

Hunter Regional Groundsel Bush Management Strategy 2020 - 2030

Hunter Regional Weeds

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Abbreviations

Abbreviation	Description
ARTC	Australian Rail Track Corporation
BIS	Biosecurity Information System
DPI	NSW Department of Primary Industries
GBD	General Biosecurity Duty
HRGBMS	Hunter Regional Groundsel Bush Management Strategy
HRSWMP	Hunter Regional Strategic Weed Management Plan
HRWC	Hunter Regional Weeds Committee
HWTT	Hunter Weeds Technical Team
LCA	Local Control Authority
LGA	Local Government Area
MERI	Monitoring, Evaluation, Reporting and Improvement
NPWS	National Parks & Wildlife Services
TfNSW	Transport for New South Wales

1. Introduction

1.1 Background

Maitland City Council was commissioned by the Hunter Regional Weeds Committee to prepare a regional strategy for the management of groundsel bush (*Baccharis halimifolia*) in the NSW Hunter Region.

The strategy covers six (6) local government areas (LGAs) including Mid-Coast Council, Port Stephens Council, City of Newcastle, Lake Macquarie City Council, Cessnock Council and Maitland City Council. This strategy contains detailed background information on the ecology, threats and distribution of groundsel bush, and context including a cost/benefit analysis, relevant legislation and control methods. The strategy also includes a 1-year operational plan, 5-year delivery plan, a 10-year strategic approach, and a stakeholder and community engagement plan. A monitoring, evaluation, reporting and improvement (MERI) plan inclusive of NSW Biosecurity Information System (BIS) data input is also included.

The plan initially aims to prioritise and address the outlying scattered infestations through a continuous control and enforcement program. This will be done in conjunction with capacity building, advice and assistance to affected properties with the long-term aim of eradicating the weed from the region. This is consistent with best practice in biological invasion management (Wittenberg & Cock 2001) and the Hunter Regional Strategic Weed Management Plan 2017 – 2022 (HRSWMP).

1.2 Purpose and scope of plan

The purpose of the Hunter Regional Groundsel Bush Management Strategy (HRGBMS) is to:

- Establish the current distribution of groundsel bush in the Hunter region.
- Identify the key actions and a timeline to achieve the containment and localised eradication of groundsel bush from the region.
- Outline the business case for a regional containment program for groundsel bush in 10 years and incorporate localised eradications in a 6-year period.
- Provide a stakeholder and community engagement plan and communications plan.
- Provide a framework for monitoring, evaluation, reporting and improvement.

2. Ecology and biology

Groundsel bush is native to the West Indies, the Atlantic and the Gulf Coasts of North America. It is a major weed overseas, notably throughout many parts of Europe, including France, Spain and Russia. Groundsel bush is an erect, densely branched, perennial shrub which commonly reaches 2.5m, but can reach up to 7m in height.

2.1 Reproduction

Reproduction of groundsel bush occurs via seed however, male and female flowers appear on separate bushes. In a single season, a large mature plant can produce over one million seeds, which are covered with a pappus of silky hairs. This adaptation means dispersal of seed occurs mostly via wind and water. Seeds can spread significant distances in windy conditions or during floods, due to the pappus remaining attached for several days after release from the parent plant. Under normal conditions most seeds fall relatively nearby, which leads to the forming of dense stands of groundsel bush. The plant will grow beside or within brackish water with no issues. Seeds can also readily germinate in puddles along roadsides and dirt tracks. The seed has little dormancy and if viable, generally germinates when exposed to moisture. At room temperature seeds remain viable for up to fourteen months however, it is considered likely that buried seed could remain viable for three years.

2.2 Threats and impacts

Groundsel bush is highly invasive in disturbed open areas and can establish on a range of soil types including waterlogged, acidic and saline conditions. It presents a major threat to forestry, cropping and grazing industries, significantly reducing the productivity and carrying capacity of agricultural land. Groundsel bush has no feed value and is considered toxic to stock including cattle, sheep and poultry. The plant also presents a significant threat to natural areas such as swamps, wetlands and forests. In these habitats, groundsel bush takes advantage of any type of disturbance of the understorey, rapidly outcompeting native species.

The effective dispersal strategies and ability to establish in a variety of environments contribute to the species' successful invasiveness. Following germination from July to October, seedling growth rate is initially slow, however by autumn plants will have reached 1m in height, with prolific seed production occurring the following autumn.

3. Distribution

3.1 Australia and NSW

Groundsel bush was introduced to Australia as an ornamental plant, becoming naturalised in Queensland by 1900. It spread south becoming a serious weed in the Tweed, Richmond and Clarence catchments of northern NSW. It has gradually spread southwards along coastal fringes with records as far south as Eden in NSW. As a result of the species' adaptability groundsel bush has considerable scope for further expansion in Australia to the south and west of its current distribution.

3.2 Regional distribution

Targeted aerial and on-ground inspections for groundsel bush were conducted and regional maps were formed prior to the development of this plan. However, it is likely that the current data is not fully representative of all infestations in the region. The plant is currently distributed across six Local Government Areas (LGAs) within the Hunter Region. It is found in significant numbers in the Lake Macquarie, Newcastle and Mid-Coast LGA's with fewer plants identified within the Port Stephens, Maitland and Cessnock LGAs (**Figure 1**). Subsequently, there are two distinct core infestations in the Hunter region; one in the north within the Mid-Coast LGA and one in the south across the Newcastle and Lake Macquarie LGAs.

3.3 Regional spread

The linear spread of groundsel bush from the two core areas can be seen clearly in the attached maps. In the Mid-Coast LGA spread is occurring southwards along the Pacific Highway. The southern core area is showing similar trends. Groundsel bush has spread west from the core infestation in Lake Macquarie LGA into the Cessnock LGA via the Hunter Expressway. There is also significant spread from the Newcastle LGA west into the Maitland LGA. This spread is following the railway corridor between Hexham and Maitland, and the New England Highway. There are concerns that groundsel bush is also being spread by the building and landscaping industry. A significant infestation has been identified adjacent to a supplier in Teralba which delivers mulches, concrete bases and other products which are stored in its yard.

