smothering them. Easily spread by birds and bats eating them and dispersing seed.

▲ Table 2: Priority 2 Species - Take Strategic Action

8.3 Priority 3 Species - Priorities for Control in Recreational Areas

These species have been identified by the Shire as priority species as they threaten amenity values. Both species in this priority category have spiny fruit. They also have the potential to spread to other areas and outcompete natives. If left uncontrolled in high traffic areas, they are likely to be easily spread to other sites.

Note that there are two local native species (*Tribulus cistoides* and *Tribulus occidentalis*) which appear very much like Caltrop. They are extremely similar in form and have a function in dune stabilisation in the local natural environment (DBCA pers comm, 2025). Therefore, positive identification should occur before removing *Tribulus* species in natural or bushland areas.

Common Name	Scientific Name	Status	Concern
Caltrop	<i>Tribulus terrestris</i>	Permitted - s11	It is c in areas used for recreation as its spiny fruit can puncture footwear and bicycle tyres.
Khaki Weed	<i>Alternanthera pungens</i>	Permitted - s11	Thick ground cover with spiny burrs that can injure people and animals. It is claimed to also cause hay fever, asthma and dermatitis in some people.

▲ Table 3: Priority 3 Species - Priorities for Control in Recreational Areas

8.4 Priority 4 Species - Containment

Buffel Grass is a significant environmental weed in the Broome townsite and the broader Kimberley region. It can significantly alter ecology and fire regimes. It is listed here as Priority 4 simply because the infestation is likely beyond the level at which it could be eradicated in the long term. The focus for Buffel Grass in this strategy is to limit its impact by reducing its spread. Buffel Grass control within the Broome townsite must be undertaken at the appropriate time (while actively growing but before seed set) and undertaken in strategic areas which will help to protect priority assets and reduce its ability to spread. Control of any new infestations is also vital in containing this weed species.

It is important to note that this species is still recognised as a significant weed in the Shire of Broome and if other opportunities arise that may provide for control of this weed in other instances, they should be explored.

Common Name	Scientific Name	Status	Concern
Buffel Grass	<i>Cenchrus ciliaris</i>	Permitted - s11	Alters fire regimes, increases erosion risk, and competes with native vegetation.

▲ Table 4: Priority 4 Species - Containment

9. Weed Control Methods

Weed control is most effective if the effort is sustained for a number of years. Vigilance is the key to successful long term weed management. A combination of weed control methods should be used at different stages of the lifecycle of the plant or different stages of the infestation of a weed species. This is called integrated weed management (Weeds Australia, 2025).

Different techniques can be described as biological, mechanical, cultural and chemical. They are summarised here:

◆ Biological

Introducing a natural pest or pathogen to a weed population can help to keep them under control. Care must be taken not to introduce another invasive species in this way, as we have done in the past (eg. Cane Toad). These days extensive research and testing goes into the development of biological controls.

◆ Mechanical

This means a physical control method. It can include hand pulling seedlings, digging out or cutting down weeds, mowing, slashing or wiper snipping. Care must be taken to ensure proper timing of mechanical controls (to avoid spreading seed) as well as proper disposal of any plant material with the ability to grow into new weeds. Some weeds in Broome will grow easily from cuttings, root fragments or tubers. Mechanical controls can also be those things that form physical barriers to weeds or help suppress their growth such as mulching, using weed matting, or steam weeding.

◆ Cultural

Introducing better practices such as hygiene protocols and mapping tools can increase the effectiveness of a weed control program. Undertaking revegetation can result in less bare areas for weeds to take advantage of, tipping the balance from weed infested to a more natural state which will help to suppress weed growth.

◆ Chemical

The use of chemicals is not always essential and should be minimised wherever possible. However, herbicides play an important and effective role in an integrated weed control program. In some situations, herbicides offer the only practical, cost-effective and selective method of managing certain weeds.

Careful selection of herbicides is essential for effective weed control. Always read the label, follow usage directions and permit conditions, apply correct rates, and wear appropriate PPE. Key considerations include herbicide selectivity (targeting only the weed species), weather conditions (avoid spraying in wind or before rain), and minimising chemical use. For example, using mechanical methods first.

Timing is critical. Spraying after weeds have started setting seed may allow seeds to mature even as the plant dies, wasting time and resources.

