Mareeba
SHIRE COUNCIL

Mareeba Shire Community Biosecurity Plan

2020 - 2025

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Acronyms

BSO	Biosecurity Security Order
DAF	Department of Agriculture and Fisheries
DNRME	Departments of Natural Resources Mines and Energy
FNQROC	Far North Queensland Regional Organisation of Councils
HEV	High Environmental Value
MSC	Mareeba Shire Council
MSCBP	Mareeba Shire Community Biosecurity Plan
MLGA	Mareeba Local Government Area
NAMAC	Natural Asset Management Advisory Committee
NRM	Natural Resource Management
NTWEP	National Tropical Weed Eradication Program
PMAC	Pest Management Advisory Committee
WONS	Weeds of National Significance

1. Biosecurity Plan and Overview

The aim of the Mareeba Shire Community Biosecurity Plan (2020-2025) is to unite efforts across all sectors of the local community by providing a framework for effective and targeted biosecurity management within the Mareeba Local Government Area (MLGA). This plan supersedes the Local Area Pest Management Plan (2015-2020).

The Plan uses a risk-based approach to;

- Assist in the prioritisation of resources to manage invasive plants and animals;
- Develop management strategies for high priority invasive plants and animals which occur, or might occur, within the MLGA;
- Provide management outcomes for specific high priority species; and
- Provide for the preservation and enhancement of the natural environment and liveability of the MLGA.

The plan complements existing key projects and programs delivered with the involvement of the community, organisations and varied partnerships which seek to promote biosecurity awareness to enhance the local communities understanding, with the aim of identification, removal and eradication of invasive plants and animals.

The Far North Queensland Regional Organisation of Councils (FNQROC) Biosecurity Risk Assessment and Planning Framework was used to develop action plans for invasive species control recommendations.

These action plans have been developed with consideration to management priority, knowledge of distribution, feasibility, achievability, existing and potential impacts on the biosecurity considerations (human health, social amenity, the economy or the environment) in the MLGA.

In addition, the plan summarises areas of species management responsibilities for individuals, agencies and organisations, while providing landholders with strategic direction and mechanisms to assist with setting priorities for invasive plants and animal management.

Vision

A Community unified in managing biosecurity risks to the Mareeba Local Government Area

To achieve the stated vision, the following desired outcomes have been established;

1. Stakeholders are informed, knowledgeable and have ownership of invasive plants and animal management.
2. All stakeholders are committed and undertake coordinated management of invasive plants and animals.
3. Strategic directions are established, maintained and owned by all stakeholders.
4. The introduction, establishment and spread of invasive plants and animals are prevented.
5. Integrated systems for managing the impacts of established invasive plants and animals are developed and widely implemented.



Photo 1 Hot Air Ballooning over Mareeba

2. Introduction

Mareeba Shire is located on the Northern Tablelands which supports a great diversity of regional ecosystems and environmentally sensitive areas. It straddles the three bioregions of the Wet Tropics, the Einasleigh Uplands and Cape York.

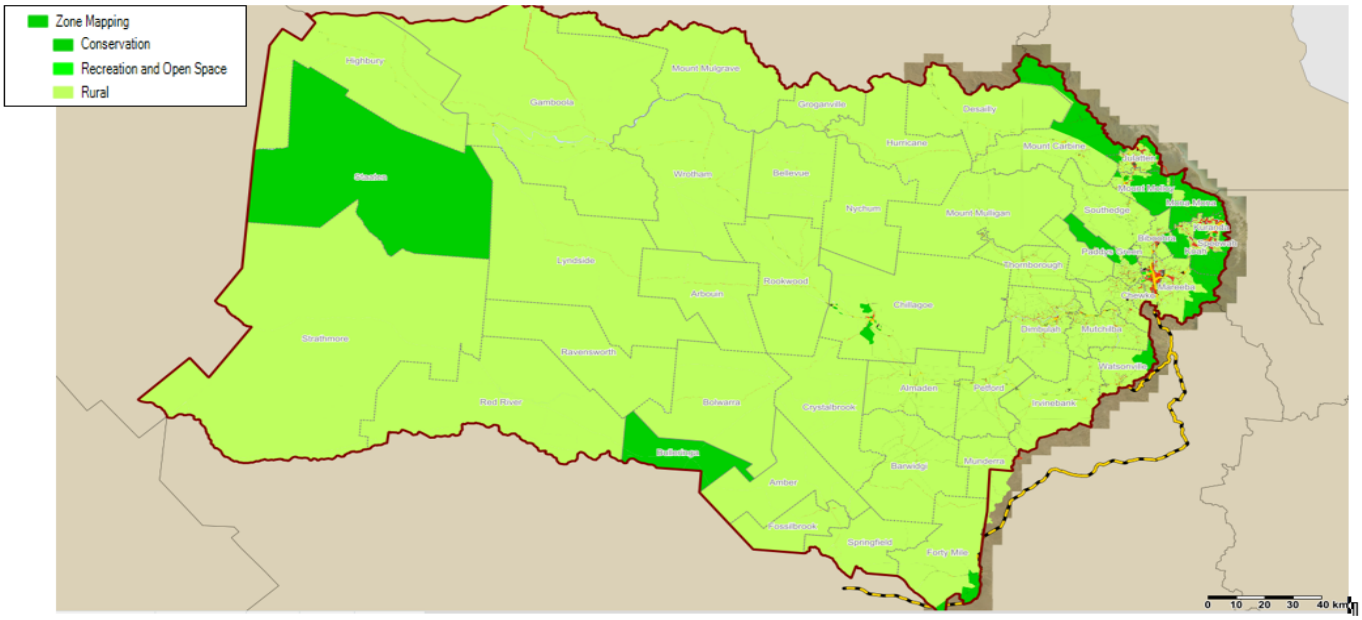
The MLGA contains important landscape linkages for biodiversity of tropical rainforests, open eucalypt woodlands and dry savannah country, including a network of important riparian corridors and waterways.[1]



Photo 2 Barron Falls, Kuranda

3. Protecting the Regions Assets and Environment

The Mareeba Shire stretches across the base of Cape York Peninsula, and comprises rural and remote agricultural communities in an area of 53,502m2,[2] approximating the size of Tasmania. The MLGA had an estimated resident population of 22,517 as at 30 June 2018.[3]



Map 1 Mareeba Local Government Area

[1] http://plan.northerngulf.com.au/northerntablelands/

[2] Compiled and presented in economy.id®. http://economy.id.com.au/fnqroc

[3] profile.id.com.au/fnqroc/population-estimate

3.1 Protecting Agricultural Lands

Mareeba's agriculture sector generates employment, income and business growth and positions the MLGA as the key contributor to making the Far North region the third largest fruit producing region in Australia[4]. It is important for landholders and key stakeholders to have a collaborative approach when setting priorities for invasive plants and animal management on affected properties.

3.2 Protecting Grazing Lands

Part of the region's land area is used for grazing which is essential for livestock production. Grazing lands generally support native vegetation;[5] however, these have been altered by invasive plants and animals. Early detection and response to new and emerging risks, thereby reducing the impacts of established invasive plants and animals will help safeguard the MLGA's grazing enterprises.

3.3 Protecting our Inland Waters and Environmentally Sensitive Areas

The MLGA inland waterways (rivers, creeks, and wetlands) have an inherent value to the broader community, environment and the economy. These waterways are unique and form part of an inland water system flowing both to the Gulf of Carpentaria and the Great Barrier Reef.

If managed properly, healthy inland waters will maintain environmental, economic, cultural and recreational values without compromising the aquatic and ecological biodiversity that these freshwater systems also support.[6]



Photo 3 Mareeba Wetlands

3.4 Protecting Community, Residential and Tourism Values

MSC recognises that [7]sustainability is more than looking after the natural environment and assets, it's also about considering the social and economic impact of what we do as a community.

Providing the community with residential spaces, parklands and gardens, is an important part of the MLGA, its where people live, work and relax, whilst being able to continue the connections between people, culture and nature.

This area is rich in history attracting locals and tourists to visit the region, which is



Photo 4 Kuranda

[4] Cunningham-Reid. A., Mareeba Shire Demographic and Socioeconomic Profile 2018

[5] http://plan.northerngulf.com.au/grazinglands/

[6] plan.northerngulf.com.au/inland-waters/

reflected by relatively high visitor and international worker population, further supporting the local economy.

The implementation of this plan will assist in contributing to the long-term protection of the local environment, ecosystems and attractions, by working with the community and stakeholders to keep the environment free from invasive plants and animals for future generations to enjoy and appreciate.



Photo 5 Chillagoe

3.5 Engaging with Stakeholders

The plan recognises the importance of a collaborative approach between key stakeholders and community organisations involved in the management of invasive plants and animals in the MLGA.



Figure 1 Collaborative Network of Stakeholders

The aim of biosecurity engagement is to capture concepts, principles, ideas and share information for the planning and management of invasive plants and animals; and to

- Build relationships with an emphasis on community engagement;
- Determine goals, management and resourcing; and
- Monitoring of projects and programs.

4. Queensland Biosecurity Act

The Queensland Biosecurity Act 2014 (the Act) requires each local government in Queensland to produce a Biosecurity Plan that prioritises invasive plants and animals, ensuring that the highest priority species are targeted and managed.

The Act provides guidance on the management of non-native plants and animal species and uses the term 'biosecurity matter' to describe all non-human living things. Biosecurity matter is divided into prohibited matter and restricted matter.

Under the Act, local governments are only required to consider 'Prohibited' or 'Restricted' invasive plants and animals within the biosecurity plan.

However, other invasive plants and animals which may have the potential to impact the local government area can also be considered, these can include; invasive plants and animals such as exotic (not native to Australia) or native species which are not naturally occurring within the MLGA area.

4.1 Prohibited Matter

"Prohibited" matter refers to matter not currently established in Queensland but has the potential for harmful impact on human health, social amenity, the economy and natural environment.

All Queenslanders, as well as visitors from interstate and overseas need to be aware and take steps to prevent prohibited matter from entering Queensland. Individuals, the community, businesses and organisations should know about prohibited matter that may be present in the environment, or as part of a business or hobby.[8]

To report prohibited matter contact Department of Agriculture and Fisheries on 132 523.

More information on prohibited plants is available at:
https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/land-management/health-pests-weeds-diseases/weeds-diseases/invasive-plants/prohibited

More information on prohibited animals is available at:
https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/land-management/health-pests-weeds-diseases/pests/invasive-animals/prohibited

4.2 Restricted Matter

"Restricted" matter is a biosecurity matter found in Queensland which has a significant impact on human health, social amenity, the economy or the environment. These invasive plants and animals are having significant impacts in Queensland and it is desirable to manage them and prevent their spread, thereby protecting un-infested parts of the State.

4.2.1 Categories of restricted matter

There are seven categories for restricted matter, which are presented in Table 1 below. Each category places restrictions on the dealings with the biosecurity matter or requires actions to be taken to

[8] www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/biosecurity-act-2014/biosecurity-matter-report/prohibited-matter

minimise the spread and adverse impact of the biosecurity matter. There are specific actions that are required to limit the impact of Restricted Matter by reducing, controlling or containing it.

Table 1 Restricted Matter

Category	Reporting Requirements	Examples
Category 1	must be reported to a Queensland Government inspector within 24 hours	Includes: electric ants, Asian honeybees, certain animal and aquatic diseases.
Category 2	must be reported to a Queensland Government inspector or local government authorised officer	Includes certain noxious fish, invasive plants and animals such red-eared slider turtle.
Category 3	must not be distributed. This means it must not be released into the environment unless the distribution or disposal is authorised by a regulation or under a permit.	Includes all invasive plants and animals where deliberate distribution or disposal is a key source of spread of invasive plants, animals and noxious fish.
Category 4	must not be moved	Includes specific invasive plants and animals, such as; (Siam weed), noxious fish, feral pigs.
Category 5	cannot be possessed or kept, unless it is under a permit issued in accordance with the Act or another act.	Invasive plants and animals and noxious fish e.g. miconia, rabbits and carp
Category 6	must not be fed except for the purpose of preparing for or undertaking a control program	Invasive animals such as feral deer, rabbits, wild dogs and noxious fish such as carp, and tilapia.
Category 7	must be destroyed and disposed of as soon as practicable in accordance with Queensland Government requirements.	Noxious fish such as carp and tilapia.

4.3 General Biosecurity Obligation

The General Biosecurity Obligation (GBO) is one of the core principles of the Biosecurity Act and represents a major shift in thinking – from prescriptive to outcome-based management. This means that everyone has a responsibility for managing biosecurity risks.

4.4 Biosecurity Risks and Biosecurity Events

Responsibilities under the GBO, biosecurity risks and biosecurity events are determined by the following:[9]

A biosecurity risk is the risk that exists when you deal with:

- any pest, disease or contaminant;
- something that could carry a pest, disease or contaminant (e.g. animals, plants, soil, equipment—known as 'carriers');

A biosecurity event is an event that:

- has, or may have, a significant harmful effect on human health, social amenity, the economy, or the environment; and
- is caused by a pest, disease or contaminant.

[9] https://www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/biosecurity-act-2014/general-biosecurity-obligation

4.5 Biosecurity Risks

The GBO is an overarching obligation that requires all persons who deal with biosecurity matter, or a carrier, to take all reasonable and practical measures to prevent or minimise the risk. However, the obligation only arises when the person *knows or ought reasonably to know* that the biosecurity matter, carrier or activity poses or is likely to pose a biosecurity risk.

For example:[10]

- A commercial grower should stay informed about the pests and diseases that could affect or be carried by crops, as well as invasive plants and animals that could be on the property;
- A livestock owner should stay informed about pests and diseases that could affect or be carried by animals, as well as invasive plants animals that could be on the property;
- A landowner should stay informed about the invasive plant's animals (such as wild dogs) that could be on the property;
- For the transportation of agricultural produce, checks should be made as to whether the activity could pose a risk for the spread of diseases or pests;
- For areas where people live or work in a high biosecurity zone (e.g. a builder or developer might be in the fire ant biosecurity zone), the requirements of what precautions need to be made for the controls of what cannot be moved into and out of the zone need to be taken into consideration; and
- A residential gardener should know about the biosecurity risks that might affect their plants.

4.6 What are reasonable and practical steps?

The steps that are considered reasonable and practical will vary depending on the situation and the risks involved. Key factors include:

- How likely an activity is to pose a risk, the more likely it is, the more action is required;
- How harmful an activity could be (e.g. whether it could cause human deaths, extensive productivity losses or other significant economic or community losses;
- How much the person managing the activity knows, or should reasonably be expected to know, about the risk (e.g. how dangerous it is and how it is spread);
- What methods are available to minimise the risk (e.g. equipment and work practices;

Information is widely available on reasonable and practical steps that can be taken to meet the GBO for many common pests and diseases (e.g. on government and industry websites).

4.7 Measures to Reduce Biosecurity Risks

In most cases, biosecurity risks can be reduced by following simple steps. For example:[11]

- Manage pests (e.g. invasive plants and wild dogs) and diseases that could have negative impacts on neighbouring properties;
- Carefully examine animals before moving them. Moving animals will pose a biosecurity risk if they are carrying pests or diseases that could adversely affect the environment or agricultural

[11] https://www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/biosecurity-act-2014/general-biosecurity-obligation

industries. Check for animal diseases that could be spread by contact with other animals, and for invasive plant seeds;

- Closely inspect pot plants and potting mix before taking them home. They will pose a biosecurity risk if they are carrying yellow crazy ants or electric ants, or plant pests, invasive plants or diseases that are not already present in a suburb or area.

5. Biosecurity Planning

5.1 Landowners Property Planning

Landowners are encouraged to, and benefit from, preparing Pest Management Plans for land under their control.

Benefits of planning:[12]

- Property owners are encouraged to effectively control invasive plants and animals;
- Comply with invasive plant and animal laws in Queensland;
- Integrate control activities and other components of a property plan;
- Coordinate control activities with neighbours;
- Improve efficiency by ensuring control activities are prioritised and resources are used at optimal times;
- Monitor how well control activities are working;
- Report progress to funding bodies and local governments.

Other control methods include:

- Provide and maintain access for pest control programs;
- Participate in baiting and trapping programs;
- Reduce priority invasive plants;
- Develop a property pest management plan and when required, a farm biosecurity plan.

Examples for landholders are provided in (table 2), for more information on pest management plans contact Department of Agriculture and Fisheries on; 132523 or visit their website.

https://www.daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/pest-management-planning/develop-plan

[12] ww.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/land-management/health-pests-weeds-diseases/weeds-diseases/controlling-weeds/planning

Table 2 Examples of Obligations and Actions which landholders could consider

Sector	General Biosecurity Obligations	Actions
Primary producers: horticulture	• Be aware of the priority risks to your industry and local government area. • Report new or suspected pests to your industry contact, MSC or Biosecurity Queensland. • Don't move soil or machinery that has biosecurity risks such as invasive plant seeds or dirt. • Prevent the spread of declared invasive plants on and off your property by controlling, prior to the flowering period, in high risk areas (watercourses/ roadways/ boundaries). • Reduce MSC identified priority invasive plants on your property. • Monitor and record the presence of and damage caused by feral animals on your property. • Participate in coordinated feral animal control programs. • Provide/maintain access for management programs.	• Survey for invasive plants and animals during routine maintenance. • Maintain vehicle/machinery hygiene protocols. • Use appropriate control methods. • Erect property and site-specific signs. • Rotate crops and trapping programs. • Manage invasive plants on water courses and roadways.
Primary producers: grazing		• Conduct boundary/risk area checks. • Survey for invasive plants and animals during routine maintenance. • Maintain vehicle/machinery hygiene protocols. • Use appropriate control methods. • Participate in baiting and trapping programs. • Erect property and site-specific signs. • Conduct chopper rolling, slashing, boom or aerial spraying. • Develop a property pest management plan and/or a farm biosecurity plan. • Install pest-appropriate fencing.
Landholders: fruit production		• Conduct crop/risk area checks. • Survey for invasive plants and animals during routine maintenance. • Ensure equipment leaving or entering properties is clean of contaminants. • Use appropriate control methods. • Erect property and site-specific signs. • Provide/maintain access for programs. • Provide groundcover management. • Develop a property pest management plan and/or farm biosecurity plan. • Install pest-appropriate fencing. • Participate in baiting and trapping programs. • Reduce priority invasive plants.
Nursery industry and plant sellers		• Research information on new stock lines before introduction. • Report unusual plants and animals. • Prevent the sale of state, local and problem invasive plants. • Manually remove invasive plants and bag seed heads. • Erect property and site-specific signs.
Landholders: rural residential, lifestyle and urban residential		• Report unusual plants and animals. • Responsibly dispose of green waste. • Select suitable garden plants. • Cooperate with and participate in local area invasive plant and animal management programs.

Sector	General Biosecurity Obligations	Actions
		• Report recurrence of priority invasive plants after control efforts. • Participate in baiting and trapping programs • Develop property pest management plan and/or a farm biosecurity plan. • Install pest-appropriate fencing. • Reduce priority invasive plants.

5.2 Failing to Comply General Biosecurity Obligations

Failing to comply with the Act could result in a biosecurity officer or MSC Land Protection Officer issuing a Biosecurity Order requiring specific action to be taken within a reasonable timeframe[13] . This formal compliance action ensures an individual, business or other organisation improves the way they manage biosecurity risks.