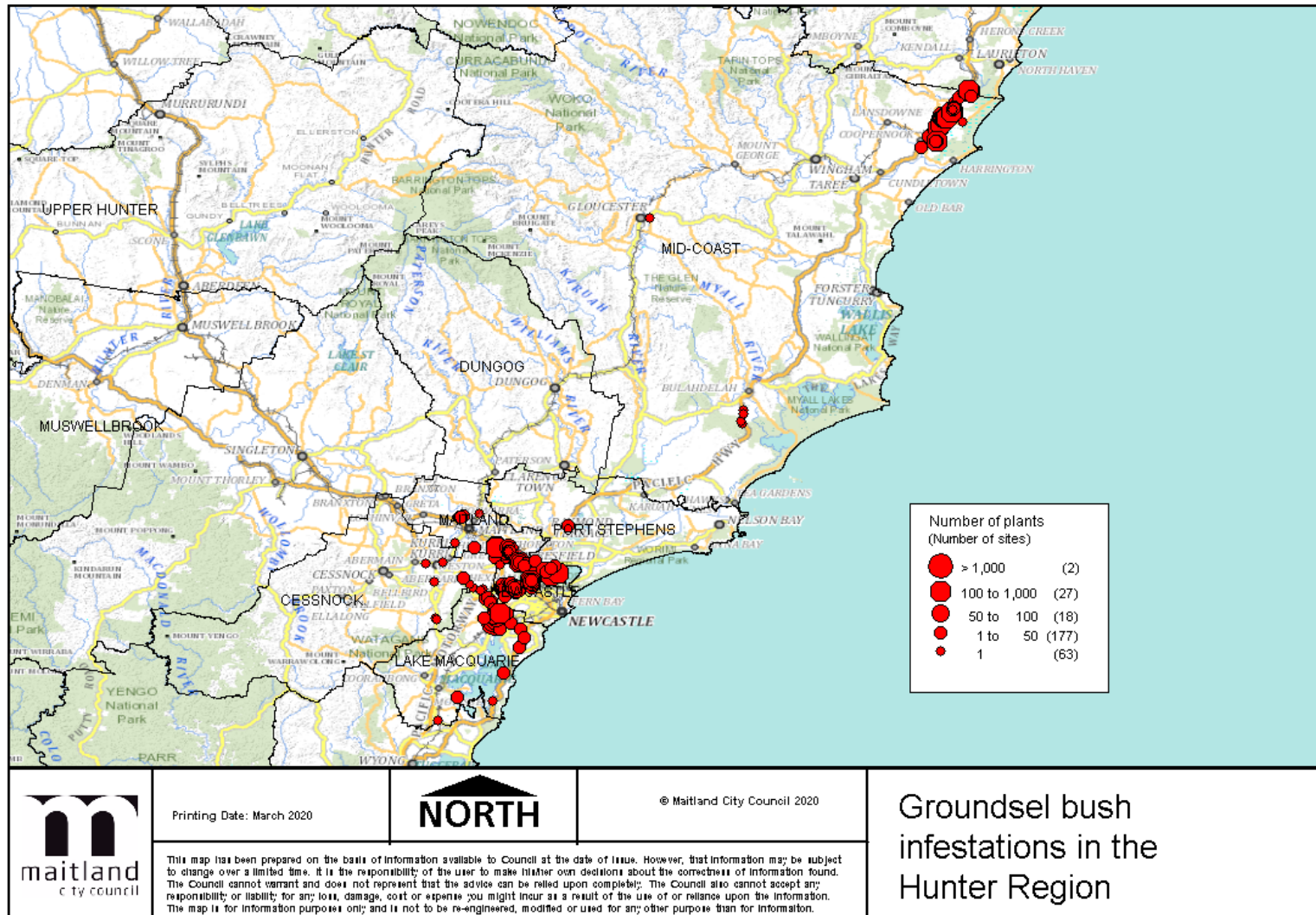


Figure 1. Groundsel bush distribution in the Hunter Region

4. Prioritised areas

Three distinct areas have been identified in the Hunter region based upon the known distribution and density of groundsel bush. Each of the three areas have been assigned a level of priority in relation to groundsel bush management. Core areas are the lowest priority, marginal areas are medium priority, and high priority sites are the highest priority. Maps of these prioritised areas will be made available to all project partners and key stakeholders.

4.1 Core Areas – Low Priority

Core areas in the HRGBMS are defined by the number of sites within proximity to each other, which contain significant numbers of groundsel bush plants. There are two (2) core locations identified within the plan. These are found in the Mid-Coast LGA north of Coopernook (**figure 2**) and Lake Macquarie/Newcastle LGAs across several suburbs (**figure 3**). Core areas are identified on the attached maps by red shading.