Y=Yes
O=Occasionally

Scientific Name	Common Name	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>Alternanthera pungens</i>	Khaki Weed	Y	O								O	Y	Y
<i>Antigonon leptopus</i>	Coral Creeper /Queens Jewels	Y	O							Y	Y	Y	Y
<i>Azadirachta indica</i>	Neem Tree	O	O	Y	Y	Y	O	O	O	O	O	O	O
<i>Calotropis procera</i>	Rubber Bush	Y	Y	Y	O	O	O				Y	Y	Y
<i>Cenchrus biflorus</i>	Gallon's Curse	Y	Y	Y	Y	O	O	O	O	O	O	Y	Y
<i>Cenchrus ciliaris</i> [^]	Buffel Grass	Y	Y	Y	Y	O	O	O	O	O	O	Y	Y
<i>Distimake aegyptius</i>	Hairy Merremia	Y	O							Y	Y	Y	Y
<i>Distimake dissectus</i>	Snake Vine /White Creeper	Y	O							Y	Y	Y	Y
<i>Jatropha gossypifolia</i>	Bellyache Bush	Y	Y	Y	Y	O						O	Y
<i>Leucaena leucocephala</i>	Coffee Bush	O	O	Y	Y	O						O	Y
<i>Macroptilium atropurpureum</i>	Siratro		Y	Y	Y	Y	Y						
<i>Mesosphaerum suaveolens</i>	Mint Bush	Y	Y	O	O						Y	Y	Y
<i>Passiflora foetida</i>	Stinking Passionfruit	Y	O							Y	Y	Y	Y
<i>Senna obtusifolia</i> *	Sicklepod	Y	Y	Y	Y							Y	Y
<i>Tribulus terrestris</i>	Caltrop	Y	Y	O	O	O	O	O	O	Y	Y	Y	Y

▲ Table 5: Optimal timing for control of priority weeds within the Broome townsite

[^]Buffel Grass responds quickly to rainfall events. Control should be undertaken within the first 2 weeks following rain to control both seedlings and actively growing adult plants. Can grow all year round if conditions are favourable.

* Early control of Sicklepod is most effective. Seedlings should be controlled. Assumption used that seedlings will recruit in the wet season only.

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Table 6 below provides recommendations for control of each priority species. This information has been collated from a variety of sources (available in section 12 References). Users of chemical products must always read the label and any permit, before using the product, and strictly comply with the directions on the label and the conditions of any permit.

Scientific Name	Common Name	Management Recommendations
<i>Alternanthera pungens</i>	Khaki Weed	<ul style="list-style-type: none">For isolated plants, dig or hand pull (prior to seed set) making sure to remove the taproot.Spot spray with Triclopyr and Picloram or Metsulfuron methyl while actively growing. Spraying is most effective in the early growth stage.
<i>Antigonon leptopus</i>	Coral Creeper /Queens Jewels	<ul style="list-style-type: none">Hand pulling individual plants must include digging up tubers and revisiting the site for follow up control. Cutting the vine alone will result in resprouting from cut stems and underground tubers.Apply Garlon to cut stems. Follow up control of any reshooting vegetation with a foliar spray using glyphosate or triclopyr when actively growing.
<i>Azadirachta indica</i>	Neem Tree	<ul style="list-style-type: none">Foliar spray seedlings (under 2m) while actively growing with Triclopyr and Picloram with a non-ionic wetting agent.Basal Bark with Triclopyr, Picloram and Diesel (eg. Access).Drill and pill with Di-Bak M capsules at approx. 10cm spacings around the trunk as close to the ground as possible.
<i>Calotropis procera</i>	Rubber Bush	<ul style="list-style-type: none">Grubbing or hand pulling plants is only successful if the top 20cm of root is also removed. Roots are extensive and spongy and the plant readily resprouts from root fragments.For plants <2m foliar spray with Metsulfuron-methyl or Warrant and pulse.For larger plants basal bark with Triclopyr, Picloram and Diesel (eg. Access) or spray with Picloram + 2,4-D amine while actively growing.
<i>Cenchrus biflorus</i>	Gallon's Curse	Spot spray with glyphosate when actively growing and before seed set.
<i>Cenchrus ciliaris</i>	Buffel Grass	Buffel Grass can germinate, grow, and seed within 2–6 weeks, so timing is critical. The most effective control uses both mechanical and chemical methods. Slash or mow only before flowering ends and seed set begins. Note – slashing while in seed can exacerbate the spread of this weed. Follow up with a foliar spray using glyphosate and/or flupropanate once active regrowth occurs.