6. Local Government Area Collaboration

In recognition of the vast spaces and limited resources available community wide, MSC actively collaborates in managing biosecurity risks across the MLGA and participates in a number of groups to share information and efficiently deploy resources, such as (PMAC), neighbouring councils and (FNQROC).

6.1 Pest Management Advisory Committee (PMAC)

The purpose of PMAC is to provide a forum to share information on priority pest animals and plants and emerging invasive plant and animal threats.[14]

PMAC also

- Provides an opportunity for community members and organisations to bring to the attention of various levels of government (and other stakeholders) pest management issues;
- Review the local Biosecurity Plan annually;
- Review the invasive plant and animal action plans;
- Make advisory recommendations to Council;
- Promote the implementation of sustainable environmental solutions including site rehabilitation, restoration and revegetation;
- Provides stakeholders with the ability to influence and provide input into current and future management practices.

[13] www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/biosecurity-act-2014/general-biosecurity-obligation
[14] https://www.trc.qld.gov.au/download/pest-management-advisory-committee-terms-reference/

6.2 Far North Queensland Regional Organisation of Councils (FNQROC)

FNQROC has facilitated the establishment of a number of committees. To assist in the collaboration of information and resources between Council's resulting in the distribution of action plans targeted at priority species.[15]

Natural Asset Management Advisory Committee (NAMAC) is one of the established committee's, which is actively involved in pest management, landscape repair and restoration, biodiversity conservation and general landscape management.[16]

Local governments work together with key stakeholders and partners to provide the community with information on best practice land and invasive species management.

7. Priority Invasive Plants and Animals in the MLGA

Tables 3 and 4 provide a list of invasive plants and animals which are either found in or may affect the MLGA. Action plans have been developed for invasive plants and animals highlighted in green. These action plans are located at the back of this plan.

Table 3 Invasive Plants

Mareeba Shire Community Action Plan List - Invasive Plants		
MSC biosecurity action plan	**Other invasive plants**	
Common Name	**Other Invasive Plant Programs and Classifications**	**Biosecurity Act Categories Refer to Table 1**
Aleman grass		
Amazon frogbit		-
Bellyache bush	WONS	3
Buddleia		
Broad-leaved privet		**3**
Cabomba	WONS	**3**
Camphor laurel		**3**
Cats claw creeper	WONS	**3**
Cestrum		
Chinese privet		**3**
Coffee		
Coral bush		
Coral tree		
Gamba grass	WONS	**3**
Grader grass		
Giant bramble		
Giant rats tail grass		**3**
Giant sensitive plant		**3**
Guava species		
Himalayan magnolia		
Hymenachne	WONS	**3**
Japanese sunflower		
Koster's curse		**2,3,4,5**
Lantana	WONS	**3**

[15] https://www.fnqroc.qld.gov.au/

[16] https://www.fnqroc.qld.gov.au/regional-programs/natural-asset-management

Common Name	Other Invasive Plant Programs and Classifications	Biosecurity Act Categories Refer to Table 1
Leucaena species		
Lions tail		
Maderia vine	WONS	3
Miconia species	NTWEP	**2,3,4,5**
Navua sedge		
Parthenium	WONS	**3**
Prickly acacia	WONS	**3**
Rubber vine	WONS	3
Salvinia	WONS	**3**
Siam weed		3
Sickle pod		3
Singapore daisy		**3**
Thatch grass		
Turbina vine		
Thunbergia species		3
Tobacco weed		**3**
Water hyacinth	WONS	**3**
Water lettuce		**3**

WONS- Weeds of National significance; NTWEP-National Tropical Weed Eradication Program.

Table 4 Priority Species

Mareeba Shire Community Action Plan List -Pest Animal Species	
MSC biosecurity action plan	**Other feral species**
Common Name	**Biosecurity Act Categories - Refer to Table 1**
Cane Toad	-
Eastern gambusia (guppy, or mosquito fish)	**3,5,6,7**
Electric Ants	**1**
Feral cat	**3,4,6**
Feral pig	**3,4,6**
Indian Myna	-
Rabbit	**3,4,5,6**
Rusa deer	**3,4,6**
Wild dog	**3,4,5,6**
Yellow Crazy Ants	**3**

8. Key Projects and Programs

The following key projects and programs are active across the MLGA and highlight the partnerships and programs that are currently underway and may be continued for the duration of this plan. The six projects and programs for the MLGA have been determined in consultation with key stakeholders with the aim of establishing management goals, performance indicators and outcomes.

These key projects and programs have been established over a number of years, with the aim of removal and eradication of invasive plants and animals, with the assistance of community groups; local industries and businesses.

Key Projects and Programs for Invasive Plant and Animal Management in the MLGA:

1. Jatropha;
2. Gamba Grass;
3. Parthenium;
4. Siam Weed;
5. National tropical four weed eradication program;
6. Feral dogs and wild dogs' program.

Project 1. Jatropha

Invasive Plant Name	Management Goal	Performance Indicator
Jatropha (Physic, and Bellyache Bush & Rubber vine). 	Strategic and staged removal from Irvinebank to the Walsh River Junction.	Staged removal from upper tributaries.
Strategic Action		
• **Stage one** - Extends from Irvinebank to Emuford, with **Stage two** - Emuford to Petford. • To locate and control infestations; • Promote individual landholders and other departments to control target plants and monitor for recurrence; • Facilitate public awareness programs such as displays at local field days and run awareness talks, with landholders in high risk areas; • Identify funding opportunities to assist in all of the above programs.		
Project Partners		
Mareeba Shire Council, Southern Gulf Catchments NRM, Mitchell River Watershed Management Group, Landholders, Australian Native Bee Research Group, Australian Agriculture Colleges Corporation, Biosecurity Queensland, Traditional Owners , Department of Natural Resources, Mines and Energy (DNRME).		

Project 2. Gamba Grass

Invasive Plant Name	Management Goal	Performance Indicator
Gamba Grass containment and eradication. 	Strategic staged removal/containment from Paddy's Green and upper Walsh catchment (western watershed).	Prevention of spread in western watersheds, reduction in infestations in Southern Hann and Paddy's Green. Containment and management of plantings on private lands.
Strategic Action		
• Remove gamba grass from western catchments of the upper Walsh; • To ensure that infestations located are controlled; • Promote individual landholders and other departments to control target plants on their lands and monitor for recurrence; • Facilitate public awareness programs such as displays at local field days and run awareness talks with landholders; • Identify funding opportunities to assist in all the above programs.		
Project Partners		
Mareeba Shire Council, Landholders, Tablelands Regional Council, Cook Shire Council, Queensland Parks and Wildlife Service, Mitchell River Watershed Management Group, Biosecurity Queensland and FNQROC.		

Project 3. Parthenium

Invasive Plant Name	Management Goal	Performance Indicator
Parthenium detection and removal. 	Strategic surveillance, detection and removal of incursions across entire MLGA.	Detection and removal of incursions and introductions of Parthenium, new incursions mapped, and monitoring of historical sites.
Strategic Action		
• To ensure that all incursions are located and controlled; • Promote individual landholders and other departments on their lands and monitor for recurrence at controlled sites; • Facilitate public awareness programs such as displays at local field days and run awareness talks with landholders in high risk areas; • Identify funding opportunities to assist in all of the above programs.		
Project Partners		
Mareeba Shire Council, Landholders, Mitchell River Watershed Management Group, Local Bushwalking Clubs, Biosecurity Queensland.		

Project 4. Siam Weed

Invasive Plant Name	Management Goal	Performance Indicator
Siam Weed Eradication. 	Eradication of Siam Weed from the Gibb and Emu Creek.	All new incursions detected and controlled.
Strategic Action		
• Revisits and monitoring to monitor seed bank; • Promote individual landholders and other departments on their lands and monitor populations and impacts of target pest; • Facilitate public awareness programs such as displays at local field days and run awareness talks with landholders in high risk areas.		
Project Partners		
Mareeba Shire Council, Landholders, Biosecurity Queensland, Mitchell River Watershed Management Group.		

Project 5. Four Tropical Weed Eradication Program

Invasive Plant Name	Management Goal	Performance Indicator
Tropical Weed Eradication - (Mikania vine, Miconia spp., and Koster's curse. 	In partnership with Four Tropical Weeds to locate and control all infestations within the MLGA with the aim to eradicate.	Surveys completed within management areas, all target invasive plants located mapped and treated with no reproductive events.
Strategic Action		
• Participate in survey and control program; • To ensure that all infestations located are controlled prior to seeding; • Assist or facilitate public awareness programs such as displays at local field days and run awareness talks with landholders in high risk areas.		
Project Partners		
Four Tropical Weeds Eradication program, Mareeba Shire Council, Queensland Parks and Wildlife Service.		

Program 6. Feral Pigs and Wild Dogs Program

Animal Name	Management Goal	Performance Indicator
Feral pigs and wild dogs, coordinated baiting programs.  	Deliver coordinated programs to reduce population and impacts through selective baiting.	Reduction of impacts from feral pig or wild dog on primary industry and environment, reduction of feral pig or wild dog numbers, successful delivery of selective baiting to minimise impacts.
Strategic Action		
• To ensure that all landholders in management area participate/contribute to programs; • Promote individual landholders and other departments on their lands to monitor populations and impacts of target pest; • Facilitate public awareness programs such as displays at local field days and run awareness talks with landholders in high risk areas.		
Project Partners		
Mareeba Shire Council, Landholders, Biosecurity Queensland.		

8.1 Desired Outcomes

The desired outcomes proposed for this plan are consistent with those of the state invasive plant and animal management strategies (developed in accordance with the requirements of the Biosecurity Act 2014 and are central to the success of species management activities).

Desired Outcome	Plan
1	Stakeholders are informed, knowledgeable and have ownership of invasive plant and animal management.
2	All stakeholders are committed to and undertake coordinated management of invasive plants and animals.
3	Strategic directions are established, maintained and owned by all stakeholders.
4	The introduction, establishment and spread of invasive plants and animals are prevented.
5	Integrated systems for managing the impacts of established invasive plants and animals are developed and widely implemented.

Desired Outcome 1: Stakeholders are informed, knowledgeable and are committed to invasive plants and animal management.

Principle	Issue	Strategic Objective	Strategic Action	Success Criteria	Success Indicators
	Awareness	Community, industry, agribusiness and government awareness and knowledge of invasive plants and their impacts are increased over the next four years.	The MSCBP is available from the website and other partners.	The degree to which public awareness programs address the publics knowledge gaps.	Copies available for viewing in Council Office and Library.
	Availability of information		Action plans for pests declared under local laws are developed.	Pest information is widely available with stakeholders acknowledging they have received appropriate information.	Action plans for locally declared invasive plants and animals
			Pest management displays are presented at the FNQ field day and other opportunities (i.e. Landcare, Agforce, Catchment Group meetings).		Number of presentations made.
			Pest related media releases are developed for the local area at appropriate seasonal times.		Media releases completed.
			Stakeholders work together to promote invasive plants and animal awareness across sectors and interest groups.		Information circulated through existing networks.

Desired Outcome 2: All stakeholders undertake coordinated management of invasive plants and animals.

Principal	Issue	Strategic Objective	Strategic Action	Success Criteria	Success Indicators
Commitment, Consultation and Partnership 	Commitment	Establish long term commitment to invasive plants and animal management and practical compliance with invasive plants and animal control responsibility.	Maintain a working group of key stakeholders to develop and review plans and actions.	Regular reviews of policy and action plans.	Bi-annual meetings.
			Establish a partnership with local pest management work group.	Maintenance of partnerships.	Continued working partnerships.
			Maintain a register of notices.	Extent of compliance.	% of compliance with 1st and 2nd notices.
	Compliance and enforcement	Participation	Participate in delivery and hosting of on the ground operations.	Level of participation.	Number of taskforces attended or hosted.
				Pest survey program maintained and implemented.	
			Encouraging voluntary compliance, participation and industry incentives for adoption of "Best Practices" approach.	Full participation of working group members.	

Desired Outcome 3: Strategic directions are established, maintained and owned by all stakeholders

Principal	Issue	Strategic Objective	Strategic Action	Success Criteria	Success Indicators
Planning 	Planning	To create a coordinated and integrated planning framework for invasive plants and animal management.	Ensure that the Mareeba Shire Community Biosecurity Plan is consistent with related strategies and plans.	The number of adequality resourced pest management plans at different levels integrated into the planning framework.	No inconsistences between plans.
					Timely review of action plans.
					% of plans completed in budget.
	Coordination		Annual review of action plan and management objectives by PMAC.		Number of meetings and events hosted or attended.
	Resources		Commitment to action plans.		% of pest management conditions applied to development approvals.
			Participate and contribute to regional planning and advisory groups and forums.		
Intergratation	Holistic Management		Where required appropriate species management issues are considered in development applications to ensure the spread of invasive plants is prevented.		
			Consult with neighbouring Shire's, Landcare and environmental groups.		

Desired Outcome 4: Introduction, spread and establishment of invasive plants and animals is prevented.

Principal	Issue	Strategic Objective	Strategic Action	Success Criteria	Success Indicators
Prevention 	Prevention of introduction.	To prevent the introduction and establishment of new invasive plant and animals.	Adopt invasive plant prevention protocols.	The extent to which the introduction and establishment of new species is prevented.	Occurrence of new invasive plant species.
	Early detection and eradication.		Promote weed hygiene declarations for movement of harvesting, construction plant, and fodder.		Use of weed prevention declaration.
	Containment		Swift action to control target species. Participate in rapid response protocol. Promote early reporting of pest problems to landowner's complaints promptly.		% of recurrence of target invasive plant species

Desired Outcome 5: Integrated systems for managing the impacts of established invasive plants and animals are developed.

Principal	Issue	Strategic Objective	Strategic Action	Success Criteria	Success Indicators
Prevention 	Adoption of management techniques.	To adopt and promote best practice of invasive plant and animal management to reduce populations, especially in environmentally significant areas.	Consider; timing, integrated techniques, non-target damage, cost prevention, animal welfare, work, health and safety, monitoring research, operational procedures and chemical requirements in planning.	The extent to which best practices is adopted and environmentally sensitive areas are protected.	Feedback on plans, comprehensive cover age of issues.
	Population and impacts management.		Maintain and update pest management distribution, and annual objectives. Contribute to annual pest distribution survey.		Distribution and management objective mapping for priority species remains current.
	Environmentally significant areas.		Coordinate pest management actions with landholders.		% of landholders participating in baiting wild dog programs.
			Regular monitoring of site conditions.		Number and distribution of invasive plants identified.

8.2 Alert Species

Pest plant and animal alert species in (table 5 and table 6) have been found in North Queensland local government areas but have not yet been discovered in the Mareeba Shire region despite suitable habitats. Department of Agriculture and Forestry has detailed species information.

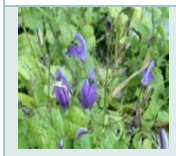
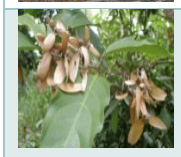
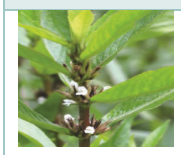
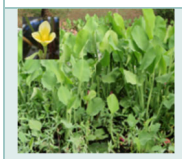
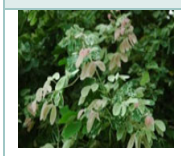
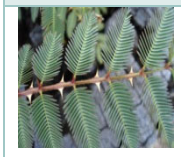
The community has a responsibility to be vigilant and report these pests to:

- MSC on 1300 308 461, or 408 6450;
- Email info@msc.qld.gov.au or;
- Visit the customer service centres at 65 Rankin Street, Mareeba, or
- Kuranda Library 18-22 Arara Street Kuranda.

8.3 Invasive Plant Alert Species

The following tables include information about invasive plants and animals which may be found in the MLGA and how they can be spread.

Table 5 Invasive Plants which could be found in the MLGA

Species	Common name	Scientific name	Vicinity	Likely source and mode of spread
	Bunny Ears Cactus	*Opuntia microdasys, O.leucotricha, O.rufida*	Mareeba and Cairns	Nursery and ornamental gardens
	Bog Moss	*Mayaca fluviatilis*	Cassowary Coast	Aquariums and water plants
	Brillantaisia	*Brillantaisia lamium*	Douglas, Cairns and Cassowary Coast	Machinery, vehicles, livestock and potted plants
	Cha-om or Pennata wattle	*Senegalia insuavis*	Cairns, Whitsunday Regional Council	Private gardens
	Hiptage	*Hiptage bengalhensis*	Douglas Shire	Ornamental gardens and wind
	Hygrophilla	*Hygrophilla costata*	Cairns, Cassowary Coast & Hinchinbrook	Aquariums and water plants
	Limnocharis	*Limnocharis flava*	Cairns, Cassowary Coast and Townsville	Aquariums and water plants
	Madras Thorn	*Pithecellobium dulce*	Cairns and Cassowary Coast	Ornamental gardens
	Mexican Bean tree	*Cecropia species*	Douglas, Cairns, Cassowary Coast	Ornamental gardens, birds and flying-foxes
	Mimosa	*Mimosa pigra*	Northern Territory and Mackay	Boats and fishing gear

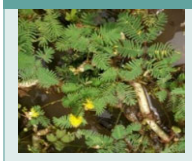
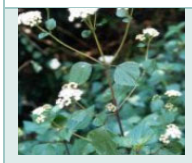
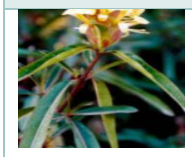
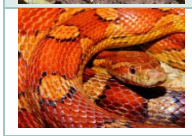
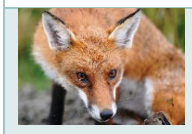
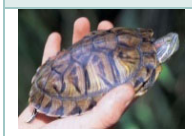
Species	Common name	Scientific name	Vicinity	Likely source and mode of spread
	Water Mimosa	*Neptunia oleracea and N. plena*	South-east QLD, Cairns	Private gardens and flood events
	Sagitaria	*Sagittaria platyphylla*	Townsville, Mackay and South-east Queensland	Aquariums and water plants
	Crofton Weed	*Ageratina adenophora*	Tableland Regional Council South East Queensland	Ornamental gardens Machinery, vehicles & animals
	Baleria or porcupine flower	*Barleria prionitis*	Townsville, Boigu Island	Prickly shrub, grown in gardens