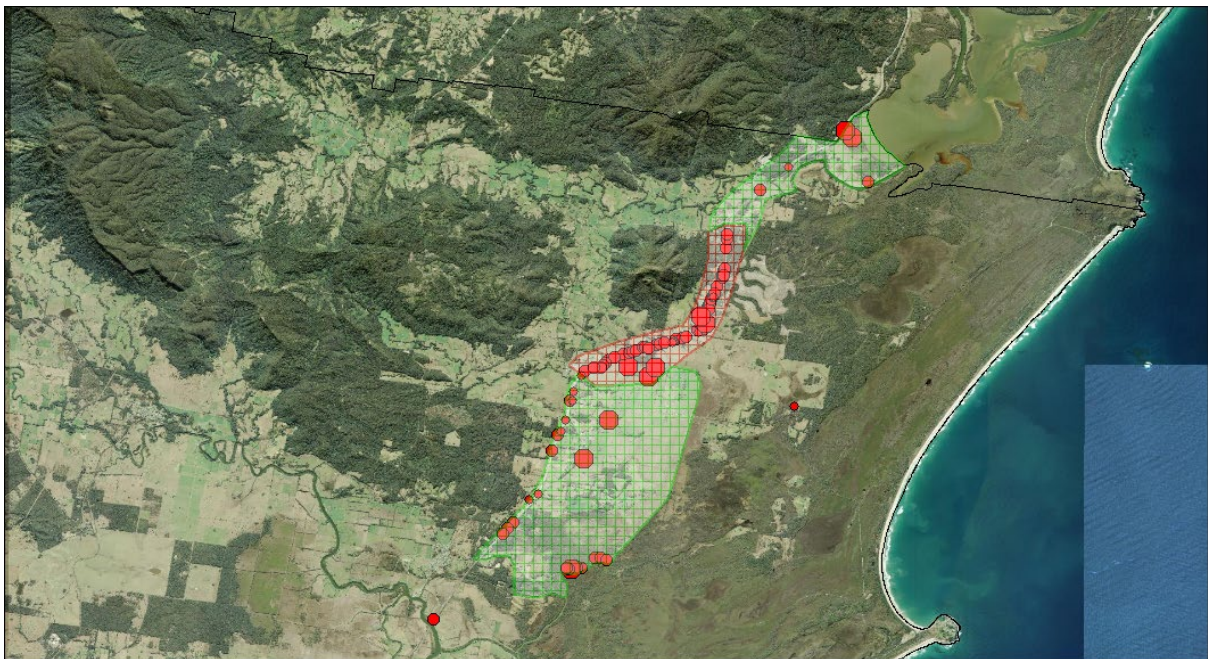


Figure 2. Core (red) and marginal (green) areas in the Mid-Coast LGA.

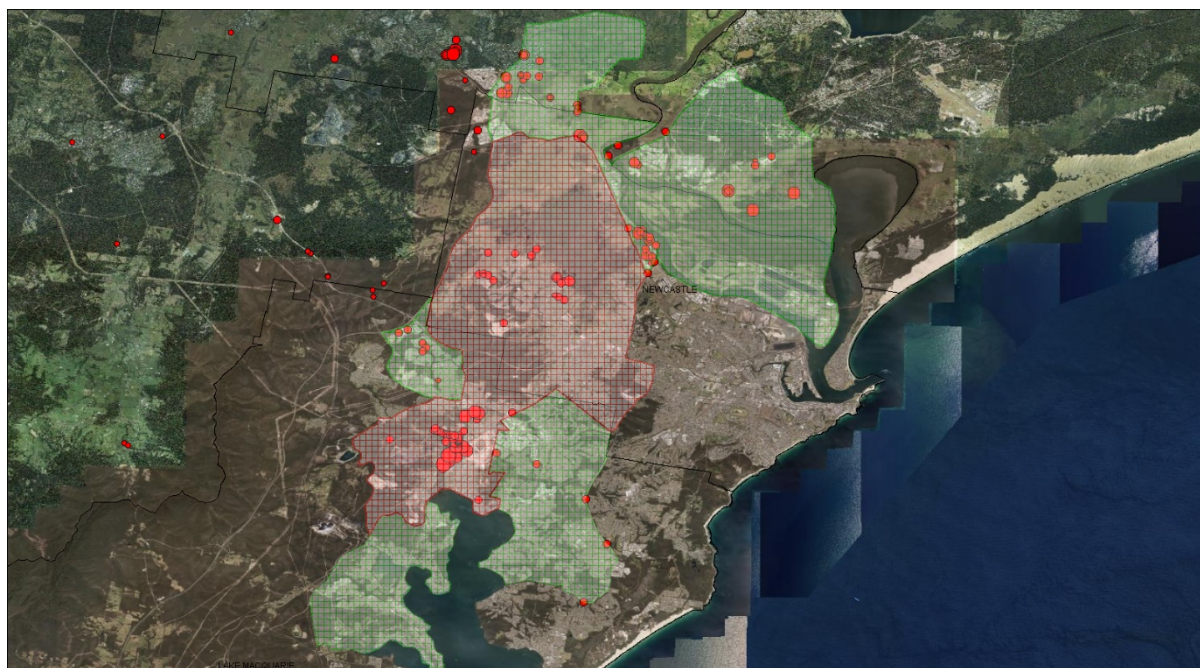


Figure 3. Core (red) and marginal (green) areas in the Newcastle and Lake Macquarie area.

4.2 Marginal Areas – Medium priority

Marginal areas adjoin core infestations however, sites and numbers of plants are fewer. If not managed appropriately, infestations in these areas are likely to result in further spread into uninfested areas. Marginal areas are identified on the attached maps by green shading (**figure 2** and **figure 3**).

4.3 High Priority Sites

High priority sites are those which are found in outlier locations (outside of the core and marginal areas). In most cases, these sites contain less than 50 plants or where plant numbers are greater, are considered a high priority for the strategic management of groundsel bush in the Hunter region. These sites are considered a high priority regardless of location or land tenure and include council land, public land, private land, reserves, railway corridors, roadsides and natural areas. Once a groundsel bush infestation is identified at any location in the Hunter region outside of the core and marginal areas, it will be considered a high priority site. The location of current groundsel bush high priority sites in the Hunter region are listed by LGA in **table 1**.

Table 1. Location of high priority groundsel bush sites in the Hunter region.

Area (LGA)	Location of high priority sites
Cessnock LGA	All sites within the Cessnock LGA.

Lake Macquarie LGA	All sites on or west of the Pacific Motorway (M1). All sites south of Toronto on the western side of the lake. All sites south of Croudace Bay on the eastern side of the lake. All sites on or east of the Pacific Highway.
Maitland LGA	All sites west of Thornton Road, Edwards Avenue and Government Road, Thornton. All sites on or north of Raymond Terrace Road. All sites east of Woodberry Road.
Mid-Coast LGA	All sites south of George Gibson Drive, Coopernook. All sites west of the Pacific Highway. All sites east of Cattai Creek.
Newcastle LGA	All sites on or west of Weakleys Drive and the Pacific Motorway (M1). All sites east of Main Road and Lookout Road and south of the Hunter River Channel.
Port Stephens LGA	All sites north and east of Masonite Road. All sites on or west of the Pacific Highway.

5. Context and issues

5.1 Cost benefit analysis

There are a range of direct and indirect costs and benefits associated with the development of the HRGBMS.