<i>Distimake aegyptius</i>	Hairy Merremia / Hairy Woodrose	<ul style="list-style-type: none">Cut vines and apply triclopyr, glyphosate or MCPA. Follow up to ensure resprouting stems and tubers are controlled.On reachable, actively growing, reshooting foliage, glyphosate can be applied with effective results.
<i>Distimake dissectus</i>	Snake Vine /White Creeper	<ul style="list-style-type: none">Mechanical controls can reduce large infestations if combined with follow up chemical control, however cut stems and root fragments can develop roots and become new plants.
<i>Jatropha gossypifolia</i>	Bellyache Bush	Foliar spray when actively growing and before seed set with Metsulfuron-methyl or Fluroxypyr. Avoid mechanical controls as it can grow from fragments of stem and root material.
<i>Leucaena leucocephala</i>	Coffee Bush	<ul style="list-style-type: none">Hand pull small seedlings in wet season when ground is soft. Tree popper tools can assist with pulling out larger saplings. Cut and paint saplings with Vigilant II gel herbicide. Larger plants can be killed by basal barking using Diesel and access drill and pill with Di-Bak AM capsules close to ground level.
<i>Macroptilium atropurpureum</i>	Siratro	Isolated plants can be hand pulled or dug out, being sure to remove all root material. For larger infestations spot spray with glufosinate-ammonium (eg. Basta).
<i>Mesosphaerum suaveolens</i>	Mint Bush	Hand pull plants when infestations are small before seed set. Foliar spray before flowering with amine, ester 2,4-D.
<i>Passiflora foetida</i>	Stinking Passionflower	Hand pulling vines when the soil is moist is the most reliable form of control. Cut and paint stumps with glyphosate.
<i>Senna obtusifolia</i>	Sicklepod	<ul style="list-style-type: none">Manual control: Pull seedlings early, removing all roots. Follow up regularly, as each plant can produce up to 8,000-10,000 seeds.Chemical control: Less effective on mature plants. Before flowering, apply picloram or picloram + triclopyr (e.g. Tordon 75-D or Grazon DS) with a non-ionic wetting agent to runoff.
<i>Tribulus terrestris</i>	Caltrop	<ul style="list-style-type: none">Hand pull individual plants if infestation is small. Dispose of plants with seed carefully.Herbicides are most effective at the seedling stage. Spot spray with Glyphosate while actively growing and before seed set. This can be a short window of less than 6 weeks.

▲ Table 6: Management recommendations for each of the priority weed species for the Shire of Broome

10. Mapping and Monitoring

Ideally, weed mapping should provide a clear picture of the distribution and density of priority weed species to guide management and monitoring. Mapping helps track the effectiveness of control efforts over time, directs staff and contractors to priority areas, and supports follow-up by showing where past infestations occurred, reducing reliance on memory. Regular mapping (e.g. every 3–5 years) is a valuable tool for identifying successful control, detecting new outbreaks, and planning future efforts more strategically.

There are several weed mapping techniques that could be utilised effectively. It is recommended to undertake mapping in accordance with the Department of Biodiversity, Conservation and Attractions' (DBCAs) Standard Operating Procedure (SOP22.1), which utilises standard cover classes of 0-5%, 6-75% and 75-100%. While this methodology is a little subjective, it is relatively quick and easy to do and provides a clear indication of where the core of the infestations are, where the edges or spread of the weeds is occurring and where outliers are or where potentially new populations are establishing. It can be further simplified by recording weed distribution and densities as groups of species – grasses, vines and woody weeds where individual species are intermixed and can be controlled using the same methodology. Where isolated plants occur, point locations may also be recorded.

Weed mapping across the townsite is a significant body of work on its own. For this reason, areas should be mapped in order of priority. Figure 2 above highlights the drainage basins parallel to Minyirr Park as Priority 1 drains. If possible, a professional consultant could be utilised to undertake the initial weed mapping, using the DBCA guideline outlined above. This will provide the Shire with a snapshot of the occurrence, density and extent of priority weeds in priority control areas. This data can be provided as a shapefile to be incorporated into the Shire's GIS mapping system for reference. It can then be re-surveyed in 3 – 5 years and a comparison made to understand the effectiveness of the weed control program and highlight species requiring greater control or areas for improvement.

As an interim and additional monitoring measure, photo point monitoring is a quick and inexpensive monitoring tool. Photo points should be set up to capture the scope of planned activities at key sites. The same point should be photographed facing the same direction on a regular (6 monthly) basis. There are guides available to assist with setting up good photo monitoring points, but some key tips are:

- ◆ Use a fixed point or consider installing a fixed-point marker eg. ground peg to ensure the photographer stands in the exact same spot each time, or an angle on a post, on which a camera can be aligned easily to give the same view each time.
- ◆ Ensure there is a recognisable feature in the view eg. tree, post, culvert etc to help with the alignment of photo.
- ◆ Refer to a copy of the first photo taken at each point to help align new photos correctly.

Additionally, mapping weed control efforts can help gain an understanding of effectiveness and highlight priorities for retreatment. The Shire currently maps this using its internal asset management system. A standard approach to the way in which this is recorded may improve the use of these records over time.