Table 6 Pest animals which could be found in the MLGA

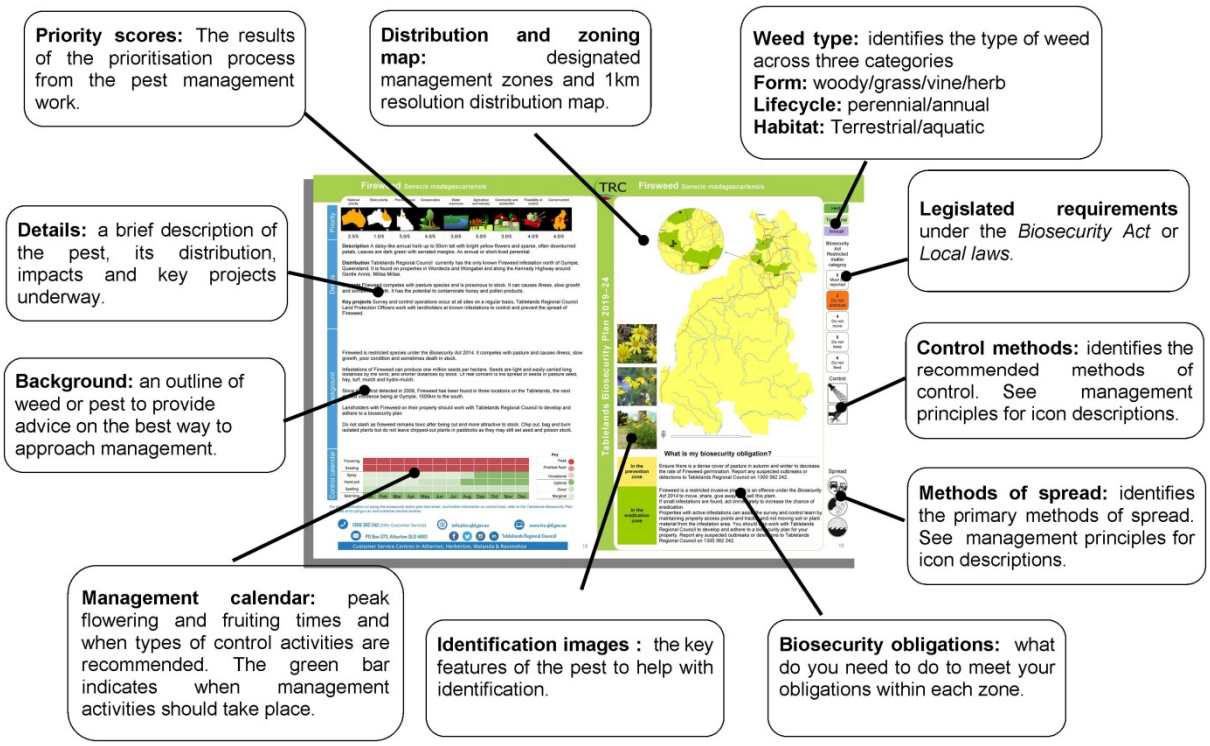
Species	Common name	Scientific name	Vicinity	Likely source and mode of spread
	Asian Spiny Toad	*Bufo melanostictus*	Cairns	Transport via plane or sea
	American Corn Snake	*Pantherophis guttatus*	Cairns	Pet trade
	Fox	*Vulpes*	Mt. Fox, Hinchinbrook	Natural migration
	Red-eared Slider Turtle	*Trachemys scripta elegans*	South-east Queensland (eradicated)	Aquariums and pet trade
	Fall Army Worm	*Spodoptera frugiperda*	Far North Queensland, Torres Strait	Transport via plane or sea

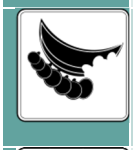
9. Action Plans for Control of Priority Plant Pest and Animal Species

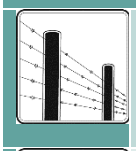
Action plans have been developed for priority pest plant and animals which occur in the local government area. The action plans detail specific requirements and strategies for management in addition to what is required of all people under the general biosecurity obligation. The action plans outline management objectives based on established principles of pest management and are designed to assist all stakeholders to:

- Understand the biology and distribution of priority pest plant and animals.
- Implement appropriate strategic actions at the most appropriate time to have the greatest impact on the targeted pest (best management practice) and ensure they meet their general biosecurity obligation.

Plan and coordinate pest management activities with neighbouring properties by targeting common management objectives and goals within relevant geographic areas.



Control methods which can be found in the biosecurity action plans		
	**Frill or stem injection**	Herbicide can be applied to woody weeds and trees via cuts or frills made close to the ground around the trunk or stem. This approach is best used when it is ok to leave the dead plant standing.
	**Basal bark**	Herbicide can be applied to woody weeds or vines with a low-pressure spray (which usually includes diesel or synthetic oil) to the lower stem. This method is not suited to use near or in water ways.
	**Cut stump**	Many vines, trees and woody weeds can be controlled by applying herbicide to the freshly cut stem. The application is made quickly with a dabber or spray before the plants vascular tissue closes over.
	**Chop or grub**	Many weeds can be selectively managed manually by grubbing or chopping. This approach is useful for reducing the competition from weeds while native vegetation or desirable plants re-establish.
	**Drill/stem injection**	Herbicide can be applied as a measured dose into evenly-spaced, downward-facing holes drilled near the base of each stem. Cordless or petrol- powered drills are usually used due to their portability.
	**Best practice grazing**	Carefully managing stocking rates will keep healthy ground-cover which provides competition for many weeds. Grazing can also be used in some situations to knock weeds down prior to control.
	**Hand removal**	Many weeds can be removed manually, particularly when they are at a seedling stage. Hand weeding is very selective and can be used where as little as possible disturbance is required.
	**Foliar spray**	Most weeds can be controlled at various life stages by applying herbicide via a spray. Sprays applicators can be low or high pressure and are suited to covering larger areas or dense infestations.
	**Biocontrol**	The release of carefully selected natural pests or diseases of plants and animals can control them, or to interrupt their reproduction. Biocontrol is most effective when integrated with other control tools.
	**Slashing**	Slashing can often be used to reduce the growth or reproduction of many weeds and is particularly useful before other control actions. Timing is critical in order to prevent the spread of seeds or fragments.
	**Mechanical removal**	Large scale infestations may require mechanical removal or control. Machinery can also be used to clean up after control activities but will usually require follow-up to control and prevention work.
	**Fire**	A well planned and timed fire can be a very effective management tool which can reduce or stimulate dormant seeds or control living plants. It is most suited to fire adapted vegetation types.

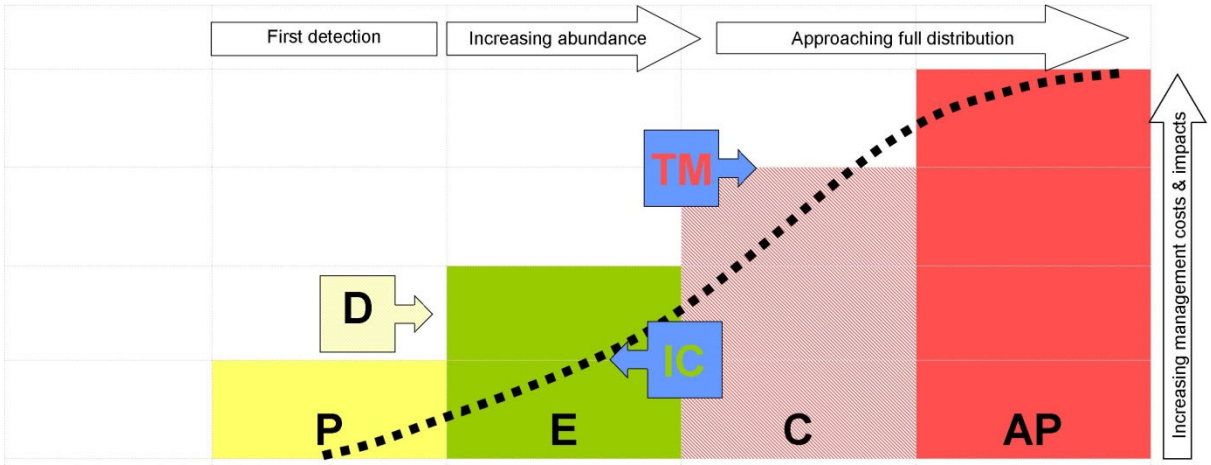
Control methods which can be found in the biosecurity action plans		
	**Exclusion fencing**	There are a wide range of fencing materials and designs to protect domestic and agricultural assets. Fencing can also be used manage grazing pressure or access to reduce weed or disease spread.
	**Pesticide**	Pesticides are used in certain situations to control anything from ants to wild dogs. There are strict usage and permitting requirements for many pesticides. They can be an effective tool over large areas.
	**Trapping**	Trapping is widely used for feral pigs but can also be used to control wild dogs, feral cats and feral deer. Trapping is labour intensive but can very target specific when conducted using best practice tools.
	**Shooting**	Shooting or hunting is sometimes used to control individual animals. It is usually less effective and even disruptive to other control strategies but is a useful tool to supplement trapping and baiting.

Key to modes spread		
	**Droppings**	Many plants have evolved to use animals to spread seeds by producing a tasty fruit. Seeds are eaten along with the flesh of the fruit and can be dispersed in droppings up to kilometres away.
	**Illegal dumping**	Deliberate or accidental spread of many plants can occur when green waste is not disposed of responsibly. Areas of bushland, creeks and farmland often suffer impacts from dumped garden plants.
	**Machinery and vehicles**	Slashers and earthworks equipment are most commonly blamed, for moving pests, but cars, 4wds, motorcycles, boats and caravans are all capable of moving pest plants and animals great distances.
	**People and animals**	Some plants have seeds adapted to stick to and hitch a ride on passing animals and can move long distances attached to animals fur or peoples clothing.
	**Stock, raw materials & produce**	Raw materials and produce including hay, animal feed, seed mixes and even livestock can contain or carry weed seed or other biosecurity risks like invasive ants, pathogens or diseases.
	**Vegetative**	Many plants can spread from cuttings, stem or root fragments. For some species this is their primary means of reproduction but for others it is in addition to producing seeds or spores.
	**Water**	Many aquatic plants rely entirely on water to spread their seeds. Others have seeds or fragments which can float for long distances and move during regular flows or on flood events.
	**Wind**	Many plants have seeds which are lightweight with attachments to help them glide or float on the air or in the wind. The lightweight seeds can also get caught on vehicles and clothing.

Appendix A - Action Plan Management Zones and Control Methods

The action plans use catchment-based management zones to identify the location-specific management actions required for each priority pest plant and animal. The management zones are based on the pest management concept of the 'invasion curve'. The invasion curve describes how as a biosecurity issue becomes more abundant over time the management options and strategies available to manage it or its impacts also change. At each stage of the curve, as the area occupied by the pest or weed increases, the implied impact and required resources to respond also increase.

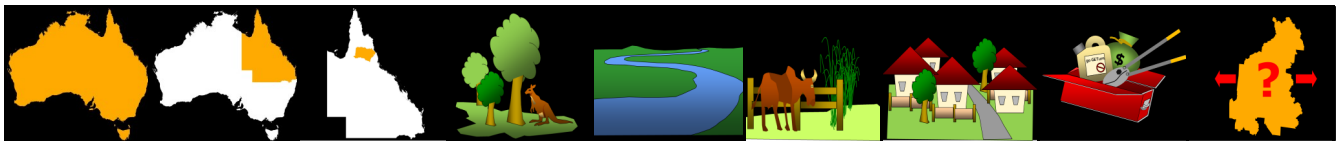
The key message is that prevention and early intervention are the most cost-effective (proactive) actions we can take. When these actions are not successful, we need to carefully consider the most strategic (reactive) management approaches to ensure local impacts and potential spread to new areas is reduced.



Core management objectives	**P**revention is a deliberate action taken to prevent species spreading to management zones where they do not currently occur.	**E**radication is a deliberate action taken to remove all individuals of a species including all propagules in the soil seed bank from within a management zone.	**C**ontainment is a deliberate action taken to prevent establishment and reproduction of a species beyond or out of a management zone.	**A**sset **P**rotection is a deliberate action taken to reduce the impacts on important assets in a management zone.
Transitional management objectives	**D**elimitation is a deliberate action taken to determine whether a species is present or absent in a management zone.	**I**ntensive **C**ontrol is a deliberate action taken to move a management zone towards eradication from containment or asset protection to eradication.	**T**ransitional **M**anagement is deliberate action to move away from an eradication objective to a containment or an asset protection objective within a management zone.	

Parthenium hysterophorus (Parthenium weed)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
2.5/5	4.0/5	5/5	3.4/5	2.9/5	4.0/5	2.6/5	4.3/5	3.6/5

Details

Description: Parthenium weed is an annual herb with a deep tap root and an erect stem that becomes woody with age. Juvenile plants are formed from a rosette on the ground . As it matures, the plant develops many branches in its top half and may eventually reach a height of two metres.

Distribution: Localised infestations around Mareeba. Heavier Infestations occur to the south of Mareeba Shire in the Upper Hebert and Burdekin. The introduction of Parthenium is often associated with poultry feed or contaminated machinery from outside of the region.

Impacts: Parthenium is a weed of crops and grasslands causing loss of crop and pasture production. Parthenium weed also causes severe allergic reactions including hay fever and dermatitis in susceptible people.

Key projects: A Pest Survey Program annual treatment and surveillance program is underway on known infestations.

Background

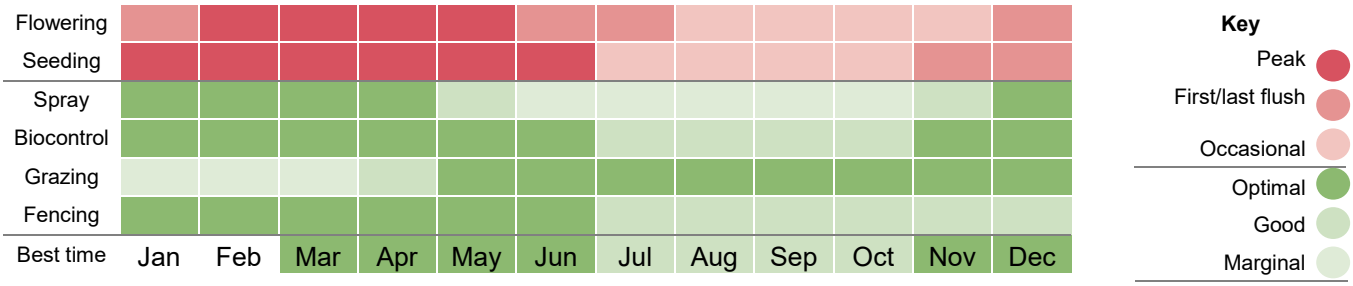


Parthenium weed is often spread as a contaminant in stock and poultry feed. Keep a close watch on areas where feed or hay has been spread. Ensure that the supplier you source from can confirm the product is free from weed seed and not from a known infested area. Making sure imported vehicles and machinery are free from weed seed and soil can reduce the risk of accidental introduction. Spell any stock in a holding paddock for at least 7 days.

Several biocontrol agents exist for Parthenium weed but the low densities of the weed in the Mareeba area means that manual or herbicide control will be more effective at controlling plants before they can set seed.

In the Mareeba area Parthenium weed is sometimes confused with flaxleaf fleabane (*Conyza bonariensis*) or khaki weed (*Alternanthera pungens*). Fleabane has leaves which are less lobed and Parthenium stems will have distinctive dark to light stripes running along their length. Fleabane typically produces a single upright stem whereas Parthenium will branch out into more of a shrub like shape. Khaki weed runs prostrate on the ground and has broad leaves with a blunt tip whereas Parthenium forms an upright plant and has leaves which are deeply lobed.

Control calendar



For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

www.msc.qld.gov.au
info@msc.qld.gov.au

Mareeba, 65 Rankin Street, Mareeba QLD 4880

Kuranda Library, Kuranda Community Precinct 18-22 Arara Street, Kuranda QLD 4881

1300 308 461

@MareebaShire

Parthenium hysterophorus (Parthenium weed)

Herb

Terrestrial

Annual

Biosecurity Act Restricted matter

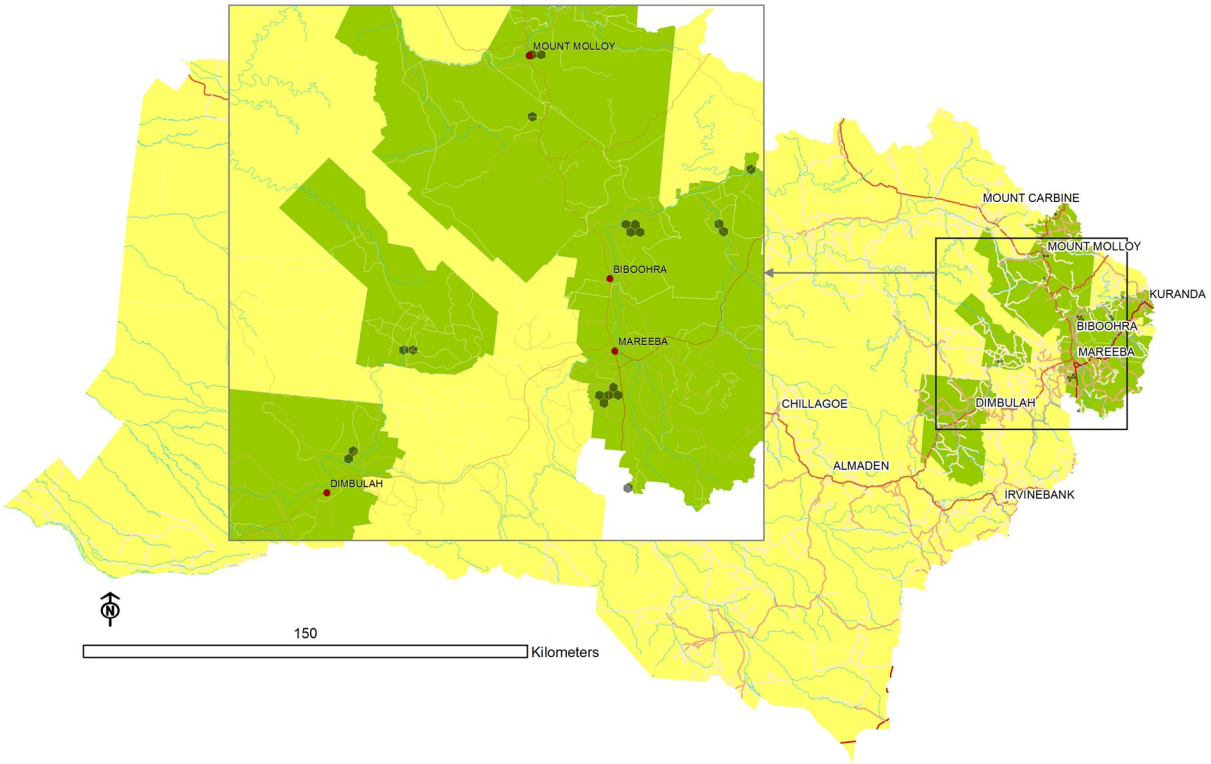
2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed





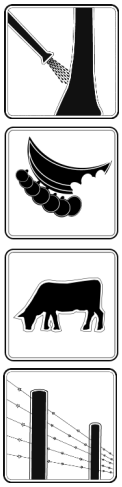




What is my biosecurity obligation?