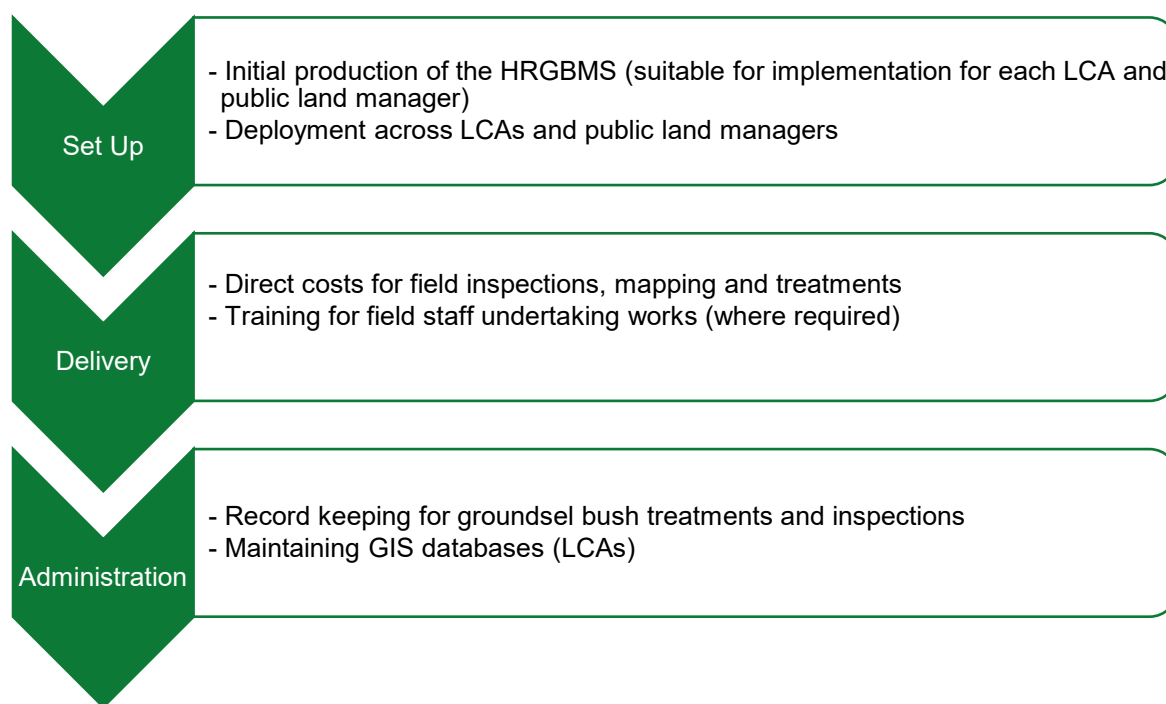
The direct benefits of developing the HRGBMS include:

- Consistent / strategic approach to groundsel bush management across all Local Control Authorities (LCAs) and public land managers.
- Co-operation between staff counterparts across LCAs and public land managers.
- Community education and engagement.
- Standardised data recording for inspections and treatments - via BIS.
- Improved overall outcome for the treatment of the species.
- Improved overall confidence for the containment and localised eradication of groundsel bush.

The indirect benefits of developing the HRGBMS include:

- Time saved on developing individual strategy documents for each LCA and public land manager.
- Clarity of expectations for all affected land managers.
- Public / community support.

Costs associated with developing, delivering and administering the HRGBMS are:



5.1.1 Maintaining the status quo

To assess the merits of implementing the HRGBMS, it is also necessary to consider the risks of not developing the HRGBMS (**Table 2**).

Table 2. Risks and impacts of not implementing the HRGBMS.

Risk	Potential Impact(s)
Inconsistent weed management approach across LCAs and public land managers	<ul style="list-style-type: none"> • No nett loss or increase in groundsel bush infestations • Spread of groundsel bush from one land manager to another (creating a resource and management burden)
Ad-hoc weed management	<ul style="list-style-type: none"> • Likely inability to achieve the goals within the region
Resource burden	<ul style="list-style-type: none"> • Inequity across groups (LCAs and public land managers) • Variable weed management standards and available materials
Variable dissemination of information and co-operation between LCAs and public land managers	<ul style="list-style-type: none"> • Delayed information flow between strategic stakeholder organisations • Limitations on the actual distribution, treatments and control methods for the species

5.1.2 Benefit of 10-year strategy

- Cost of localised eradication would blow-out if not controlled while groundsel bush is still limited in its distribution.
- Cost to conservation, agriculture, asset management, and other land uses if allowed to spread.
- Increase in conservation value and agricultural value.
- A shared timeline for groundsel bush localised eradication and eventual planned regional eradication see **table 3**.

Table 3. Hunter Regional Groundsel Bush Management Strategy project timeline

Key Project Milestones	Year									
	1	2	3	4	5	6	7	8	9	10
Stakeholder engagement plan										
Year 1 eradication in high priority sites										
Year 2 eradication in high priority sites										
Year 3 eradication in high priority sites										
Ongoing inspections (private and public land)										
Monitoring and reporting										
Year 3 evaluation of high priority sites (including aerial and onground mapping)										
Implementation of year 4 to 10 (eradication in marginal areas)										
Year 5 assessment (including aerial and onground mapping)										
Program midway evaluation										
Year 10 assessment (including aerial and onground mapping)										
Year 10 evaluation										

5.2 Legislation

5.2.1 New South Wales legislation

Under the Biosecurity Act 2015, groundsel bush is listed as a **Regional Priority Weed** within the Hunter Regional Weed Strategic Management Plan with the objective of **CONTAINMENT** to the core areas, and the aim of **ERADICATION** outside of the core. ERADICATION in this context is defined:

“To permanently remove a weed species and its propagules from an area such that there is little or no likelihood of re-invasion occurring”.

5.2.2 General Biosecurity Duty

All plants are regulated with a **general biosecurity duty** (GBD) to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know)

of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

Outcomes to demonstrate compliance with the GBD

Whole of region:

- The plant or parts of the plant are not traded, carried, grown or released into the environment

Outside of core area:

- The plant should be eradicated from the land and the land kept free of the plant.
- Notify the relevant Local Control Authority if found.

Within core area:

- Land managers mitigate the risk of the plant being introduced to their land.
- Land managers mitigate the risk of the plant spreading from their land.

The Hunter Regional Groundsel Bush Management Strategy provides the framework and direction to provide a legal, logical and considered approach to meeting the Biosecurity Duty.