Alternatively, gps based mapping programs such as Fulcrum, Mappt, QGIS etc can make relocating photo points easy (with geotagged photos), provide an accurate way to undertake weed mapping and allow for recording tracks, points or polygons in the field to record weed treatment with spatial accuracy. Combined with simple drop-down menus, these tools can record important details of each weed treatment such as timing in the plants development, rate of chemical applied, weather conditions etc, to help determine what works best over time. These types of programs can become powerful and simple tools for demonstrating effort and assessing the effectiveness of weed control efforts.



▲ Vine weeds smothering native vegetation in Minyirr Park

11. Action Plan

Table 7 below provides a list of actions required to effectively control weeds in the Shire of Broome. The actions are organised by the goal they contribute to and the strategy they implement.

11.1 Goal - Prevent						
Strategy & Action	Target	Year				Responsible Department
		2026	2027	2028	2029	
Practice Improvement						
Develop standard weed hygiene protocols	1 SOP developed	●				Operations
Develop environmental induction/greencard training	1 training module developed	●				Operations
Train staff (induction and hygiene protocols, for appropriate staff, include weed ID at all growth stages)	Train all relevant current staff	●				Operations
	Train new staff	●	●	●	●	
Consider creating designated wash down bay within the Shire operations centre	Cost/benefit analysis undertaken and considered potential for location	●				Operations
If appropriate create designated wash down bay within the Shire operations centre	1 washdown bay created (If appropriate)		●			Operations
Explore opportunities to improve mulch making processes to ensure weed propagules are destroyed	Research and develop 1 new SOP	●	●			Waste Service
Develop clear guidelines for staff on separation of weedy greenwaste where possible	Develop environmental induction/training	●				Waste Service

▲ Table 7: Shire of Broome Weed Action Plan

Priority Scale



Strategy & Action	Target	Year				Responsible Department
		2026	2027	2028	2029	
Influence						
Consider development of a local planning policy on landscaping within the Broome townsite	Consider, discuss and draft if appropriate		●			Planning & Infrastructure
Review LPP 5.22 - Subdivisional and Development Guidelines to update the drainage guidelines and include additional information regarding weed management	1 review undertaken, opportunities for improvement identified and planning policy updated	●				Planning & Infrastructure
Develop an accepted species list for landscaping and revegetation	1 species list developed		●			Operations
Develop landscape and revegetation guidelines for the Broome townsite	1 guideline developed			●		Planning & Building and Operations
Investigate the mechanisms for introducing by-laws for pest plants under the Local Government Act to allow the Shire to require the removal of certain pest plant species on private property (consider for Priority 1 weeds)	Mechanism investigated				●	Cross Departmental
Engage and Educate						
Develop a new weeds brochure to help the community identify priority weeds and assist staff in communicating about weed issues	1 brochure developed			●		Operations

11.2 Goal - Understand

Strategy & Action	Target	Year				Responsible Department
		2026	2027	2028	2029	
Prioritisation						
Undertake desktop assessment (utilising local knowledge) to identify key sites within Broome townsite with weed issues that are owned/managed by government departments or other organisations	1 map and 1 list of sites and owners/ managers					Operations and Information Services
Map location and extent of community group working areas (internal Shire mapping system) and create a Friends Group Register	1 map and 1 friends group register created					Operations
Undertake a gap analysis to asses where logical gaps between community or friends group areas are. This may identify gaps between 2 groups or prioritise areas upstream/downstream of existing groups	Gap analysis completed					Operations
Source Control						
Identify source populations and parent tree locations	1 community engagement workshop 1 map created					Operations and Community Engagement

▲ Table 7: Shire of Broome Weed Action Plan

Strategy & Action	Target	Year				Responsible Department
		2026	2027	2028	2029	
Practice Improvement						
Investigate appropriate mapping tools (such as Mappt, Fulcrum, QGIS etc) for use in weed mapping, photo point monitoring, recording new weed locations and recording weed management effort	Investigate and evaluate tools (1 document or recommendation)	●				Operations
Map priority weed infestations. Start with areas in or adjacent to priority areas for protection eg. Minyirr Park. Refer to Figure 2 of strategy	Priority weeds mapped in priority 1 locations	●				Operations
	2 drains or parks mapped per year		●	●	●	
Photopoint monitoring at all sites of significant weed infestation - starting with priority areas	Photopoints set up at priority 1 sites	●				Operations
	Photopoints set up at priority 2 sites		●			
	Photopoints set up at priority 3 sites			●		
	Photopoints revisited at least annually		●	●	●	