In the prevention zone	Ensure any machinery or vehicles moving from infested areas are free from plant material and soil. Be aware that contaminated poultry feed or hay may contain seeds and enquire where materials you are purchasing have been sourced from. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300
In the eradication zone	Control all plants before they flower and set seed. Assist in annual survey operations and make sure that any remerging plants are treated before they flower and set seed. Soil in the vicinity of known and historical locations may still contain viable seed. Make sure soil in these areas is not disturbed or moved to new locations. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300

Control

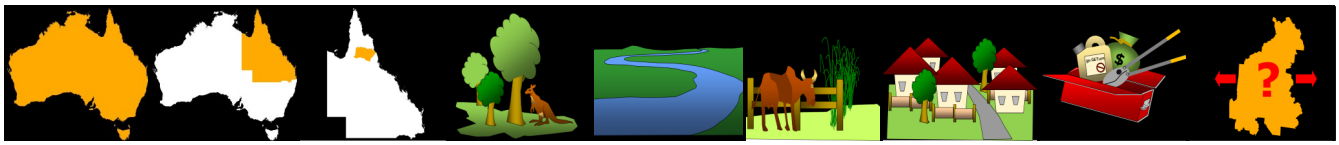


Spread



Jatropha spp. (Bellyache bush & physic nut)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
2.5/5	1.5/5	4.0/5	4.0/5	3.8/5	4.2/5	1.6/5	4.0/5	4.4/5

Details

Description: Squat, thick stemmed shrub 2.4-4m tall. Seedlings single stemmed with deeply divided purple leaves. Mature leaves brighter green with up to 5 lobes with coarse dark brown hairs on the margins. Small red flowers followed by green fleshy pods. Before their leaves form the emerging seedlings resemble asparagus spears.

Distribution: Currently restricted to riparian areas in the Lower Walsh River and Emu Creek but is readily spread on floodwaters so may be present in the gulf plains. Infestations are known from the Palmer River to the north and Charters Towers area to the south.

Impacts: The fruits are poisonous to humans and livestock which when eaten lead to symptoms of gastroenteritis and sometimes death. Bellyache bush has a devastating impact on rangeland river systems and pastures.

Key projects: A coordinated top-of-catchment down management program is continuing on Bellyache bush and its relative *Jatropha curcas* in the Emu Creek and Upper Walsh. A containment area is in place to prevent the spread into the Staaten River catchment from the Walsh River.

Background

Both bellyache bush and physic nut are sometimes confused with castor oil plant which also grows in sandy creek beds. Castor oil plant is taller with more (7-9) lobes to the which are pointed rather than rounded on the ends.



Physic nut leaves

Bellyache bush has potential to spread along watercourses. Landholders downstream of Emu Creek and Walsh River infestations should be on the look out for new or established infestations to assist the management response.

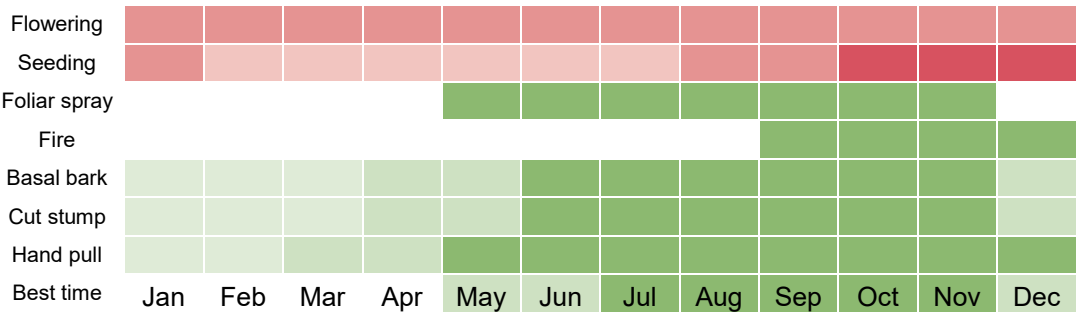
Spelling stock in holding yards prior to releasing to pasture/rangelands will allow seed to pass through the gut or drop from hair. Ensure quarry and raw materials are free of seed.



Physic nut fruit

The management program is targeting the current infestation on Emu Creek in a top-of-catchment down approach. Rubbervine and physic nut are being targeted at the same time. Maintaining healthy pasture and fire regimes can assist to reduce the density of infestations. Spelling stock for at least 7 days before moving from contaminated areas will ensure seed is passed. Following up after flood events which can lead to spread of seed will help to contain plants to watercourses in densely infested areas.

Control calendar



Key

- Peak
- First/last flush
- Occasional
- Optimal
- Good
- Marginal

For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

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Jatropha spp. (Bellyache bush & physic nut)

Woody

Terrestrial

Perennial

Biosecurity Act Restricted matter

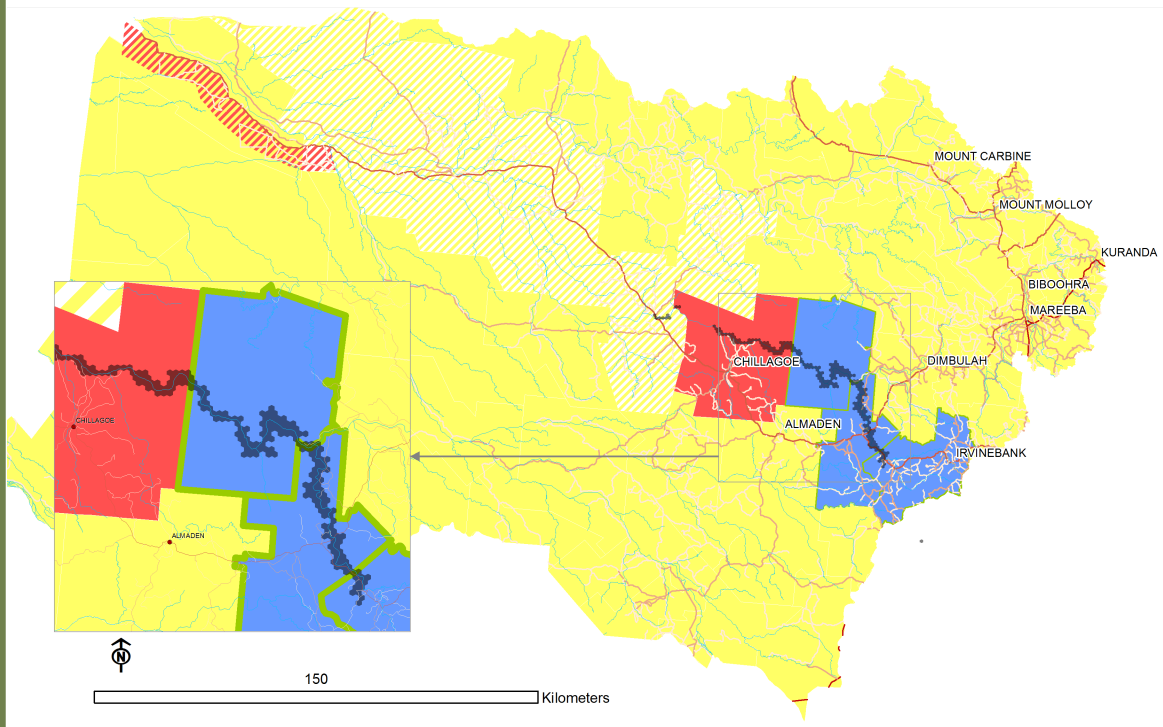
2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed

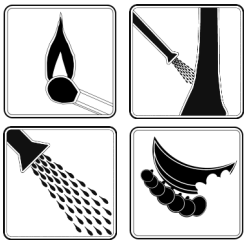








Control



Spread

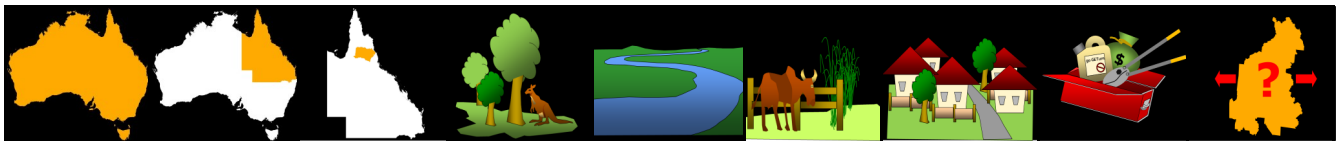


What is my biosecurity obligation ?

In the delimitation zone	Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.
In the prevention zone	Spell stock for at least seven days prior to movement. Ensure machinery and vehicles moving from infested areas are free from plant material and soil. Report any suspected outbreaks or detections.
In the intensive control zone	Bellyache Bush is a restricted invasive plant under the *Biosecurity Act 2014*. It is an offence to move, share, give away or sell this plant and to move or sell
In the asset protection zone	Do not move or sell contaminated produce, soil and spell stock for at least 7 days prior to movement. Reduce risk or spread by managing plants adjoining property accesses, waterways and boundaries.
In the containment zone	Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.

Miconia spp. (M. calvescens & M. racemosa)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
5.0/5	2.5/5	5.0/5	3.9/5	3.1/5	2.0/5	2.1/5	4.4/5	4.0/5

Details

Description: A small tree (up to 15 m) with large leaves up to 70 cm long. The underside of the leaves is a distinct, deep iridescent purple. Produces clusters of small white flowers followed by red/purple berries.

Distribution: Current incursions occur in the rainforest areas of Kuranda and Julatten. A single location of *Miconia racemosa* occurs in the Myola/Fairyland area and is also a target of the National cost-shared eradication program.

Impacts: Miconia produces hundreds of small berries every year which are attractive to birds and are spread long distances. It forms dense thickets in rainforest understoreys, potentially replacing native plants and affecting wildlife populations.

Key projects: Target of the National cost-shared Tropical Weeds Eradication Program led by Biosecurity Queensland. All plants should be reported immediately to Biosecurity Queensland on 13 25 23 or Mareeba Shire Council on 1300 308 461.

Background

Miconia is a serious weed in Tahiti and Hawaii, where it forms dense thickets in rainforests and displaces native flora and fauna. Miconia was initially brought into Australia via botanic gardens, and was sold in some nurseries and markets between 1978 and the mid-1990s. Dispersal to new locations has been mainly via cultivation (gardeners and plant collectors). Fruit-eating birds are the primary mechanism of dispersal into surrounding forests and gardens. Miconia is very shallow rooted and has also been known to cause landslides.



M. racemosa fruit

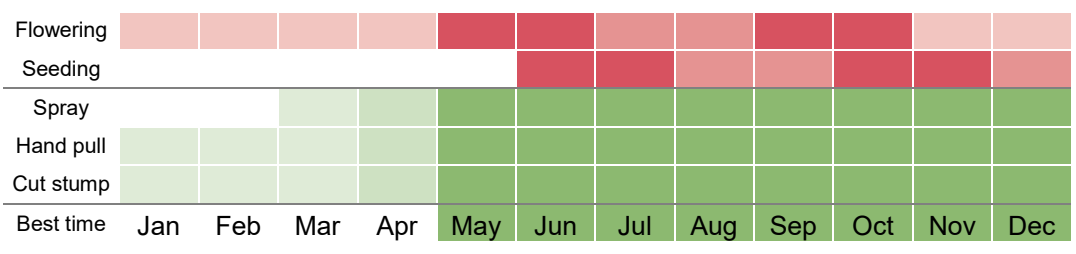
A National eradication program is underway on all known infestations. Bi-annual surveys are conducted to monitor all known infestations and to ensure no new outbreaks have gone undetected. Birds can disperse the small seeds out to many hundreds of metres .

Miconia calvescens is the most widely distributed of the two Miconia species present in the Mareeba Shire which are eradication targets of the National Tropical Weeds Eradication Program. Both species were introduced as garden specimens which have spread into neighbouring rainforest and agricultural landscape by birds.



M. racemosa leaves

Control calendar



Key

- Peak
- First/last flush
- Occasional
- Optimal
- Good
- Marginal

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Miconia spp. (M. calvescens & M. racemosa)

Woody

Terrestrial

Perennial

Biosecurity Act Restricted matter

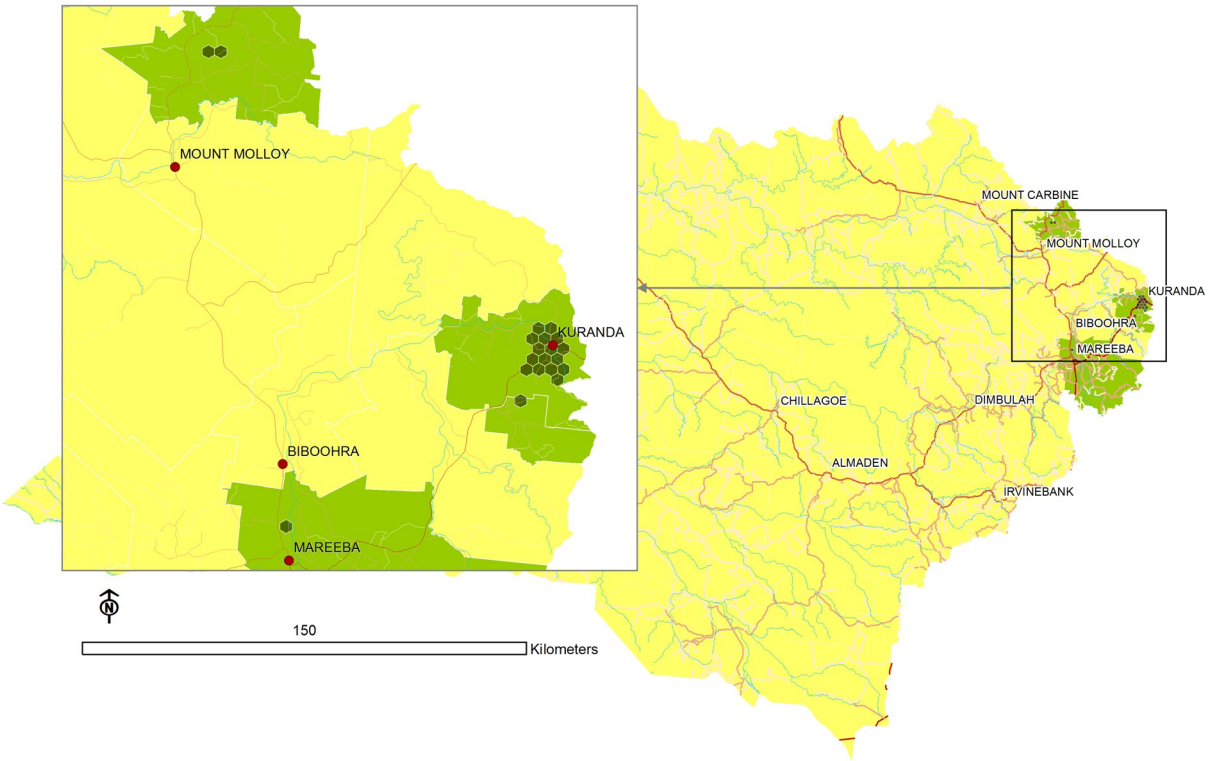
2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed









Control







What is my biosecurity obligation?

In the prevention zone

All Miconia in Australia are the target of the National, cost-shared Tropical Weeds Eradication Program and its control locally is a high priority.

Landholders are required to immediately report suspected infestations to Biosecurity Queensland on 13 25 23 or Mareeba Shire Council on 1300 308 461. Refer to the biosecurity programs of the Tropical Weed Eradication Program for more information.

In the eradication zone

If you have an active infestation on your property you can assist the survey and control team by maintaining property access, and ensuring you do not move soil or plant material from the infestation area.

Landholders are required to immediately report suspected infestations to Biosecurity Queensland on 13 25 23 or Mareeba Shire Council on 1300 308 461. Refer to the biosecurity programs of the Tropical Weed Eradication Program for more information.

Spread

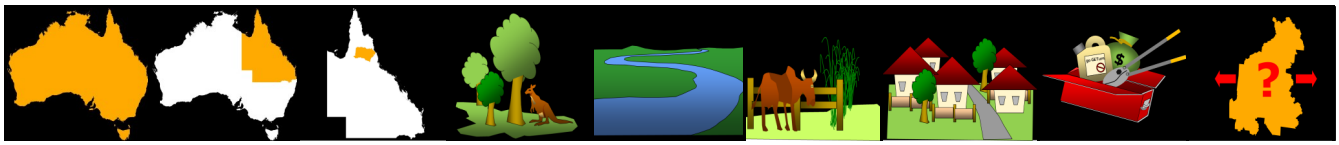






Andropogon gayanus (Gamba grass)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
2.5/5	1.5/5	5.0/5	3.9/5	3.1/5	2.0/5	2.1/5	4.4/5	4.0/5

Details

Description: A robust, upright perennial grass that grows between 2-4 metres tall with distinctive plumed seed heads. Gamba grass forms a thick and strong tussock which remains upright even when fully cured in the dry season.

Distribution: Dense infestations are currently restricted to the Hann Tableland and surrounding stations. Isolated stands occur on road network and private properties.

Impacts: Gamba grass was planted as a tropical pasture but has escaped from intensively managed grazing systems and outcompetes native pastures and fuels intense fires. Late season Gamba fires are very difficult to manage and pose a significant threat to life and property.

Key projects: A cross regional plan and management project is underway for gamba grass. A code of practice for containing gamba grass to grazing enterprises is in development.

Background

Up until its declaration as an invasive weed, Gamba grass was widely promoted as a tropical pasture grass. Wider delimitation in the western rangelands of the region are required to establish if there has been any spread from historically-planted sources.

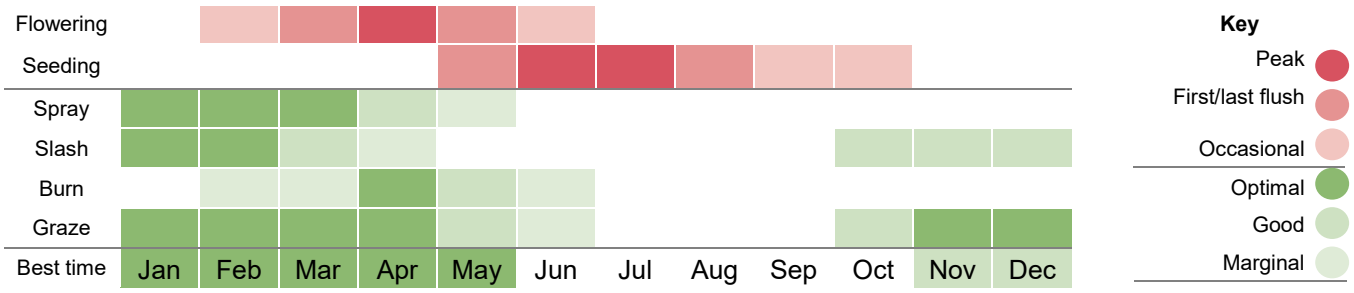
Containment of planted sources and maintenance of buffers on access roads can reduce the spread and impact of Gamba grass. Ensuring adequate stocking rates at the right times of year can prevent seeding and rank growth in retained plantings. Early season burning or slashing prior to flowering can provide access for control activities and reduce the bulk of the plant to be sprayed. It is crucial to follow up after slashing or spraying because plants will flower and set seed if left untreated.

Under the *Biosecurity Act 2014*. It is an offence to move, share, give away or sell this plant.

Do not sell cart, introduce or transport contaminated hay or silage.

Ensuring vehicles, machinery and raw materials including hay are from a clean source will assist to reduce the risk of accidental introduction and spread of Gamba grass.