5.3 Control

5.3.1 Methods

Various methods for control of groundsel bush have been tried and tested throughout the Hunter region by weeds professionals. The current best practice methods for control have been extracted from the NSW Weed Control Handbook (NSW DPI, 2018) in **table 4**. The most appropriate control method(s) will vary depending on factors at each individual site, including number and size of plants, seasonal timing, and environmental considerations.

Table 4. Groundsel bush control methods (extract from NSW Weed control Handbook).

Chemical	Concentration Rate	Comments
Non-chemical option	N/A	Small plants can be manually removed, ensuring total root elimination.
Glyphosate 360 g/L Roundup®	700 mL to 1.0 L per 100 L of water	Actively growing bushes. Do not apply during winter or summer drought stress.

Glyphosate 360 g/L Roundup®	1 part per 9 parts water	Gas gun / Splatter gun application. Apply 2 x 2 mL doses per 0.5 m of bush height
Picloram 100 g/L + Triclopyr 300 g/L + Aminopyralid 8 g/L Grazon Extra®	250 or 350 mL in 100 L of water	Use lower rate on bushes 1–1.5 m high in spring and summer; use higher rate on bushes over 1.5 m high in the autumn.
Picloram 44.7 g/kg + Aminopyralid 4.47 g/L Vigilant II®	Undiluted	Cut stump/stem injection application. Apply a 3–5 mm layer of gel for stems less than 20 mm. Apply 5 mm layer on stems above 20 mm.
Triclopyr 240 g/L + Picloram 120 g/L Access™	1.0 L per 60 L of diesel	Basal bark/cut stump application.

5.3.2 Frequency and schedule

The frequency and schedule of control should be informed by the plant's growth calendar (**table 5**) and seasonal effectiveness of herbicide. Treatment should occur twice annually between October and April at high priority and marginal infestations.

Table 5. Groundsel bush growth calendar.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flowering												
Seed formation												
Seed drop												
Germination												
Treatment												

General pattern of growth

Growth pattern in suitable conditions

Treatment

6. The 5-year strategy

6.1 Eradicate (High Priority Sites) in the Hunter Region - Immediate priority

The immediate priority action of the plan is to focus on eradication of high priority sites (**Table 1**) **within 3 to 4 years**. These infestations will receive intensive management through inspections and treatments for sites on all tenures including National Parks and Wildlife Services (NPWS), Transport for NSW (TfNSW), ARTC, Crown Land, Council land, and private land. These infestations are deemed eradicable in the immediate future (**Table 6**).

6.1.1 Responsibilities

As prescribed under the Biosecurity Act 2015, it is the responsibility of each landowner/manager to fund treatments of groundsel bush on their land. However, through the adoption of this plan, there may be assistive funding available for high priority sites as part of the Hunter region's Weeds Action Program (WAP) 2020 - 2025 grant. This can be applied for via the Hunter Regional Weeds Committee on a case-by-case basis.

It is the responsibility of each LCA to inspect, map, record and report (via BIS) all groundsel bush inspections and treatments within their respective LGA. It is the responsibility of all other public and private land managers to allow for inspections to occur on their land. In the case of public land managers, any available groundsel bush data will be encouraged to be shared with the Hunter Regional Weeds Committee. This co-operation will provide a more streamlined information flow, will assist with mapping the true distribution, and will ultimately achieve a more strategic management of the species in the region.

Table 6: High priority sites eradication

HIGH PRIORITY SITES			
Goal	Objective	Target	Responsible
Eradication - To completely exhaust soil seed bank by preventing seed set within this zone by controlling every plant through an intensive management program. Ensure new seed is not set, and new infestations are not establishing through natural, accidental or deliberate movement.	Continually treat and eradicate groundsel bush at all known locations.	A total of two (2) treatments and inspections to be carried out at all known infestations annually . Once in January - March and once in October - December .	All private and public land managers
	Conduct regular inspections on private and public sites.	Ensure stakeholder compliance and control on all high priority sites.	LCAs
	Raise awareness to affected and non-affected property	Develop and distribute communications to landholders. Ensure compliance on	LCAs

HIGH PRIORITY SITES	
owners through targeted inspections, education and communications.	privately owned high priority sites is followed through by property owners.

6.2 Eradicate (Medium Priority) marginal infestations in the Hunter Region - Short-term priority

The short-term priority action of this plan is to eradicate all marginal infestations **within 6 years (Table 7)**. These infestations must be contained, and an inspection, treatment, and education program will be the focus. The education program will be delivered by the responsible LCAs and driven by the Hunter Regional Weeds Committee. Groundsel bush is not widely distributed here, and isolated groups of infestations are eradicable in the second phase of the plan. Eradication in high priority sites will allow the relevant LCAs and public land managers to increase their focus in marginal areas and drive these sites towards eradication. This will facilitate increased marginal site management by freeing up resources and funding previously spent on high priority sites.

Table 7: Medium priority eradication of groundsel bush

MARGINAL AREAS			
Goal	Objective	Target	Responsibility
Work towards eradication - To reduce distribution and density, and ensure new seed is not set. Ensure new infestations are not establishing through natural, accidental or deliberate movement.	Conduct regular treatments on all known groundsel bush sites.	A total of two (2) treatments and inspections to be carried out at all known marginal locations annually . Once in January - March and once in October - December .	All private and public land managers
	Conduct regular inspections on privately and publicly owned sites.	Develop annual groundsel bush inspection program for each LGA. Ensure stakeholder compliance and control.	LCAs
	Raise awareness to affected and non-affected property owners through targeted inspections and communications.	Develop and distribute communications to landholders. Ensure compliance on privately owned properties is followed through by property owners.	LCAs

7. The 10-year strategy

7.1 Contain core (Low Priority) infestations in the Hunter Region - Long-term priority

The long-term priority of this plan is to contain core infestations and prevent any spread out to areas that are unaffected by groundsel bush in **10+ years (Table 8)**. This will contribute to the goal of eventually eradicating all core infestations. Further planning will be required to assist the

implementation of core infestation eradications, which will be based on outputs of monitoring high priority sites and marginal infestations.