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11.3 Goal - Limit Impacts

Strategy & Action	Target	Year				Responsible Department
		2026	2027	2028	2029	
Prioritisation						
Explore funding opportunities and support mechanisms for a collaborative effort to reduce weed load in Minyirr Park and adjacent drain to reduce to more manageable levels	1 meeting with stakeholders and land managers	●				Operations
	1 grant application or business case to council		●			
Source Control						
Remove 2 large Neem trees from the middle of Chinatown (cnr Short Street and Carnarvon Street)	1 parent tree removed	●				Operations
	1 parent tree removed			●		
Practice Improvement						
Schedule weed control to ensure optimal timing for control. Where this is not possible, avoid undertaking control measures that will exacerbate the spread of weeds. Employ other strategies to contain spread of weeds if done when seed is present eg. catchers on mowers and carefully disposing of catch, spraying grasses without slashing, leaving woody weeds in situ.	All priority weeds in priority 1 areas controlled at optimal times or mitigation measures put in place	●	●	●	●	Operations
Investigate available engineering and bioengineering solutions to minimise the potential impacts of drainage outflows on coastal ecosystems	Undertake reasearch and implement practice improvement where applicable	●	●	●	●	Engineering & Infrastructure

▲ Table 7: Shire of Broome Weed Action Plan

Strategy & Action	Target	Year				Responsible Department
		2026	2027	2028	2029	
Influence						
Contact key organisations with land that is not actively or adequately managed for weeds, starting with those that have large or multiple problem sites. Explore opportunities for improved management through better communication, collaboration, or alternative agreements.	Meet with 2 organisations per year (as needed)		●	●	●	Operations
Notify landholders with priority weed issues starting with declared weeds and priority 1 species	5 notices per year		●	●	●	Operations and Community Engagement
Use removal of Neem parent trees in Chinatown as publicity to launch a Neem replacement program in the broader community. Offer free Di-Bak M encapsulated treatments and replacement seedlings to incentivise community control of Neem.	Project scoped, costed and insurance implications checked	●				Operations
	1 article promoting program per year		●	●	●	Operations and Community Engagement
Collaborate						
Actively seek opportunities to collaborate with other organisations in Broome to control weeds (eg. Funding applications, on ground collaborative working days etc)	1 grant application and 1 collab working day per year	●	●	●	●	Operations
Regular open communication with joint manager of Minyirr Park	Attend quarterly meetings	●	●	●	●	Operations
Investigate opportunities for collaboration on weed education with DPIRD and DBCA	Regular discussions	●	●	●	●	Operations
Investigate opportunities with DBCA, DPIRD and NBY for collaboration in community weed action initiatives and busy bees	Regular discussions	●	●	●	●	Operations

Shire of Broome Weed Management Strategy and Action Plan

Strategy & Action	Target	Year				Responsible Department
		2026	2027	2028	2029	
Engage and Educate						
Develop a support framework for environmental volunteer groups with a Friends Group manual, registration forms, clear request processes, annual planting plans to avoid maintenance conflicts, and sign-in/out sheets for insurance	1 Friends Group Manual developed	<div></div>				Operations and Community Engagement
Develop and deliver workshops on weed identification	2 per year		<div></div>	<div></div>	<div></div>	Operations
Facilitate community involvement in weed control through weed action days (busy bees or 'War on Weeds' efforts)	3 per year	<div></div>	<div></div>	<div></div>	<div></div>	Operations and Community Engagement
Make information on priority weeds and tips to tackle them publicly available.	1 brochure updated	<div></div>				Operations
	Information available on the Shire website	<div></div>				Operations and Corporate Services
	Design and install signage at the waste management facility		<div></div>			Operations and Waste Management
	Publish 12 'Weed Watch' articles with photo and control tips in local media.		<div></div>	<div></div>	<div></div>	Operations and Community facilitator
Actively advertise for friends group volunteers to help take care of specific sites - use gap analysis to inform target sites	Advertise for 1 new group per year		<div></div>	<div></div>	<div></div>	Operations and Community Engagement
Scope, costs and if favourable seek funding for a tools trailer or tool library for use by community groups. Include tools such as hand tools, tree poppers, planting tools.	Scope and cost		<div></div>			Operations
	Apply for funding (internally or externally)		<div></div>	<div></div>		

▲ Table 7: Shire of Broome Weed Action Plan



▲ Shire of Broome staff controlling weeds in a round about

12. References

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Appendix A - Priority Weed Species Profiles

Priority 1 Weeds - Watch and Act

Name	Gallon's Curse (<i>Cenchrus biflorus</i>)
Description	A clumping annual grass that grows up to 60cm tall and produces seed bearing burrs arranged in a cylindrical spike up to 10 cm long.
Habitat	Commonly found on disturbed areas around Broome including in the Vine thickets, drainage basins and road verges. Seeds germinate with little water.
Dispersal	The burrs are easily dislodged and attach to materials and fur.
Control	Hand removal of grass before it sets seed. Bag if the seeds have formed for proper disposal in landfill. Chemical treatment can assist in large areas to help with regrowth.