Control calendar



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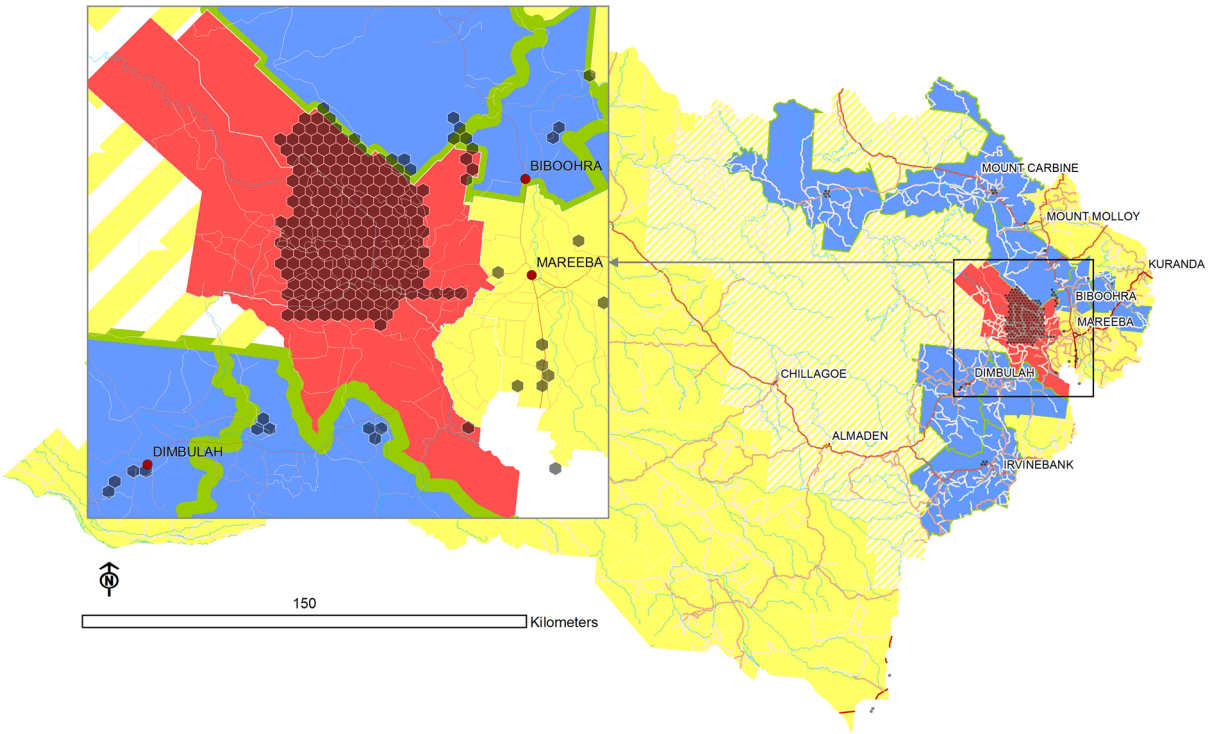
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Andropogon gayanus (Gamba grass)

Grass

Terrestrial

Perennial



Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed







Control





Early season



What is my biosecurity obligation?

In the delimitation zone	Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461. Ensure machinery and vehicles moving from the infested areas are free from plant material and soil. Do not sell, cart, introduce or transport contaminated hay or silage.
In the prevention zone	
In the eradication zone	Ensure best practice weed hygiene measures are implemented to reduce risk of spread elsewhere. Assist in annual survey operations and control isolated plants before they seed. Do not sell, cart, introduce or transport contaminated hay or silage.
In the intensive control zone	
In the asset protection zone	The Biosecurity Act requires landholders must act to prevent the spread of Gamba grass from their property and that it cannot be sold, spread or moved. Do not cart, introduce or transport contaminated hay or silage.

Spread



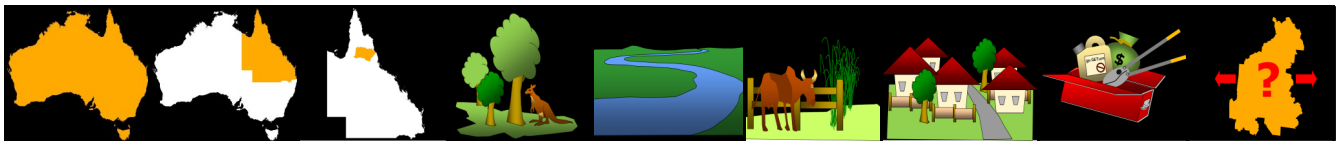




Cryptostegia grandiflora (Rubber vine)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
2.5.0/5	1.5/5	4.0/5	4.2/5	4.1/5	3.9/5	1.6/5	3.3/5	3.1/5



Details

Description: A vigorous twining climber which begins as a multi-stem shrub with long whip like shoots. Can form low shrubs or canopy of vines. Distinctive glossy, paired leaves and large white to purple funnel shaped flowers. Produces paired rigid seedpods with fine cotton like seed.

Distribution: Widespread ranging from sparse to common . More prevalent in areas protected from fire like riparian zones, vine forests and rocky outcrops. Far eastern areas are within the national containment line for rubber vine

Impacts: Rubber vine smothers native vegetation and pasture and can impede stock movement. The dense vine thickets shade out grasses which alters fire regimes and vegetation composition. It is poisonous to stock. Rubber vine has particularly high impacts in areas sheltered from fire like river banks and rocky escarpments.

Key projects: A successful rust bio-control agent seasonally suppresses outbreaks. Healthy rangeland pastures and appropriate fire regimes are key tools in broad acre management.

Background

Rubbervine is sensitive to fire, particularly when plants are smaller and infestations are not too dense. Fire can be used as a management tool in places where grasses can carry fire up to seedlings or established plants. In areas where fire is naturally excluded including riparian zones, vine scrubs, escarpments and dry rainforest other control tools will usually be required to protect sensitive vegetation, and to control plants protected from management burns.

The rubber vine rust biocontrol is very successful at reducing the vigour of rubber vine and when combined with fire in native pastures it can reduce the size of infestations and destroy seedlings. The effectiveness of the rust will vary from season-to season.

Rubber vine seeds spread on the wind so this needs to taken into account when planning management actions. Beginning work on the down-wind side of management sites or being prepared to continually control plants to protect important assets in upwind areas should be taken into consideration.

Regular survey of at-risk areas and the control of new introductions on roadsides will assist prevent spread to adjoining areas. Mapping infestations on your property will help plan a coordinated management program. Targeting seed source sites which pose a high risk of spread will help to slow the rate of spread.

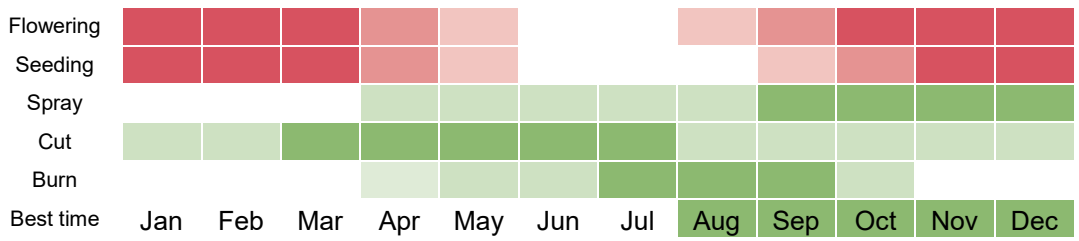


Rubber vine rust.



Rubber vine seed pod.

Control calendar



Key

- Peak
- First/last flush
- Occasional
- Optimal
- Good
- Marginal

For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

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Cryptostegia grandiflora (Rubber vine)

Vine

Terrestrial

Perennial

Biosecurity Act Restricted matter

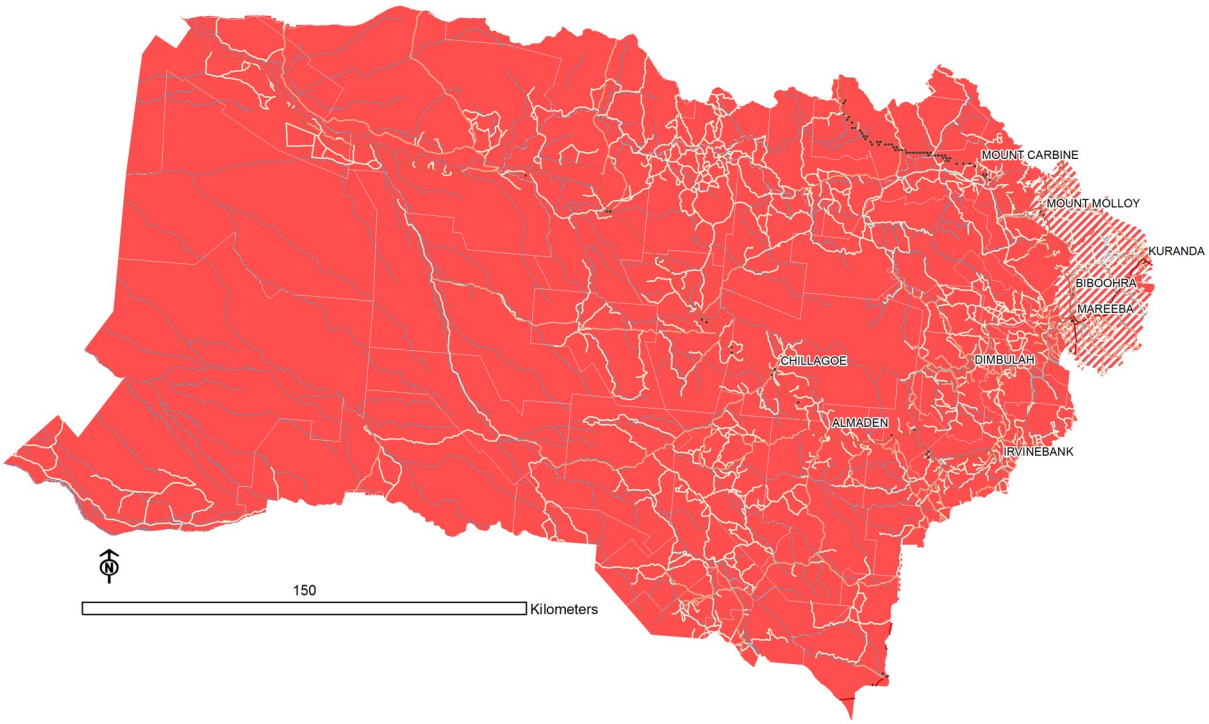
2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed









What is my biosecurity obligation?

In the containment zone

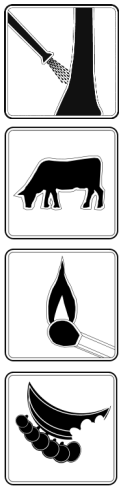
Ensure that machinery, stock and materials are from weed free areas or subject to a detailed weed hygiene measures to reduce the risk of spread. Maintaining healthy fire regimes and pastures will improve the ability of your property to resist rubber vine seedlings establishing .

In the asset protection zone

Rubber vine is widespread throughout the asset protection zone however there will be many places which are still relatively free from impacts, or which are less suitable for rubbervine to establish. Planning fire regimes and pasture cover is important in reducing the density of current infestations and spread to new or neighbouring locations.

Control plants along waterways and roadsides from the top-down or in a east-west direction to allow for seed dispersal on the trade-winds. Assist management programs by assisting with access and maintaining healthy rangelands.

Control

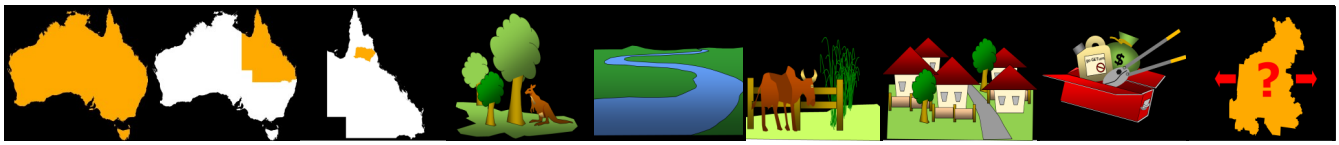


Spread



Salvinia molesta (Salvinia)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
2.5/5	1.5/5	4.0/5	3.9/5	4.7/5	2.9/5	1.8/5	3.3/5	2.9/5

Details

Description: A floating fern with small, coarsely hairy oval leaves which repel water. As the plant matures it turns from bright green to brown and bunches up into tight rafts. Although Salvinia is a fern it does not produce spores but reproduces by division, creating new plants which can float away from the parent plant.

Distribution: Salvina is widespread and common in most disturbed creek systems in the Barron River, Granite and Rifle Creek catchments. It can seasonally choke farm dams and waterways during the summer growing period. It's currently not known to occur in western watersheds.

Impacts: An aquatic weed that can choke waterways. It floats on still or slow-moving water and can grow rapidly to cover the entire water surface with a thick mat of vegetation. This shades out any submerged plant life and impedes oxygen exchange impacting fish and aquatic organism.

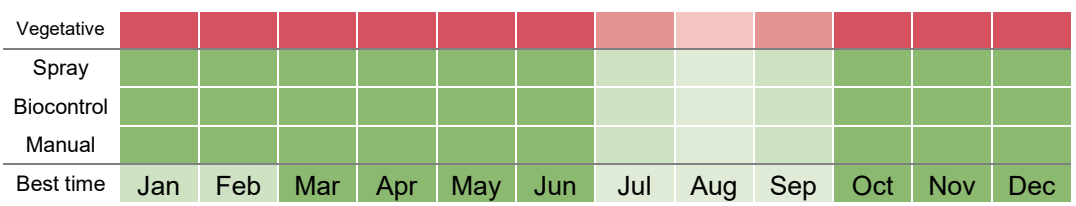
Key projects: Periodic release of bio-control weevil and spraying of dense infestations are conducted in key locations including landholders dams , water supplies and intakes .

Background

Salvinia is most likely to be introduced as a contaminant of wetland plants sourced from infested locations or from aquariums. It may also spread on floodwaters from known locations. Although it has the greatest impact in still water it will exist in flowing water like the Barron River where it lodges in backwaters and eddies. Infestations can quickly establish from small plant segments.

Targeted control of key environmental and visitor assets and the ongoing release of Salvinia weevil biocontrol agent are the primary means to reduce the impacts of Salvinia. The Salvinia weevil biocontrol agent is an effective management tool in dense infestations. The weevils are seasonal, often slowing down in the winter months then re-emerging when warmer weather arrives. The weevil may reduce the density and cover of an infestation but will not remove it completely. In doing so they assist keep infestations at a manageable threshold.

Control calendar



Key

- Peak
- First/last flush
- Occasional
- Optimal
- Good
- Marginal

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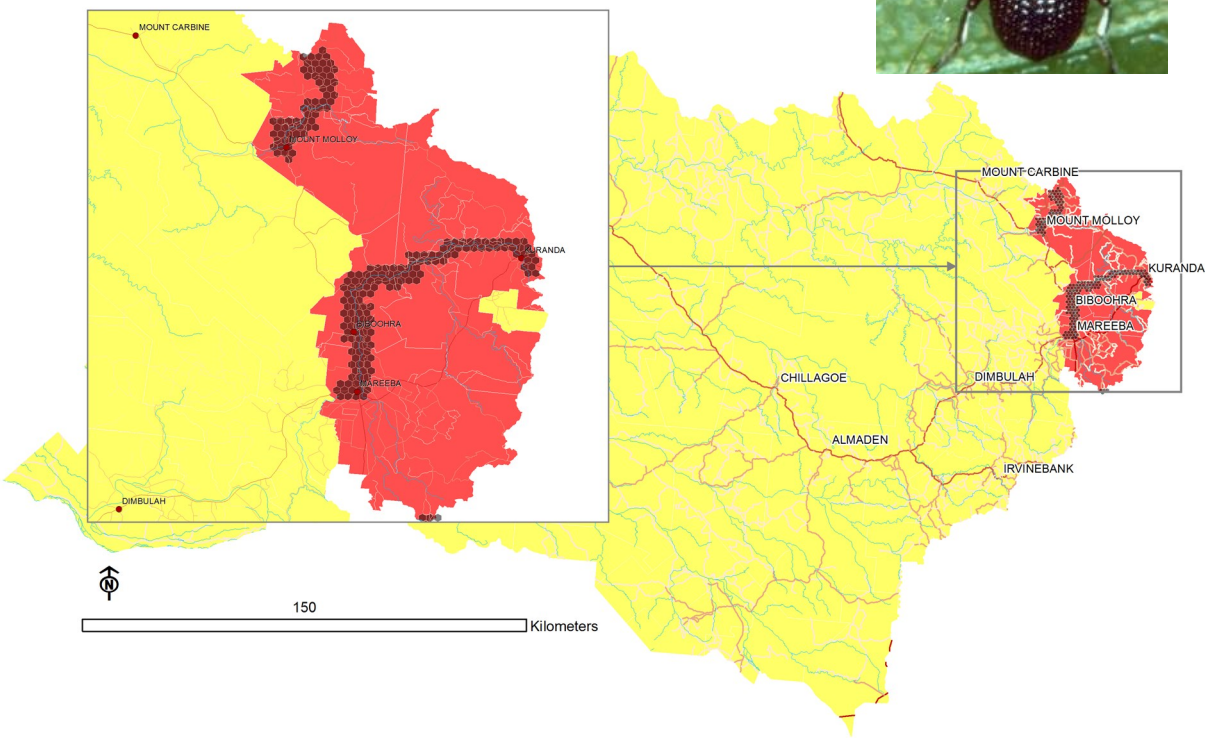
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Salvinia molesta (Salvinia)





Floating

Aquatic

Perennial

Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed







What is my biosecurity obligation?

In the prevention zone	Salvinia is a restricted plant under the Biosecurity Act 2014. It must not be distributed, given away or sold. Ensure sources of aquatic plants for aquariums and water features are weed free. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.
In the asset protection zone	Salvinia is a restricted plant under the Biosecurity Act 2014. It must not be distributed, given away or sold. Control plants along waterways in a top-down approach. Manual removal or herbicide control will be required to complement Salvina weevil biocontrol.

Control

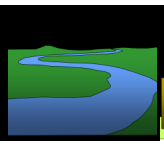
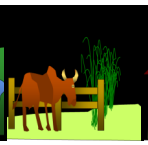


Spread



Limnobium laevigatum (Amazon frogbit)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	0.0/5	0.0/5	3.0/5	5.0/5	2.0/5	3.0/5	3.0/5	3.0/5

Details

Description: A floating, matting aquatic plant with glossy semi -circular leaves which are spongey underneath. As the leaves mature they are held more upright on swollen stems. Mature plants may reach up to 50cm tall. Flowers are small , white and form a fleshy berry-like capsule which is usually held under the water or in the mud.

Distribution: Recently detected in Granite Creek and has subsequently entered the Barron River due to spread on flood waters. Currently not in western watersheds but may be in use in home aquariums or traded on social media.

Impacts: A floating aquatic weed that can smother and choke waterways. It floats on still or slow-moving water and can grow rapidly to cover the entire water surface with a thick mat of vegetation. This shades out any submerged plant life and impedes oxygen exchange impacting fish and aquatic organisms.

Key projects: The Granite Creek infestation has been surveyed and treated several times. Downstream infestations in the Barron River have not been subject to treatment.