The core areas will be the subject of an eradication plan which will require additional funding to be leveraged. Focus will be the responsibility of The Hunter Regional Weeds Committee, which will continue to drive treatment and inspection programs aimed at containment while an eradication plan for these two core areas is developed and funded. These infestations must be contained, and an education program will also be a primary focus.

Table 8: Low priority eradication

CORE AREAS			
Goal	Objective	Target	Responsibility
Containment – Contain infestations while an eradication plan for the core is developed and funded . To protect significant environmental and Primary Industry assets , preventing spread out of and within the core to sites that are unaffected by groundsel bush.	Conduct regular treatments on all known groundsel bush sites.	One (1) treatment and inspection to be carried out at all known locations prior to plants setting seed (in March) each year.	All private and public land managers
	Ensure stakeholders within this zone remain engaged and vigilant in control of the weed.	Raise awareness to affected and non-affected property owners through targeted communications.	LCAs
	Undertake scheduled inspections on private land to ensure plant population is controlled prior to seeding.	Develop annual groundsel bush inspection program for each LGA.	LCAs
Planning – Ongoing work towards funding and developing an eradication plan for the core infestation areas.	Undertake planning for total eradication within core infestation areas.	Include outputs from monitoring of treatment of outlier and marginal areas to inform planning of treatment in core areas.	Hunter Regional Weeds Committee

8. Stakeholder & Community Engagement Plan

A comprehensive stakeholder and community engagement plan is required to implement the HRGBMS. As many infestations are located on public land, engagement of public land managers is crucial to achieving eradication of groundsel bush.

Community-based social marketing (CBSM) has been identified as an effective community strategy. CBSM involves direct contact with people and is carried out at the community level.

Community engagement will encourage active involvement and behavioural changes. Volunteer activities (e.g. National Parks, Bushcare/Landcare Groups) can contribute to a positive return on investment.

8.1 Plan objectives

The objectives of the stakeholder and community engagement plan are to:

- Educate stakeholders (particularly public land managers and the general community) about groundsel bush, the management project and management actions.
- Maximise stakeholder and community engagement.
- Maximise private landholder compliance.
- Maximise involvement of the community to assist in identifying infestations and undertake control on private property.

8.2 Project partners and key stakeholders

The key project partners and key stakeholders have been identified. Project partners will assist in the delivery and implementation of the strategy. Primary stakeholders will be the targeted audience for engagement. There may be some overlap in these roles, depending on the level of involvement of each partner/stakeholder. All public land managers with groundsel bush infestations on their land will be encouraged to be active members of the Hunter Regional Weeds Committee, and therefore a primary project partner in this instance.

8.2.1 Primary project partners

The primary project partners include:

- Impacted Councils (City of Newcastle, Lake Macquarie City Council, Port Stephens Council, Mid-Coast Council, Cessnock Council and Maitland City Council)
- Hunter Regional Weeds Committee and Hunter Weeds Technical Team
- NSW Department of Planning, Industry and Environment
- Public land managers (represented on the Hunter Regional Weeds Committee)

8.2.2 Primary stakeholders

The primary stakeholders to be targeted include:

- Private Landholders in the affected areas
- NSW National Parks and Wildlife Service
- Hunter Local Land Services
- ARTC
- Transport for NSW
- Sydney Trains
- TAFE NSW (Metford Campus)

8.3 Engagement techniques for primary project partners

Table 1: Engagement techniques – primary project partners

Activity	Stakeholders involved	Tools/actions	Key messages/actions	Who is responsible	Timeframe
Hunter Regional Weeds Committee meeting	<ul style="list-style-type: none"> All primary project partners 	<ul style="list-style-type: none"> Establish groundsel bush management group Schedule groundsel bush workshop session/s 	<ul style="list-style-type: none"> Encourage joint ownership of the plan Encourage co-operation Encourage sharing of distribution data 	<ul style="list-style-type: none"> Hunter Regional Weeds Committee Public Land Managers Councils 	<ul style="list-style-type: none"> Next available HRWC meeting Ongoing
Initial Workshop/Meeting	<ul style="list-style-type: none"> Councils All other primary project partners 	<ul style="list-style-type: none"> Hold an initial workshop/meeting to communicate the plan to local councils and other project partners. 	<ul style="list-style-type: none"> Ensure all parties understand the strategy Encourage collaboration 	<ul style="list-style-type: none"> Hunter Regional Weeds Committee 	<ul style="list-style-type: none"> Prior to starting work
Information material	<ul style="list-style-type: none"> Councils All other primary project partners 	<ul style="list-style-type: none"> Compile and distribute information material to project partners. 	<ul style="list-style-type: none"> Encourage co-operation Encourage sharing of distribution data 	<ul style="list-style-type: none"> Hunter Regional Weeds Committee LCAs 	<ul style="list-style-type: none"> Prior to starting work Annual reports
Ongoing dialogue, collaboration and reporting	<ul style="list-style-type: none"> Councils All other primary project partners 		<ul style="list-style-type: none"> Encourage ongoing involvement and engagement from all project partners 	<ul style="list-style-type: none"> Hunter Regional Weeds Committee 	<ul style="list-style-type: none"> Ongoing throughout lifespan of project Annual meetings


8.4 Engagement techniques for primary stakeholders

Community engagement practises can cover five broad levels of engagement: informing, consulting, involving, collaborating and empowering (**table 9**).