Name	Sicklepod (<i>Senna obtusifolia</i>)
Description	An annual or short-lived perennial shrub which grows to 2m. Declared weed in WA. A significant weed in NT and QLD forming dense thickets. Compound leaves on short stalks with two or three pairs of leaflets. Yellow pea type flowers produce 10cm long bean-like pods which grow down from the stem.
Habitat	Invades disturbed areas including roadsides, waterways, floodplains, drainage channels, open woodlands, crops and pastures in wetter tropical and sub-tropical environments.
Dispersal	This species reproduces only by seed. Seeds are dispersed by water and animals that eat the fruit (e.g. cattle) or in mud sticking to animals, footwear, machinery and vehicles.
Control	Hand pull seedlings as you find them, record and report locations and ensure you follow up to remove new recruits.



Priority Scale



Name	Rubber Bush (<i>Calotropis procera</i>)
Description	Introduced as an ornamental shrub, it has escaped gardens and become a weed of roadsides and watercourses and commonly invades old, cultivated land and heavily grazed areas.
Habitat	Commonly found on disturbed areas around Broome including in the Vine thickets, drainage basins and road verges. The burrs are easily dislodged and attach to materials and fur. Seeds germinate with little water.
Dispersal	Fruits are large green inflated pods which burst open to release ripe seeds. The seeds have a tuft of silky hairs which allows them to be carried large distances by the wind (DPIRD, 2020).
Control	Its roots are large and spongy; new plants quickly grow from underground roots missed during removal. This makes any form of mechanical control (including fire) difficult. Basal barking is recommended for control. Alternatively, drill and pill with DiBak M has also been successful previously.



Name	Coral Creeper (<i>Antigonon leptopus</i>)
Description	Introduced as an ornamental shrub, it has escaped gardens and become a weed of roadsides and watercourses and commonly invades old, cultivated land and heavily grazed areas.
Habitat	Known as an invasive weed of Monsoon Vine thickets, dunes and coastal vegetation, it smothers native vegetation. Has been recorded in Minyirr Park.
Dispersal	Reshoots from root suckers and underground tubers as well as from seed.
Control	Hand pull and dig out tubers. Cut and paint stems with Garlon. Pull the vine down off native vegetation. Revisit for follow up control.



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Priority 2 Weeds - Take Strategic Action

Name	Bellyache (<i>Jatropha gossypifolia</i>)
Description	An erect perennial shrub with thick hairy brown stems. The leaves are alternate, palmate 3-5 lobed and are sticky and red in colour when young changing to a bright green. Flowers are reddish purple with a yellow centre and grow in clusters above the main plant with female flowers larger than the males producing an oblong fruit capsule 1.2 x 1cm that explode to release seeds. Flowers and fruits February to May. Growing from 1-3 metres tall in dense stands as seeds fall straight to the ground near the parent plants.
Habitat	Growing regularly in drainage areas but will adapt to all ranges of soils. Plants will sucker from roots if chopped.
Dispersal	Originally grown as an ornamental plant, can be found throughout Broome and the west Kimberley. A mature plant can produce 50 seeds per month aiding the spread. The seeds are toxic to stock and humans.
Control	Foliar spray when actively growing and before seed set with Metsulfuron-methyl or Fluroxypyr. Avoid mechanical controls as it can grow from fragments of stem and root material.



Name	Coffee Bush (<i>Leucaena leucocephala</i>)
Description	A small dense tree growing to 6m with dark green leaves that are bipinnate. Flower heads are cream coloured and globular at the end of the branches and the seed pods are flat and brown at 10-20 cm long in clusters.
Habitat	Grows in any soil type preferring moist areas. Common along drainage channels and disturbed roadsides.
Dispersal	Found throughout the Broome town site and across Northern Australia. A prolific seeder introduced as cattle fodder, can be transported by wind, water, animals and machinery.
Control	Hand pull small seedlings in wet season when ground is soft. Basal bark larger plants, or “drill and pill” with Di-Bak AM capsules.



Name	Hairy Merremia (<i>Distimake aegyptius</i>)
Description	A vigorous perennial climber that can grow prostrate with slender twinning hairy stems and a green leaf of 5 segments paler on the underside with a white funnel shaped flowers and a globular seed capsule 1cm in diameter containing 4 seeds light brown in colour.
Habitat	An invasive creeper that can smother other plants and grow in all soil types but more vigorous during the warmer wetter months and can cover large areas.
Dispersal	Commonly found around Broome and other Kimberley town sites, generally dispersed by animals digesting the seeds.
Control	Cut vines and apply triclopyr, glyphosate or MCPA. Follow up to ensure resprouting stems and tubers are controlled. Mechanical controls can reduce large infestations if combined with follow up chemical control, however cut stems and root fragments can develop roots and become new plants.