Background

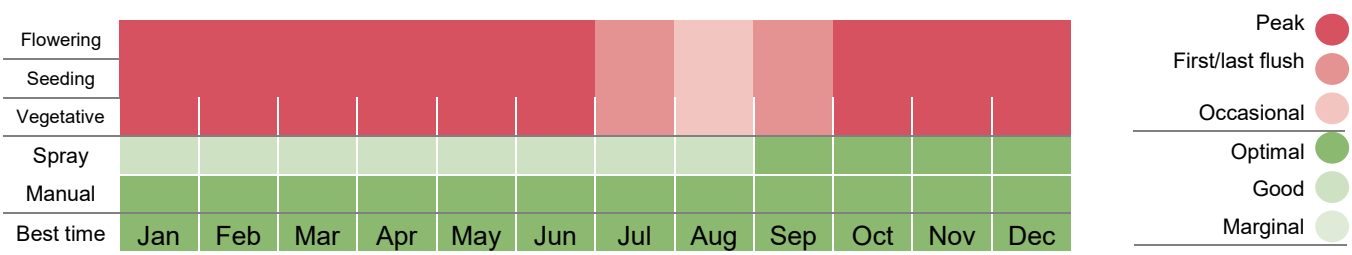
Amazon frogbit was imported to Australia as an aquarium plant and has naturalised in a range of aquatic habitats and locations. It's rapid growth rate and ability to reproduce both from seed and division assist it to rapidly colonise still and slow moving waterways. It can grow either anchored to the bottom in shallow water, or floating in deeper water.

The plant initially forms rosettes before branching out on runners to produce new plants. It can resemble duckweed when it is juvenile or water hyacinth when it is in adult form. Key features to look for when identifying Amazonian frogbit include spongey undersides to juvenile leaves and small white flowers.

Each flower produces pods which hold up to 100 small hairy seeds around 1mm long which disperse by floating on the water.

Amazon frogbit is also known from isolated infestations in Cairns and the Tablelands. It may also be in use as an aquarium plant elsewhere in the region and traded through online trading sites.

Control calendar



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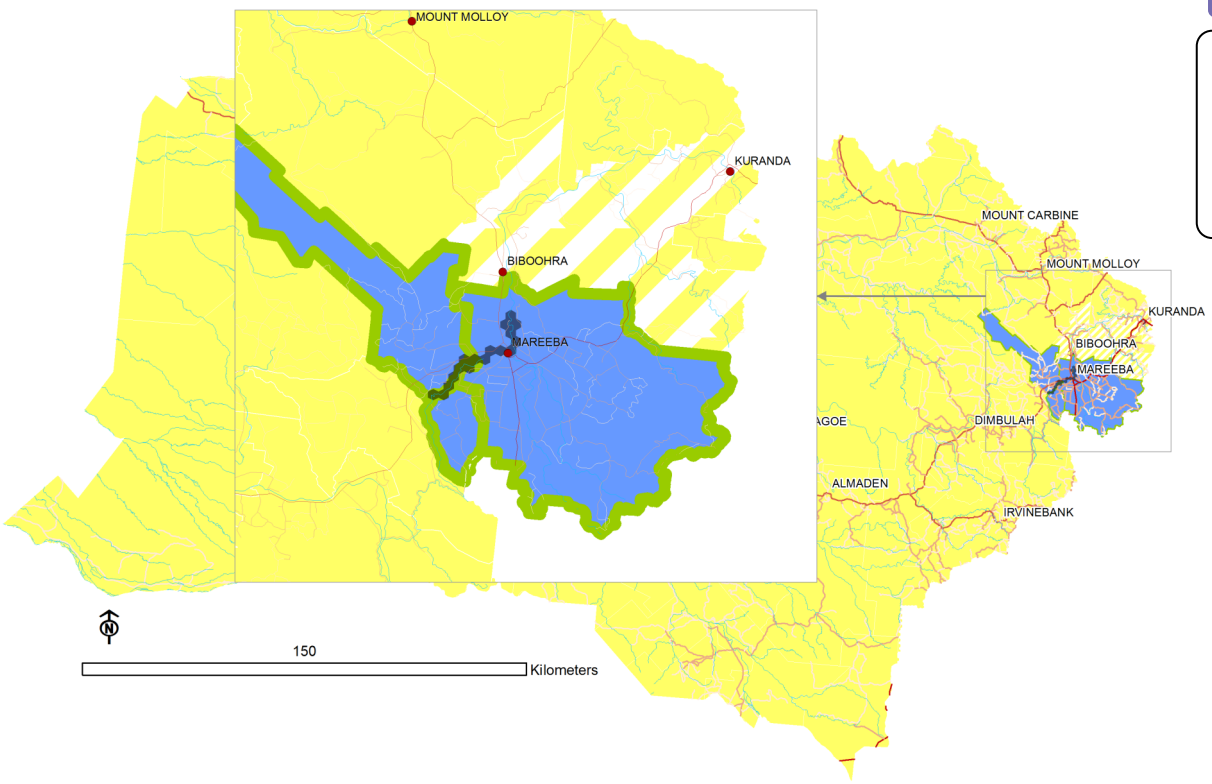
Limnobium laevigatum (Amazon frogbit)

Floating

Aquatic

Perennial

General Biosecurity Obligation (GBO) applies









Control







What is my biosecurity obligation?

In the prevention zone	Ensure sources of aquatic plants for aquariums and water features are weed free. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.
In the intensive control zone	Control plants along waterways or in dams and water features using a top of catchment down approach. Assist management programs by assisting with access to control locations and managing other water weeds and grasses which might hide or harbour juvenile plants. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.

Spread

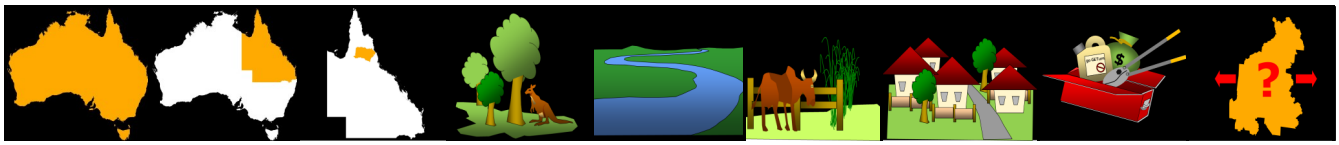






Chromolaena odorata (Siam weed)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	2.5/5	5.0/5	4.3/5	3.6/5	3.4/5	2.6/5	4.1/5	3.8/5

Details

Description A scrambling woody shrub to 3m (and higher as a scrambling climber) with distinctive forked leaf venation and purple flush on new leaves. Clusters of white flowers in May to June and October. Distinguished from other weeds Bluetop, Praxelis and Billy Goat Weed which are shorter and have mauve to purple flowers.

Distribution Currently known from Emu Creek, Mt Carbine, Mt Molloy and the Barron River. Widespread but localised in the Upper Herbert from Ravenshoe to Blencoe and in Mossman, Tully/Murray and Lower Johnstone catchments.

Impacts Siam can form dense thickets and outcompete native species and pasture in both disturbed and undisturbed areas. Siam prefers richer soils in alluvial and riparian zones but will grow in almost any environment in the wet or dry tropics.

Key projects Detailed survey and surveillance is required to ensure Siam has not established in the south-west of the region. Siam remains a long term eradication target for the Mareeba Shire and surveillance operations to maintain

Background

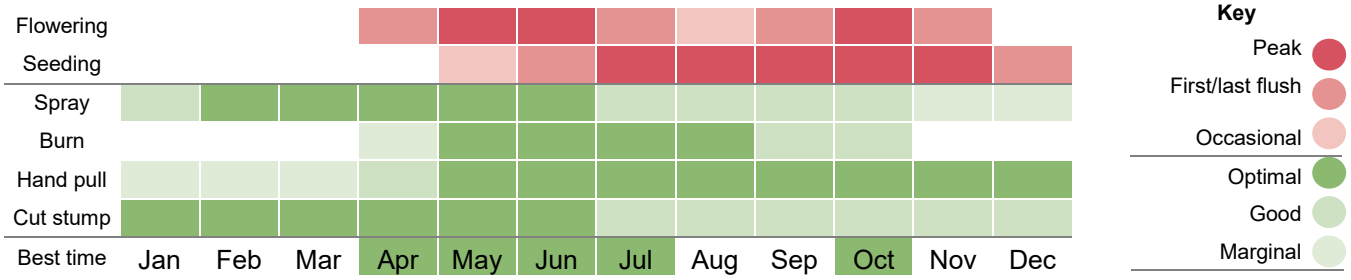
Siam weed is likely to arrive with contaminated stock, produce, vehicles or machinery from adjoining infested areas . Ensure weed hygiene measures are in place and materials/produce are sourced from a clean site.

Siam weed has a peak flowering period in May-June with another, less vigorous flowering in October. It is most visible at these times and this feature is used to detect plants prior to seeding. Siam weed is able to be spread by wind and water as well as by water and machinery and vehicles.

All know infestations in Mareeba shire are the subject of an eradication program.

Siam seed is confirmed to remain viable in the soil for at least 7 years. Maintaining records of historical infestations and restricting disturbance and movement of soil is essential to prevent spread.

Control calendar



For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

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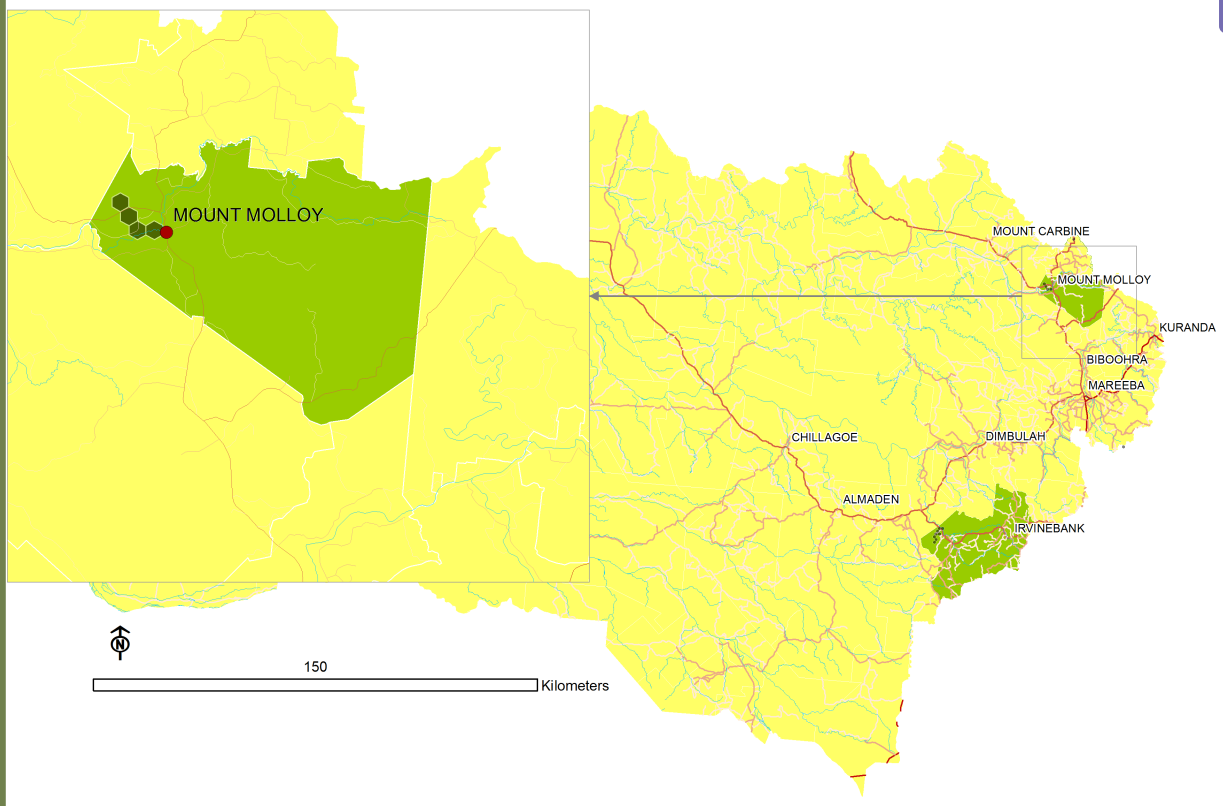
@MareebaShire

Chromolaena odorata (Siam weed)

Woody

Terrestrial

Perennial



Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed







Control







What is my biosecurity obligation?

In the prevention zone

Ensure agricultural and raw materials are sourced from a reliable supplier from and are from a weed free area. Do no disturb or remove soil and plant material from known infestation location, even if no plants are visible.

If importing stock from locations where Siam weed is known to occur ensure they are spelled for at least 7 days before being loaded to reduce the risk of seed being present in the gut or on hair. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.

In the eradication zone

Siam weed is a restricted plant under the Biosecurity Act 2014. It must not be distributed, given away or sold. This includes as contaminant in produce or raw materials.

Control plants before seed is developed. Assist management programs by assisting with access and maintaining healthy rangelands. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.

Spread



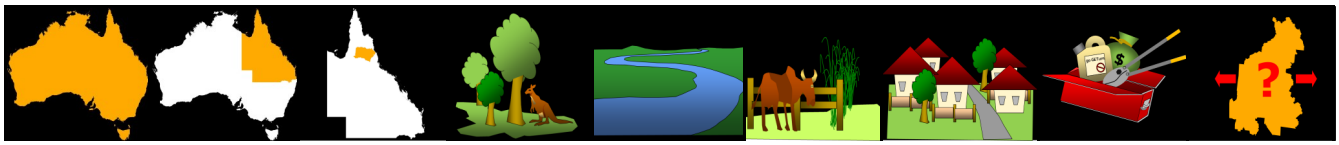




Hymenachne amplexicaulis (Olive hymenachne)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
2.5/5	1.5/5	4.0/5	4.1/5	4.6/5	2.3/5	1.8/5	2.1/5	2.8/5



Details

Description A robust, upright, perennial aquatic grass that grows to 2m and has distinctive stem-clasping leaves. Olive Hymenachne can form dense infestations in wetlands and waterways growing in water up to 1.2m deep. The flowers are formed on cylindrical spikes. The stems contain an air filled pith which aids in flotation.

Distribution: Widespread in the Barron River, Rifle/Devil Devil Creek, Upper Walsh and Lake Mitchell. The Lake Mitchell infestation is possibly the largest single infestation in Queensland. There is an isolated infestation in the Upper Mary River.

Impacts: Olive Hymenachne blocks drainage systems and waterways and readily invades and outcompetes native plants in wetlands and waterways. It prevents fish passage and breeding opportunity for key recreational species and can block irrigation channels and damage infrastructure.

Key projects: Management in the Barron River, Devil Devil Creek and Granite Creek is targeted toward protecting key assets, reducing spread to new areas and reducing impacts.

Background

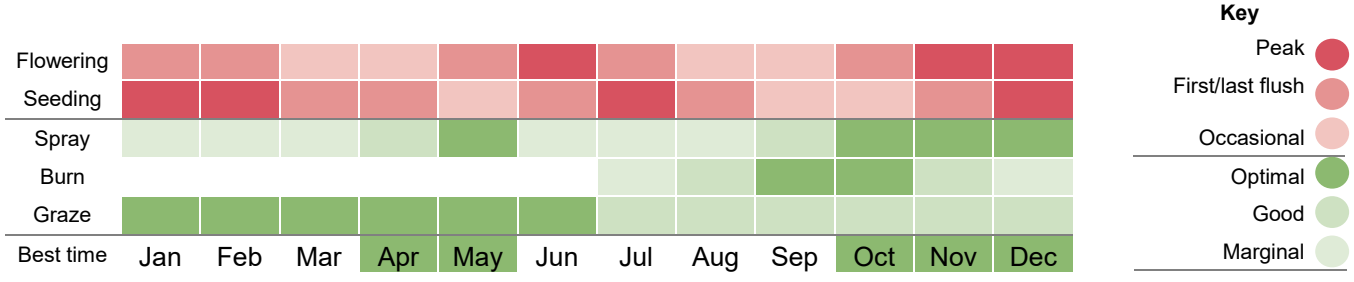
Olive Hymenachne is a weed of national significance. Its seed can be spread via vehicles, machinery, stock and potentially waterbirds. Waterways, wetlands and dams should be monitored during the growing season to detect new outbreaks. Spelling stock for seven days prior to moving them onto or off your property will allow time for seed to pass through the gut or fall from hair and hooves.

Cleaning boats and watercraft prior to moving between regions, particularly in lowland rivers of the Wet Tropics where Olive Hymenachne can be abundant, will help to reduce the risk of spread to new locations. Targeted management is required to prevent spread and establishment from adjoining regions and historically planted sources.

Up until its declaration as an invasive weed, Olive Hymenachne was widely promoted as a wet pasture grass. Wider delimitation in western rangelands is required to establish any spread from historically-planted sources. Detailed management information is available at **environment.gov.au**.

In 2010, it was confirmed that olive hymenachne and the native species has hybridised with specimens found in both the Northern Territory and northern Queensland. This hybrid has intermediate characteristics of both the parent plants. The native H. acutigluma, and the hybrid H. x calamitosa both occur in the Mareeba Shire.

Control calendar



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Hymenachne amplexicaulis (Olive hymenachne)

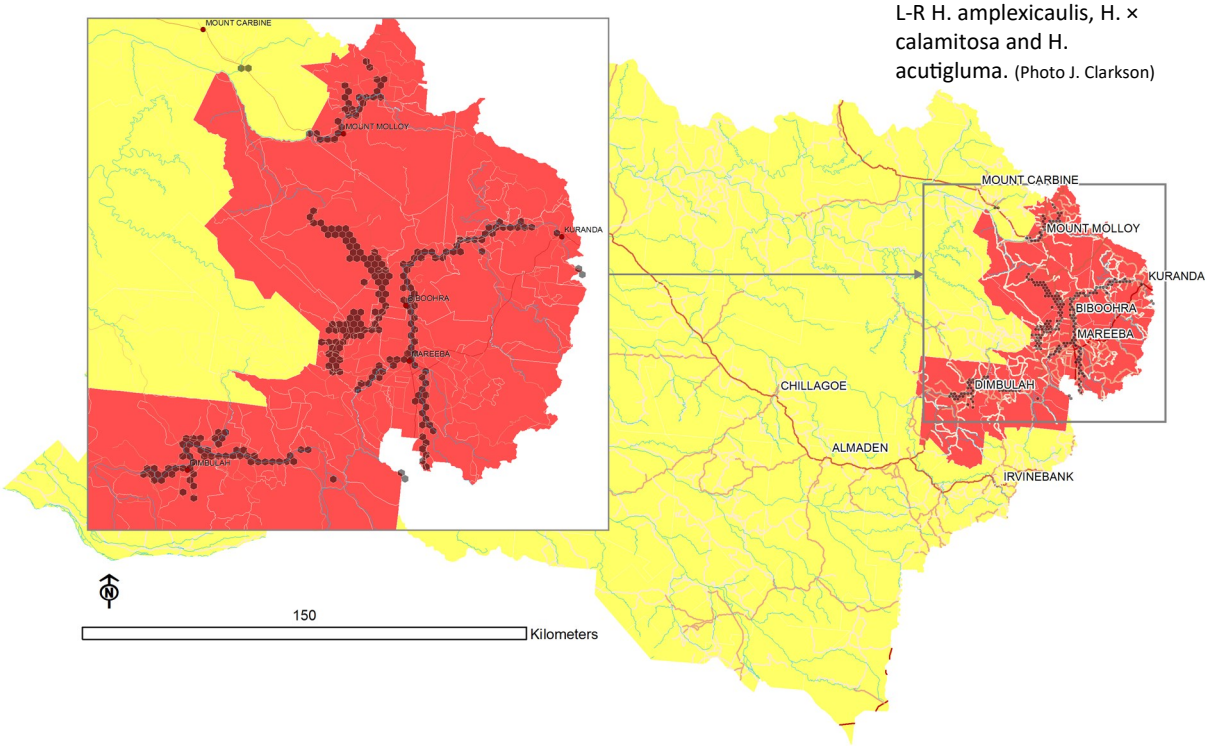


L-R H. amplexicaulis, H. × calamitosa and H. acutigluma. (Photo J. Clarkson)

Grass

Aquatic

Perennial



Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

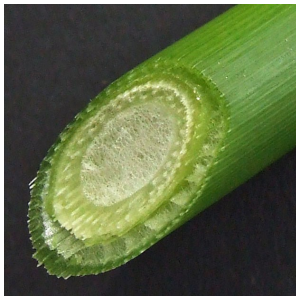
4 Do not move

5 Do not keep

6 Do not feed







Control







What is my biosecurity obligation?