Table 2: Engagement techniques – primary project stakeholders

Activity	Stakeholders involved	Level of engagement	Tools/actions	Key messages/actions	Who is responsible	Timeframe
Hunter Regional Weeds Committee meetings	All public land managers	<ul style="list-style-type: none"> Consult Collaborate Empower 	<ul style="list-style-type: none"> Establish groundsel bush management group Conduct groundsel bush focus sessions 	<ul style="list-style-type: none"> Encourage joint ownership of the plan Encourage co-operation Encourage sharing of distribution data 	Hunter Regional Weeds Committee Public Land Managers Councils	<ul style="list-style-type: none"> Next available HRWC meeting Ongoing
Community Forums (targeted)	All private landholders directly affected or potentially affected Public land manager staff requiring further advice/assistance	<ul style="list-style-type: none"> Inform Involve 	<ul style="list-style-type: none"> Organise community forum Set at time/s suitable for the community Advertise widely Provide opportunity for landholders to contact relevant LCA officer Hold a barbeque to thank attendees Invite local media 	<ul style="list-style-type: none"> Encourage co-operation Provide information Offer ongoing advice/assistance 	All relevant LCAs (Weeds and Biosecurity Officers)	<ul style="list-style-type: none"> During high priority sites eradication program (Year 1) During marginal areas eradication program (Years 4 - 5)
Presence at relevant community events	Private landholders	<ul style="list-style-type: none"> Inform Involve 	<ul style="list-style-type: none"> Select community events in the Hunter region (e.g. Lake Macquarie Living Smart Festival, Tocal Field Days) Assign experienced Officer/s to attend event to disseminate information and materials 	<ul style="list-style-type: none"> Encourage co-operation Provide information 	All relevant LCAs (Weeds and Biosecurity Officers)	<ul style="list-style-type: none"> Throughout high priority sites eradication program (Years 1 – 3) Throughout marginal areas eradication program (Years 4 – 10)

Activity	Stakeholders involved	Level of engagement	Tools/actions	Key messages/actions	Who is responsible	Timeframe
Working bees	<ul style="list-style-type: none"> Private landholders Landcare/Bushcare groups National Parks volunteer groups 	<ul style="list-style-type: none"> Inform Involve Collaborate 	<ul style="list-style-type: none"> Facilitate working bees in infestations, advertise widely in local media and social media. Support Bushcare groups currently working in areas with groundsel bush Hold a barbeque to thank attendees Invite local media 	<ul style="list-style-type: none"> Encourage participation Provide information Offer ongoing advice/assistance 	NPWS staff if working in National Parks Landcare/Bushcare staff (Council/private land) All relevant LCAs (Weeds and Biosecurity Officers)	<ul style="list-style-type: none"> Throughout high priority sites eradication program (Years 1 – 3) Throughout marginal areas eradication program (Years 4 – 10)
Educational and survey material	<ul style="list-style-type: none"> All members of the public 	<ul style="list-style-type: none"> Involve Inform Collaborate 	<ul style="list-style-type: none"> Provide survey material to provide residents with an opportunity to report infestations on their property. See example given in Figure 4. Provide information material to inform residents about control options. 	<ul style="list-style-type: none"> Encourage participation Provide information Offer ongoing advice/assistance 	All relevant LCAs (Weeds and Biosecurity Officers)	<ul style="list-style-type: none"> Throughout high priority sites eradication program (Years 1 – 3) Throughout marginal areas eradication program (Years 4 – 10)
Social media marketing	<ul style="list-style-type: none"> All members of the public 	<ul style="list-style-type: none"> Inform 	<ul style="list-style-type: none"> Include educational material and promote events on social media. Events can be advertised prior, or outcomes of events can be promoted. 	<ul style="list-style-type: none"> Encourage participation Provide information Offer ongoing advice/assistance 	All participating organisations social media teams	Throughout life of project



*Cats Claw Creeper
Survey*



Six Mile Creek Catchment Cats Claw Creeper Vine Survey

Please complete this survey advising if you have Cats Claw Creeper vine on your property within the Six Mile Creek catchment.

Name *

Address *

City

State / Province / Region

Postal / Zip Code

Phone * **Email**

Lot on Plan

Do you have Cats Claw Creeper vine on you property?

☒ Yes I have Cats Claw Creeper
☐ No I don't have Cats Claw Creeper
☐ I'm not sure if I have Cats Claw Creeper

Comments or Questions

Privacy

PRIVACY STATEMENT: In providing any personal information, please note that you are agreeing to the possible transfer of your information outside Australia via the internet under s33 of the Information Privacy Act 2009. If for any reason you are unable to agree to these terms, please contact Council on 1300 307 800 to discuss alternate arrangements. Thank you for taking the time to provide your feedback.

Figure 4. Example of community survey for weeds

8.5 Engagement achievements

Engagement achievements should be evaluated to measure success and allow an adaptive approach.

Evaluation of success of engagement activities can include:

- Have objectives been met?
- Assessment of who attends events.
- Were the key stakeholders engaged?
- Evaluation of the activities: what was the response? Were there any positive or negative outcomes?

Results of this evaluation should be included in the annual report and subject to adaptive management.

8.6 Barriers to engagement

Differing motivations for involvement - The motivation of the stakeholder and organisation to enter dialogue may be different. Understanding this difference and attempting to bridge the gap through appropriate accommodation is a key step in building meaningful relations.

<https://www.fundacionseres.org/lists/informes/attachments/1118/stakeholder%20engagement.pdf>

The following issues, alone or in combination, can represent material and significant risk to the building of trust between an organisation and stakeholders:

- The engagement process lacks a clear purpose.
- Participants have unrealistic goals and are inflexible and unwilling to compromise.
- There are differences in philosophies and ways of working.
- There is a lack of communication between stakeholders.
- Participants have hidden agendas.
- There is an overall lack of 'know-how' and 'know-who'.

9. Monitoring, Evaluation, Reporting and Improvement Strategy

9.1 Monitoring

Monitoring, evaluation, reporting and improvement (MERI) strategies are a key part of a successful management strategy (**Figure 5**; COA 2009). MERI allows the success and failures of management to

be quantified and evaluated which can be reported and incorporated into adaptive management and program improvement to achieve positive environmental outcomes and return on investment.

Measurable goals provide a criterion which results of monitoring can be evaluated against. Satisfaction of the criteria will demonstrate the methods success or failure and provide a basis for improvement.

Groundsel bush treatment data will be entered into the Biosecurity Information System (BIS) by the respective Local Control Authority (LCA).