Name	Mint Bush (<i>Mesosphaerum suaveolens</i>)
Description	An erect aromatic, fast growing herb that is covered in fine hairs and usually branched. Green leaves are opposite and deeply veined broadly ovate and slightly toothed. Small mauve flowers are arranged in clusters along the stems and seeds are light brown. Flowers between April and September.
Habitat	Growing from 0.5 metres to 1.0 metres tall the herb is usually found growing in clumps and only lives for a year.
Dispersal	Each plant can produce a large number of flowers, resulting in high volumes of seed. Seed can either fall or be retained in the plant.
Control	Hand pull plants when infestations are small before seed set. Foliar spray before flowering with amine, ester 2,4-D.



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Name	Neem Tree (<i>Azadirachta indica</i>)
Description	A fast-growing evergreen tree 6-10 metres tall and up to 10 metres wide. Dark green serrated leaflets are 3-8cm long with the young leaves reddish to purple in colour. Bark is deeply fissured. The flowers are cream coloured arranged in an axillary cluster up to 15 -20cm with a strong perfume. The fruit is an olive like drupe 1-3cm long, yellowish when ripe, containing one seed and a sweet pulp. Neems have a strong deep root system producing suckers when damaged.
Habitat	Widespread across the Kimberley. Found in disturbed and undisturbed sites: private property, paddocks, drainage systems and intact bushland around Broome townsite.
Dispersal	Trees produce up to 80,000 viable seeds per year and are readily spread by birds and bats. Can also produce suckers.
Control	Basal Bark or “drill and pill” with Di-Bak M capsules as close to the ground as possible.



Name	Snake Vine (<i>Distimake dissectus</i>)
Description	A vigorous climbing perennial vine that can grow prostrate with slender twinning stems covered in fine hairs. Green leaves are paler on the underside and segmented into 5-7 lobes, slightly serrated at the edge. The white funnel shaped flowers have a purple centre, producing a globular capsule containing black seeds. Flowering from May to August.
Habitat	An escapee from gardens that can form dense infestations that will grow over native shrubs, grasses, or young trees, effectively smothering them. Found across the Broome townsite, common along drains and disturbed sites but also present in Minyirr Park.
Dispersal	Animals such as birds disperse seeds. Water moves seeds to new locations too. Snake Vine can also root from nodes.
Control	Cut vines and apply triclopyr, glyphosate or MCPA. Follow up to ensure resprouting stems and tubers are controlled. Mechanical controls can reduce large infestations if combined with follow up chemical control, however cut stems and root fragments can develop roots and become new plants.



Name	Siratro (<i>Macroptilium atropurpureum</i>)
Description	A scrambling often prostrate perennial vine that has long stems up to 4m. Pea flowers are black to deep purple and are erect above the main plant, forming seed pod up to 10 cm long that twist when ripe to release the black-brown seeds.
Habitat	Common on disturbed sites including drainage channels and edges of bushland and roads.
Dispersal	Seeds can be transported easily by animals, water, or vehicles. It can also root at the nodes and grow from just a fragment of a plant enabling the spread of the plant.
Control	Isolated plants can be hand pulled or dug out, being sure to remove all root material (otherwise it will reshoot). For larger infestations spot spray with glufosinate-ammonium (eg. Basta).



Name	Stinking Passionflower (<i>Passiflora foetida</i>)
Description	Leaves are palmate and lobed, covered in soft hairs with yellowish stems. Flowers are white to purple, fruit a globular berry turning from green to yellowish orange when ripe 20-30 mm across. All vegetative materials and unripe fruit can be toxic. Flowering and fruiting February to November. Plant has an unpleasant smell.
Habitat	Common in disturbed area around Broome, but widespread across Northern Australia. More commonly found in coastal areas and drainage channels.
Dispersal	Seeds spread by birds, bats and other animals (including people) and germinate readily.
Control	Hand pulling vines when the soil is moist is the most reliable form of control. Cut and paint stumps with glyphosate.