In the prevention zone

Olive Hymenachne and hybrids are restricted matter under the Biosecurity Act 2014. It is an offence under the to move, share, give away or sell plants or seeds. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil.

Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.

In the asset protection zone

Olive Hymenachne and hybrids are restricted matter under the Biosecurity Act 2014. It is an offence under the to move, share, give away or sell plants or seeds. Ensure best practice weed hygiene measures are in place to reduce spread from known infestations. Maintain weed free areas. Identify high value assets and protect them from impacts where possible. Clean all watercraft prior to moving between regions, particularly lowland rivers of the Wet Tropics where Olive Hymenachne can be abundant.

Spread

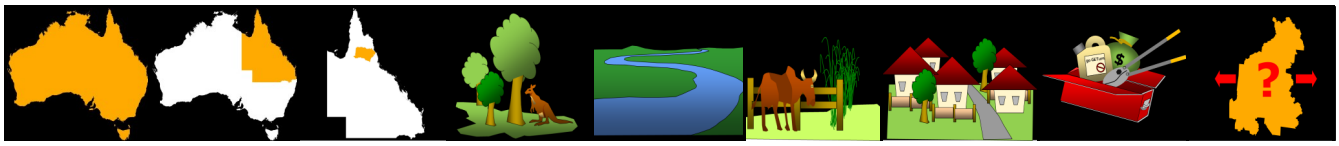






Thunbergia grandiflora (Blue Thunbergia)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	1.5/5	5.0/5	3.5/5	3.3/5	3.3/5	2.5/5	3.3/5	4.0/5

Details

Description: A rapidly growing vine with lavender-blue trumpet-shaped flowers which forms significant underground tubers. Thunbergia climbs and smothers native vegetation. The leaves may vary leaves from a choko-like shape to an oval shape with a narrow pointed tip.

Distribution: Thunbergia vine occurs as a significant infestation and scattered locations in the Kuranda area and at several isolated outbreaks near Myola, Speewah and Julatten.

Impacts: Thunbergia climbs and smothers native vegetation, killing and often pulling down mature trees with the weight of the vine. It does significant damage in riparian areas and forest edges where it can outcompete most plants.

Key projects: Eradication of infestation from dumped garden waste in Julatten.

Background

The separate species of *T. laurifolia* and *T. grandiflora* have been merged into a single species.

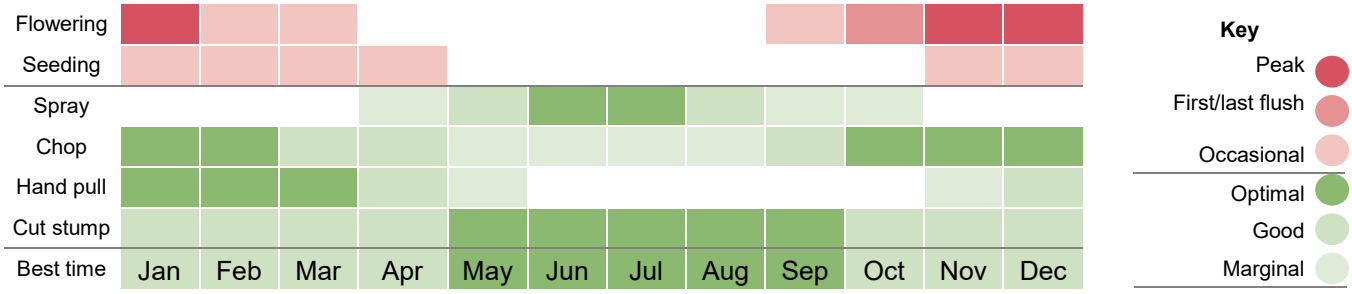
Thunbergia vine is mainly spread through the sharing of plants between gardeners. It may also be spread during floods, cyclones, or during clean-up work after these events.

Ensure best practice weed hygiene measures are in place to reduce the risk of spread to new locations. Make sure vehicles and machinery are clean before arriving and commencing work.

If you have an active infestation on your property you can assist the survey and control efforts by maintaining property access points and tracks, and not moving soil and plant material from the infestation area.

Targeted treatment of upstream properties is the most effective way to manage Thunbergia on a catchment scale. Repeat treatments are required to ensure underground tubers do not re-establish.

Control calendar



For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

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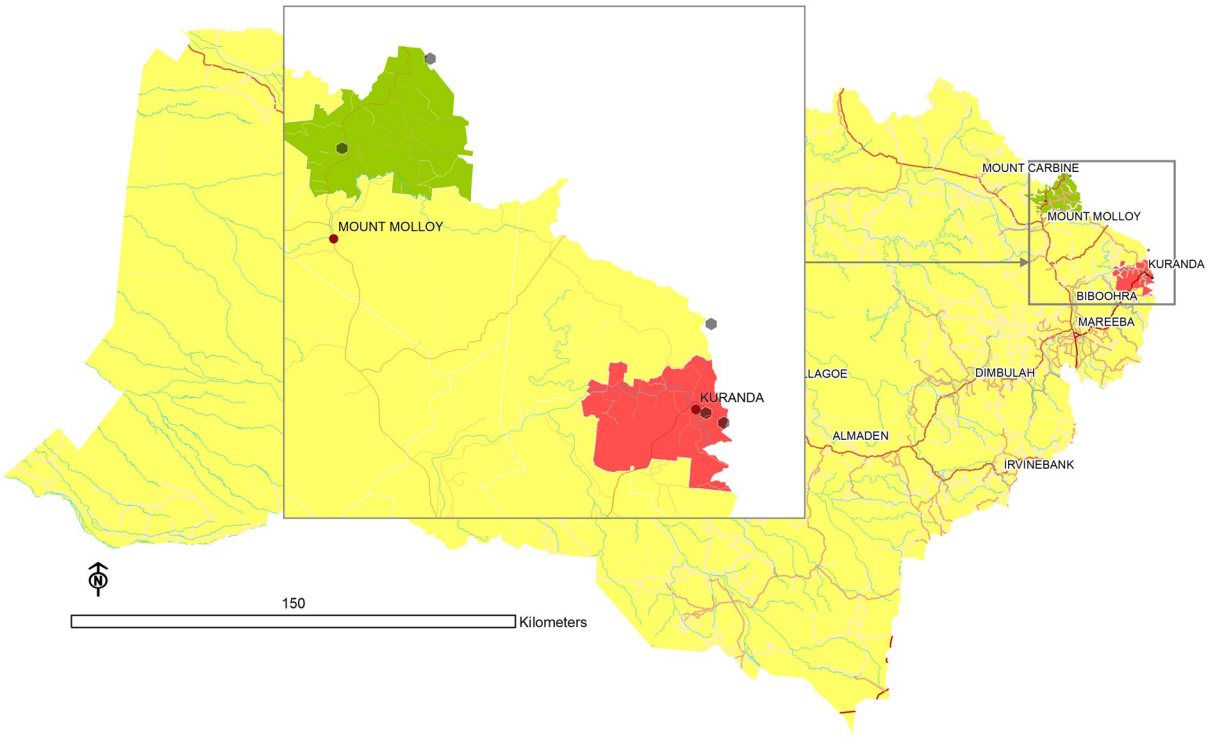
@MareebaShire

Thunbergia grandiflora (Blue Thunbergia)

Vine

Terrestrial

Perennial



Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed







What is my biosecurity obligation?

In the prevention zone	It is an offence under the Biosecurity Act to move, share, give away or sell this plant. Do not move or accept plant material or soil unless you are sure it is from a clean source Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.
In the eradication zone	It is an offence under the Biosecurity Act to move, share, give away or sell this plant. Seek advice prior to works in vicinity of known locations. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.
In the asset protection zone	If your property has an active infestation make sure your green waste does not contain live plant material and is not disposed of in areas where the plant might establish like creeks and bushland.

Control

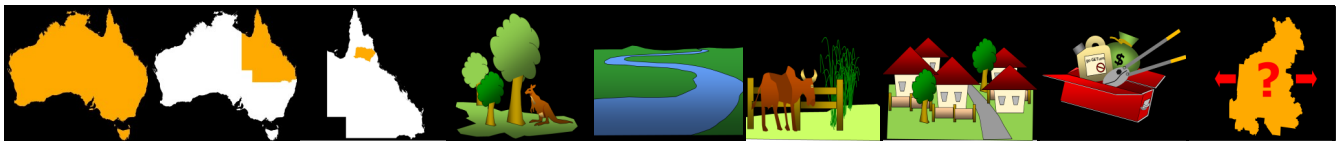


Spread



Lantana camara (Lantana)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
2.5/5	1.5/5	3.0/5	3.7/5	3.6/5	4.0/5	2.1/5	2.6/5	2.6/5

Details

Description: Lantana is a heavily branched shrub that can grow in compact clumps, dense thickets or as a climbing vine. The stems of lantana are square with small, re-curved prickles. The small leaves (6cm) are covered in fine hairs, bright green above, paler underneath and have round-toothed edges. Flowers are variable ranging from purple to orange.

Distribution: Common and widespread across the Wet Tropics ranges bur less abundant in drier districts where it is often restricted to monsoon scrubs and waterways.

Impacts: A significant weed of natural systems and grazing areas. Lantana displaces understorey species and alters fire regimes. Lantana can cause poisoning in stock not familiar with it.

Key projects: Lantana is one of a suite of widespread weeds managed in key area environmental areas. It is also a serious weed of management for graziers.

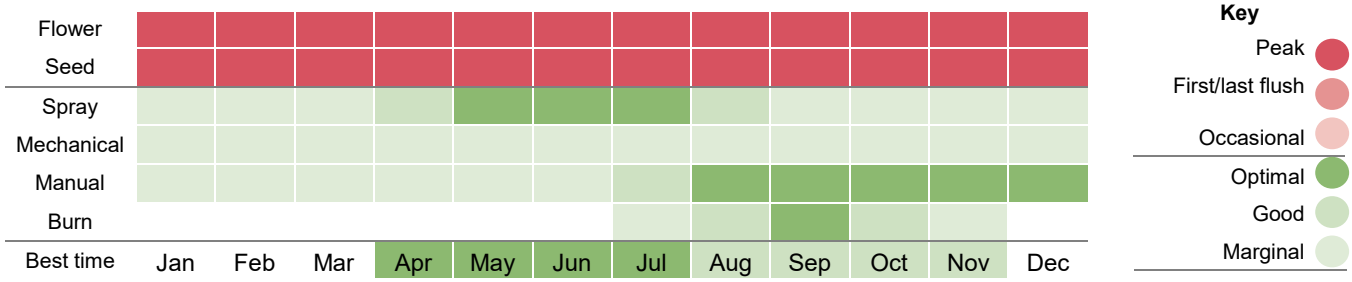
Background

Lantana is widespread in the eastern area of Mareeba Shire. Because it is bird dispersed it can quickly re-infest areas which have been cleared of the weed if no ongoing management is in place. The use of appropriate fire regimes, mechanical control and grazing practices can assist to protect both environmental and grazing assets in woodland areas. Western flowing rivers of the gulf catchments may be susceptible to Lantana if it is allowed to spread from the east.

Integrated management to reduce impacts including strategic herbicide control and fire management are essential in key environmental areas.

There are a wide range of biocontrol agents present in wild populations which may assist to reduce the vigour or reproduction of lantana. Most are seasonal and will respond when conditions are suitable so they should not be relied upon as the sole management tool.

Control calendar



For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

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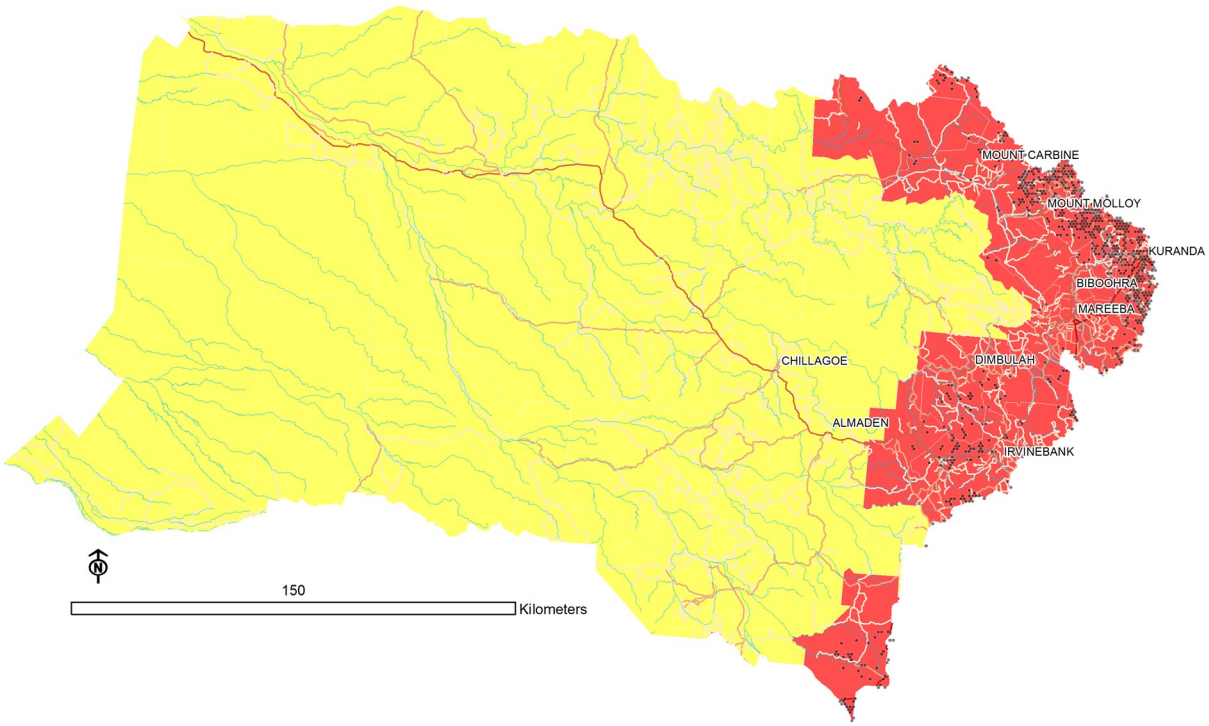
@MareebaShire

Lantana camara (Lantana)

Woody

Terrestrial

Perennial



Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed







What is my biosecurity obligation?

In the prevention zone

It is an offence under the Biosecurity Act to move, share, give away or sell this plant.
Seek advice prior to works in vicinity of known locations. Do not move or accept plant material or soil unless you are sure it is from a clean source

In the asset protection zone

Maintaining appropriate grazing and fire regimes will assists to reduce the density and distribution of Lantana. Impacts on key assets can be reduced by using an integrated approach to management including grazing management, biocontrol, herbicide, fire and mechanical tools.

For more information on best management tools and approaches refer to the Lantana best practice control guide produced by Weeds of National Significance.

Control

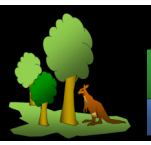
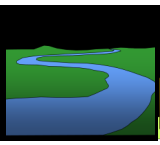
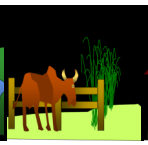


Spread



Senna obtusifolia (Sicklepod)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	1.5/5	3.0/5	3.7/5	3.6/5	4.0/5	2.1/5	2.6/5	2.6/5

Details

Description: Sicklepod is a vigorously growing, very competitive woody shrub to 1.5-2m tall and 1m wide with yellow 'senna' flowers and long curved seed pods. Normally an annual although plants that have been slashed or survive chemical application often re-shoot and survive another year.

Distribution: Sicklepod is increasing in distribution in Mareeba Shire due to spread on roadsides and rivers. It occurs in scattered locations in the eastern catchments and is moving from the Burke Development Road and waterways in the central west.

Impacts: Sicklepod can invade and completely dominate pastures, grasslands, river beds and wetland margins. It becomes a major weed of crops within 2 or 3 seasons.

Key projects: intensive control programs are underway in outliers.

Background

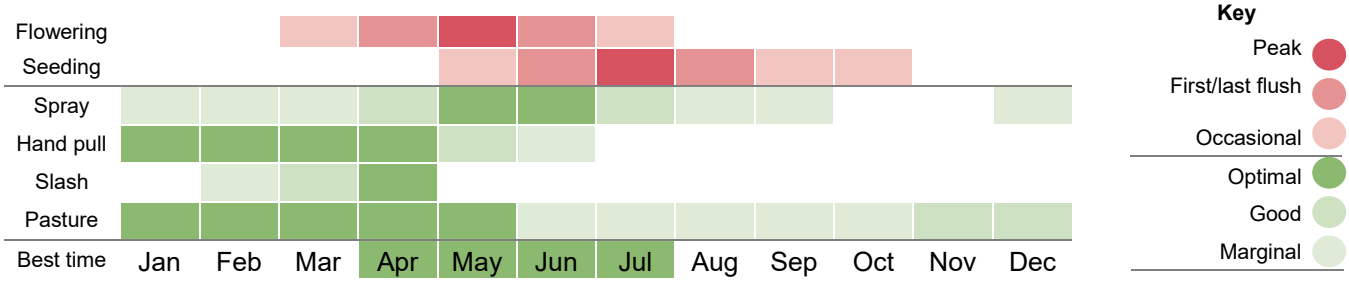
Recent spread along roads and waterways is spreading sicklepod to new areas in the central west of Mareeba Shire. Landholder should keep an eye out in the Staaten, Walsh and Mitchell catchments.

Ensuring adequate buffers are maintained between active (growing) and dormant (seeds in soil) infestations will reduce likelihood of spread along watercourses and road ways.

Mapping infestations will help to identify key assets at risk and steps which might be taken to manage the impact of sickle pod. Careful follow up after disturbance such as movement of soil, fire or heavy grazing will limit the establishment of dense infestations.

Sicklepod does well in disturbed areas and can quickly take over fallowed land and roadsides. Maintaining healthy pastures, headlands and crops as well as controlling outbreaks in drainage lines and riparian areas can reduce impacts on adjoining areas.