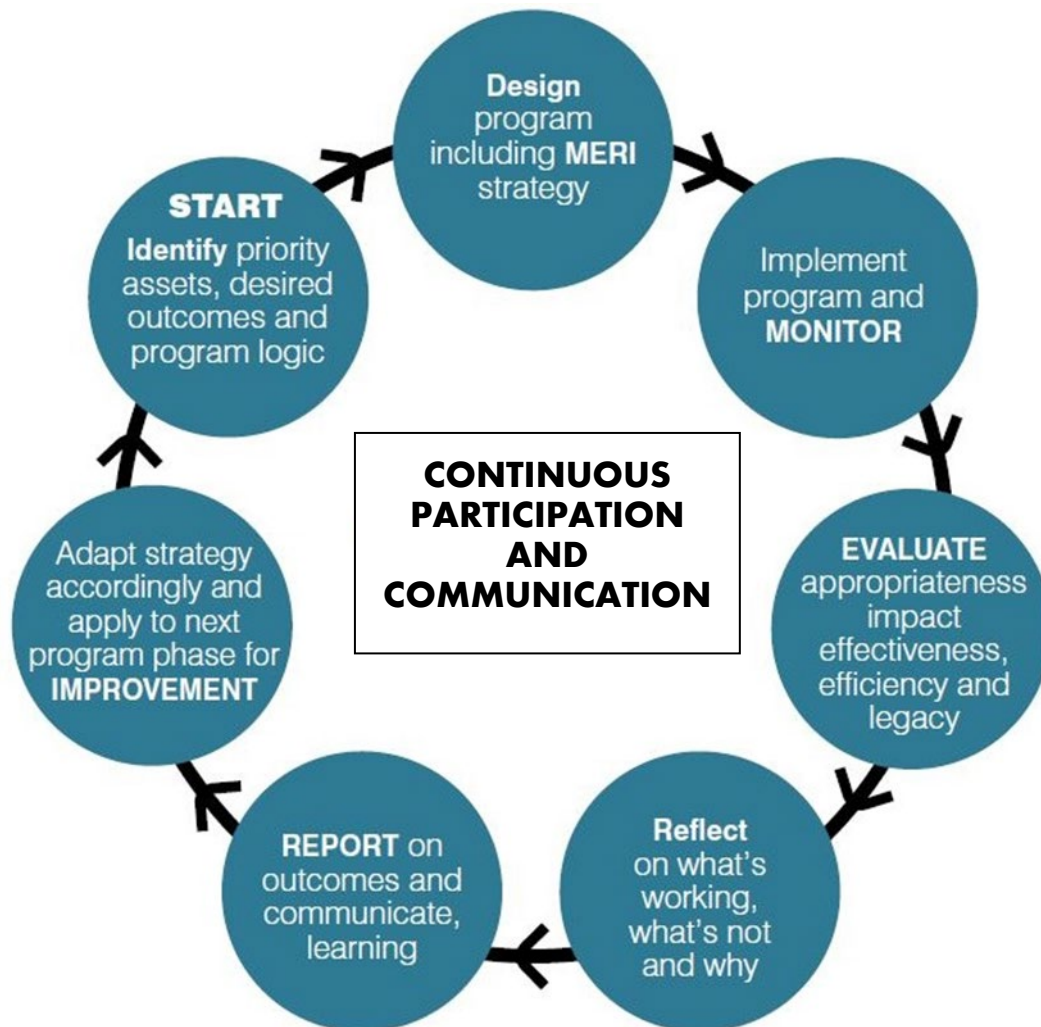


Figure 5. Program improvement and adaptive management approach to MERI (COA 2009).

9.1.1 Monitoring methods

The following methods have been developed for consistent monitoring:

- Data collected in the field will be based on input data consistent with the Biosecurity Information System (BIS).

- Monitoring sites should be defined by each relevant LCA's mapping software/tools.
- At each monitoring site, the following data must be recorded:
 - Date of activity
 - Location (Lat/Long)
 - Estimated area infested (ha)
 - Number of plants present
 - Estimated density of groundsel bush (% cover)
 - Weed status (e.g. in flower/setting seed/seedlings)
 - Details of treatment method/s undertaken (as per legislative requirements)

Monitoring and treatments should be undertaken **two (2) times annually** in high priority sites and marginal areas.

9.2 Evaluation

Quantitative evaluation can be undertaken using results from monitoring.

- What sites have been treated/inspected?
- Change in estimated cover of groundsel bush.

The Hunter Regional Weeds Committee will carry out periodic assessment of the appropriateness of the HRGBMS project that will include evaluation processes to help improve performance, fulfil accountability requirements and to collate learning to inform future programs.

9.2.1 Key evaluation questions Evaluation questions

9.2.1.1 Evaluation questions for groundsel bush control

Key evaluation question	Evidence
What % of high priority sites have been treated/inspected?	Record area of control in BIS database including GIS location.
What % of marginal sites have been treated/inspected?	Record area of control in BIS database including GIS location.
Is the treatment effective?	Changes in groundsel bush cover. Information recorded in reports.
Were there any other unanticipated, positive or negative change or other outcomes?	Record information in reports.

Key evaluation question	Evidence
To what extent has the work plan and targets been achieved? Why? Why not?	Record the achievement of the work plan and document deviations through standard reporting formats and quarterly reporting.
Were targets achieved and management/implementation effective?	
What area of control measures have been undertaken for groundsel bush?	

9.2.1.2 Evaluation questions for engagement plan

Key evaluation question	Evidence
To what extent has the engagement plan been achieved?	Record the achievements of the engagement plan and document deviations through standard reporting formats and quarterly reporting.
Have objectives been met?	
Assessment of who attends events	
Were the key stakeholders engaged?	
Evaluation of the activities	What was the response? Were there any positive or negative outcomes?

9.3 Reporting, Improvement and Adaptive Management

The Hunter Regional Weeds Committee will provide regular reflection on collated monitoring results, strategies, management processes and progress to inform an adaptive management approach for continuous quality improvement of the project. A brief report will be prepared annually by Maitland City Council with contributions from other organisations involved. Reports should be used internally to assess progress and will also be made available to funding bodies. Note that funding bodies may also have their own reporting requirements which should be incorporated.

The suggested contents of the report are:

- Introduction
 - Brief introduction to the progress of the project
- Methods
 - Treatment methods
 - Monitoring methods
- Results
 - Outcomes from monitoring

- Changes in % cover?
- Any new infestations found?
- Discussion
 - How are the treatments performing? Are they suitable?
 - Should the methods remain in use? Do any changes need to be made?
- Conclusion
 - Summary of recommendations to the ongoing project.