Priority 3 Weeds - Priorities for Control in Recreational Areas

Name	Khaki Weed (<i>Alternanthera pungens</i>)
Description	A prostrate annual with leaves opposite, hairy with whitish veins. Ovate to elliptical in shape often rooting at the nodes to form new plants and often with several tap roots per plant. Flowers are a whitish globular head with five sharp sepals that dry to Khaki colour. Fruit and seed inconspicuous. Plants can flower all year but flower and fruit more in the warmer months.
Habitat	Colonises bare ground, disturbed areas, road sides, lawns, camp sites and stock yards forming a dense mat.
Dispersal	Seed in spikey burs that penetrate footwear and tyres to spread easily, preferring moister areas.
Control	<ul style="list-style-type: none">For isolated plants, dig or hand pull (prior to seed set) making sure to remove the taproot.Spot spray with Triclopyr and Picloram or Metsulfuron methyl while actively growing. Spraying is most effective in the early growth stage.



Name	Caltrop (<i>Tribulus terrestris</i>)
Description	A vigorous prostrate spreading perennial growing up to 30cm x several metres, forming a dense mat that suffocates other plants. Greenish grey pinnate leaves covered in hairs with bright yellow flowers and a woody tap root. Fruit woody and globular, 30mm across separating into 5 parts when mature with spines 5mm long. Flowering all year round.
Habitat	Disturbed sites including roadsides and parks.
Dispersal	Spikey fruit is easily spread by vehicles, human and animal foot traffic.
Control	<ul style="list-style-type: none">Hand pull individual plants if infestation is small. Dispose of plants with seed carefully.Herbicides are most effective at the seedling stage. Spot spray with Glyphosate while actively growing and before seed set.



Appendix B - Alert Weed Species List

Scientific Name	Common Name
<i>Alstonia scholaris</i>	Cheesewood/Indian Devil Tree
<i>Cabomba caroliniana</i>	Cabomba
<i>Cenchrus echinatus</i>	Mossman Rivergrass
<i>Cenchrus setiger</i>	Birdwood Grass
<i>Clitoria tirnatea</i>	Butterfly Pea
<i>Coccinia grandis</i>	Ivy Gourd
<i>Cryptostegia grandiflorus</i>	Rubber Vine
<i>Cryptostegia madagascariensis</i>	Madagascar Rubber Vine
<i>Datura metel</i>	Angel's Trumpet, Downy Thornapple
<i>Datura stramonium</i>	Common Thornapple
<i>Eichhornia crassipes</i>	Water Hyacinth
<i>Euphorbia tirucalli</i>	Finger Tree
<i>Hymenachne amplexicaulis</i>	Hymenachne, Olive Hymenachne
<i>Martynia annua</i>	Devil's Claw
<i>Moringa oleifera</i>	Moringa
<i>Parthenium hysterophorus</i>	Parthenium Weed
<i>Pistia stratiotes</i>	Water Lettuce
<i>Praxelis clematidea</i>	Praxelis
<i>Prosopis sp.</i>	Mesquite
<i>Salvinia molesta</i>	Salvinia
<i>Senna alata</i>	Candle bush
<i>Thunbergia grandiflora</i>	Green trumpet plant
<i>Ziziphus mauritiana</i>	Taylor Fruit

Compiled from various sources including DBCA's Kimberley Alert weeds list, previous Shire of Broome Strategic documents and with reference to Florabase, and QLD alert list species.

Shire of Broome Weed Management Strategy and Action Plan

Appendix C - Weed Status Definitions and Explanations

BAM Act definitions:

◆ **Legal Status**

Each listed organism is declared under the Biosecurity and Agriculture Management Act, 2007, with certain legal requirements:

◆ **Declared Pest, Prohibited - s12**

Prohibited organisms are declared pests by virtue of section 22(1), and may only be imported and kept subject to permits. Permit conditions applicable to some species may only be appropriate or available to research organisations or similarly secure institutions.

◆ **Permitted - s11**

Permitted organisms must satisfy any applicable import requirements when imported. They may be subject to an import permit if they are potential carriers of high-risk organisms.

◆ **Declared Pest - s22(2)**

Declared pests must satisfy any applicable import requirements when imported, and may be subject to an import permit if they are potential carriers of high-risk organisms. They may also be subject to control and keeping requirements once within Western Australia.

◆ **Permitted, Requires Permit - r73**

Regulation 73 permitted organisms may only be imported subject to an import permit. These organisms may be subject to restriction under legislation other than the Biosecurity and Agriculture Management Act 2007. Permit conditions applicable to some species may only be appropriate or available to research organisations or similarly secure institutions.

◆ **Unlisted - s14**

If you are considering importing an unlisted organism/s you will need to submit the name/s for assessment, as unlisted organisms are automatically prohibited entry into WA.

◆ **Weeds of National Significance**

To help focus national efforts to address weed problems in Australia, the federal government compiled a list of the most problematic plant species in Australia. Species on this list are known as Weeds of National Significance (WoNS).



▲ Native vegetation in the Broome townsite

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