Control calendar



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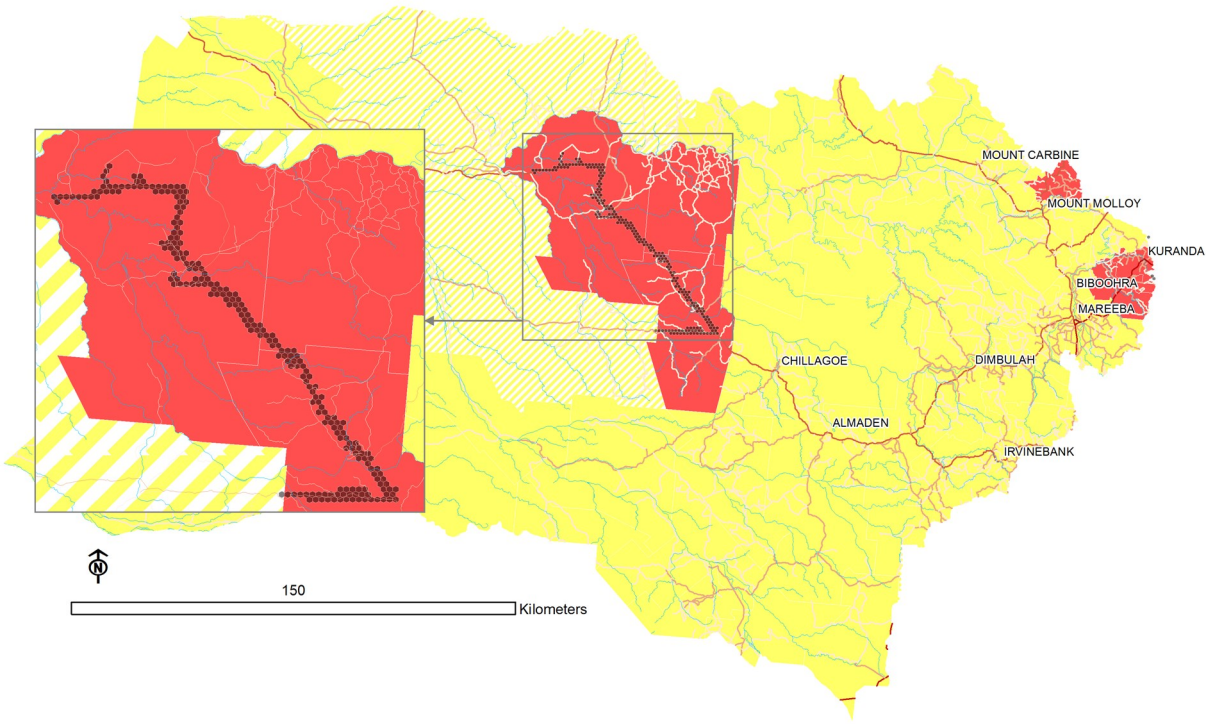
@MareebaShire

Senna obtusifolia (Sicklepod)

Woody

Terrestrial

Annual



Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed







What is my biosecurity obligation?

In the delimitation zone	Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.
In the prevention zone	It is an offence under the Biosecurity Act to move, share, give away or sell produce contaminated with this plant. Seek advice prior to works in the vicinity of known locations. Do not move or accept plant material or soil unless you are sure it is from a clean source. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.
In the asset protection zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Identify high value assets and protect them from impacts where possible.

Control

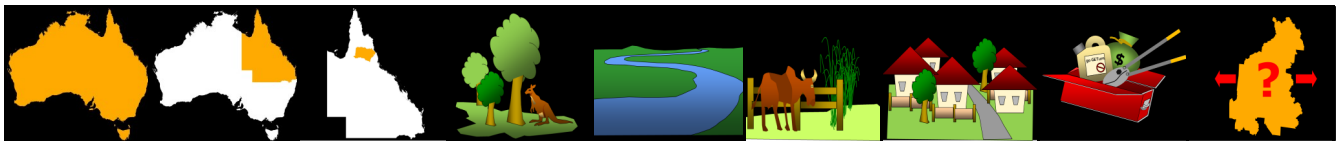


Spread



Leonotis nepetifolia (Lion's tail)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	0.0/5	4.0/5	3.0/5	3.0/5	4.0/5	1.0/5	5.0/5	5.0/5

Details

Description: Lions tail is an erect, sparsely branched annual herb up to 1-2m tall. It has four angled stems with opposite leaves and compound orange flowers. The spherical seed pods are held long into the dry season and are an important cue for identification.

Distribution: A single localised infestation occurs in the Wrotham Park district . Most outbreaks of lions tail are associated with gardens, particularly around older or historical settlements.

Impacts: A weed of environment and production Lions tail can outcompete native grasses and pastures. It will also grow in riparian zones, river banks and flood outs n the tropical savannah.

Key projects: An ongoing management program is removing a single outbreak scattered over a 3km square area.

Background

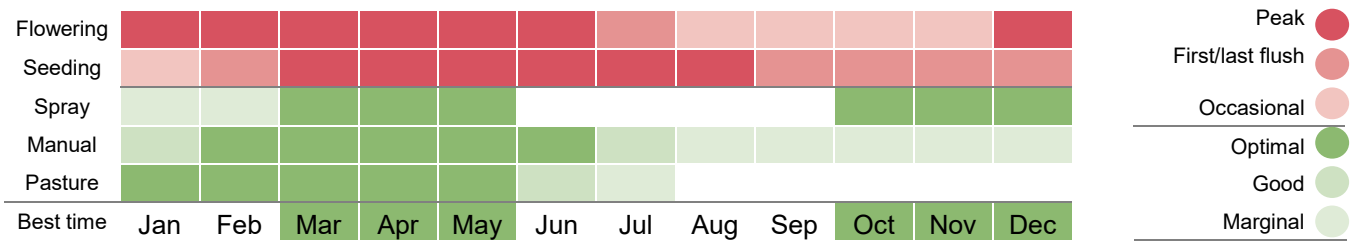
Lions tail prefers disturbed soils and will usually be found growing in sites which have been subject to overgrazing or where cattle camp under trees. It is a heavy seed producer and once established it can continue to outcompete native and improved pastures.

Cleaning down machinery and plant between movements between properties will assist to reduce spread. Spelling stock in a holding paddock for at least 7 days prior to turnout or movement will ensure any ingested seed is passed before moving . Ensuring raw materials like quarry products are sourced from a clean site will assist to prevent the introduction of lions tail.

Ensuring adequate buffers are maintained between active (growing) and dormant (seeds in soil) infestations will reduce likelihood of spread along watercourses and road ways.

Mapping infestations will help to identify key assets at risk and steps which might be taken to manage the impact of lions tail . Careful follow up after disturbance such as movement of soil, fire or heavy grazing will limit the establishment of dense infestations.

Control calendar



For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

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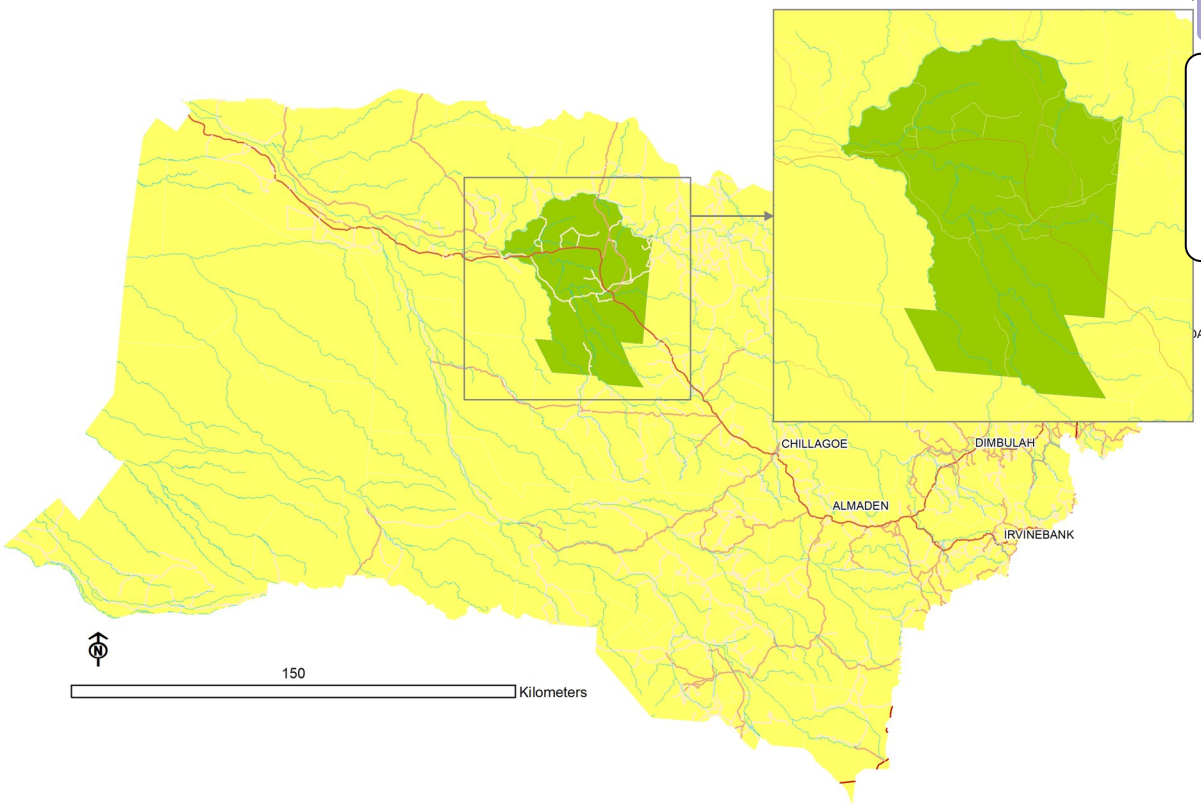
Leonotis nepetifolia (Lion's tail)

Herb

Terrestrial

Annual

General Biosecurity Obligation (GBO) applies









Control







What is my biosecurity obligation?

In the prevention zone

It is an offence under the Biosecurity Act to move, share, give away or sell produce contaminated with this plant.

Seek advice prior to works in vicinity of known locations. Do not move or accept plant material or soil unless you are sure it is from a clean source. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.

In the eradication zone

Maintaining healthy pasture and ground cover will assist in the management of lions-tail. Restricting stock movement to and from infested areas is essential to recue spread to new locations.

Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Report any suspected outbreaks or detections outside of the known area to Mareeba Shire Council on 1300 308 461.

Spread

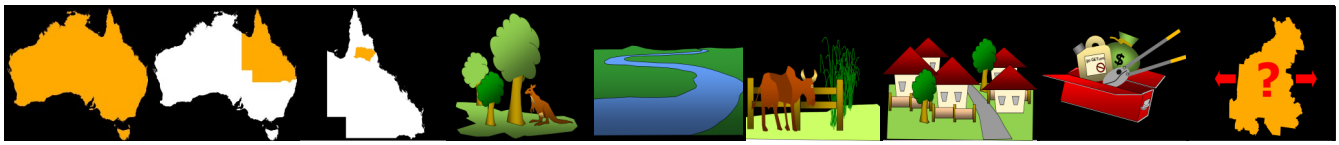






Giant Rats tail grasses *(GRT and other Sporobolis spp.)*

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	1.5/5	4.0/5	3.0/5	3.0/5	4.0/5	1.0/5	5.0/5	5.0/5

Details

Description: A group of robust, upright perennial grasses 0.6 –1.7 metres tall. Flower spikes are about 40 cm long and transform from a distinctive dark 'rats tail' shape when young to an open pyramid when mature. Leaves are narrow and tough and can be rasp like to touch. Identification of weedy *Sporobolus* grasses can be difficult. Outside of areas of known distribution a herbarium specimen should be collected to aid identification.

Distribution: Scattered across most of the eastern Tablelands but in higher densities in Mareeba and surrounds. Prefers drier savannah climate.

Impacts: A large stature species which can drastically outcompete desirable pastures. Unpalatable to stock. Is a major problem in overgrazed or disturbed systems. Invades creek lines and woodlands in drier savannah environments. Rats tail grasses are well adapted to fire.

Key projects: Priority is to remove GRT from roads and accesses to prevent further spread. Individual properties should ensure property is kept clean and fence lines /access tracks are managed.

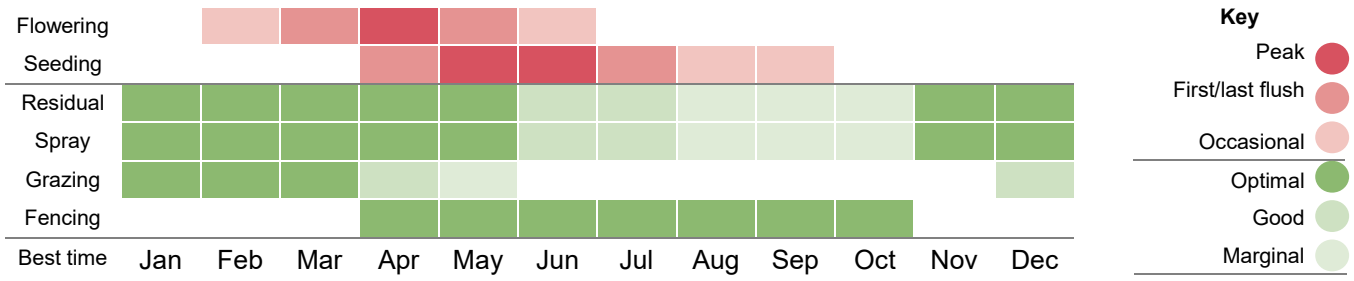
Background

Giant rats tail grasses were originally introduced as contaminants in pasture seed and have now adapted well to large areas of eastern Australia. They are very robust group of grasses and can tolerate heavy grazing, fire and dry seasons either as clump forming adult plants or as seeds.

They have low palatability when mature, are difficult to control, can affect cattle health and productivity, outcompete desirable pasture grasses and cause significant degradation of natural areas.

They are spread via vehicles, machinery, stock and contaminated hay. Sourcing hay and raw materials from clean sources will help to prevent accidental introduction. Monitoring roadsides and tracks during the growing season will assist in detecting new outbreaks before they establish. Spelling stock in holding paddocks prior to movement will also reduce spread into new areas.

Control calendar



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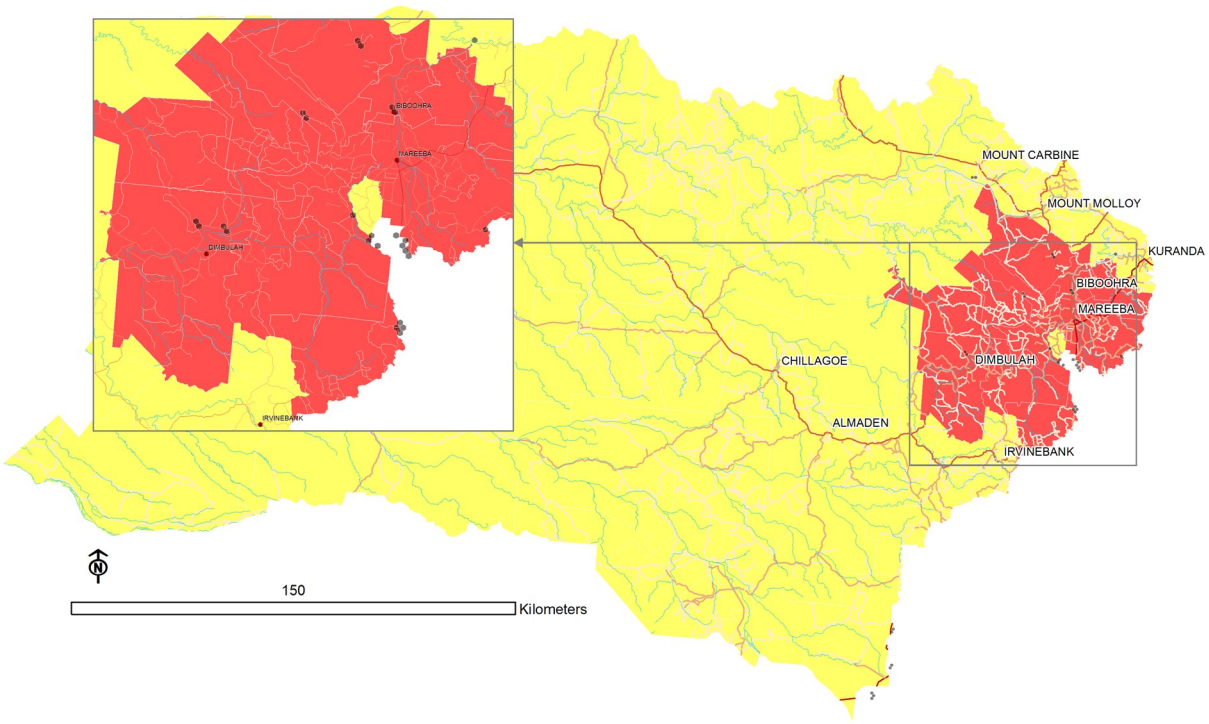
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Giant Rats tail grasses *(GRT and other Sporobolis spp.)*

Grass

Terrestrial

Perennial



Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed







Control







What is my biosecurity obligation?

In the prevention zone

It is an offence under the Biosecurity Act to move, share, give away or sell produce contaminated with this plant.
Seek advice prior to works in vicinity of known locations. Do not move or accept plant material or soil unless you are sure it is from a clean source.
Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.

In the asset protection zone

Maintaining healthy pasture and ground cover will assist in the management of rats tail grasses. Restricting stock and machinery movement to and from infested areas is essential to recue spread to new locations .Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Hay and produce contaminated with GRT cannot be sold or transported.

Spread

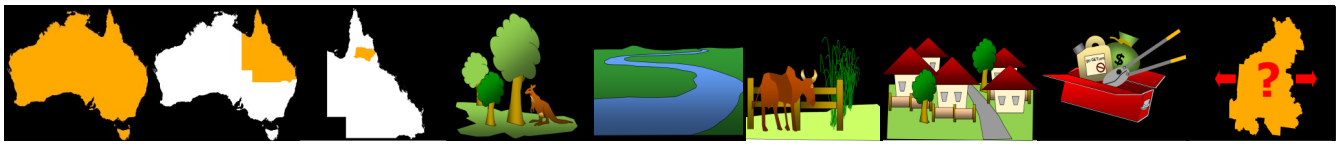






Mimosa diplotricha (Giant sensitive plant)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	1..5/5	4.0/5	3.6/5	3.3/5	3.0/5	2.2/5	3.4/5	3.7/5

Details

Description: A shrubby or sprawling annual that has four angled branches with a line of sharp, hooked prickles along the angles. Similar to the common sensitive weed but grows as a small shrub rather than a ground cover. The seed is very long-lived and may remain viable for up 50 yeas in some situations.

Distribution: Giant sensitive plant is isolated to several small outbreaks on rural properties in Julatten and Kuranda. Outside of Mareeba Shire it occurs in all Wet Tropics coastal catchments but is most common in Hinchinbrook and Cassowary Coast.

Impacts: Giant sensitive plant chokes up cane, pastures and crops causing lost productivity and contaminating produce. It can grow as free-standing shrub or a scrambling climber smothering pasture and native vegetation.

Key projects: All known sites are under monitoring in the Mareeba Shire area. Any suspected sightings should be reported to MSC. A successful bio-control agent is present in the Wet Tropics which significantly impacts developing seeds.

Background

Because the seed of GSP is so long-lived priority should be given to managing roadside and access infestations to reduce further spread. Careful management of pastures and spelling infested areas while management takes place. A successful biocontrol agent exist which can assist to supress seed production. Selective herbicide or grubbing of individual plants prior to flowering is essential to prevent further seed development.

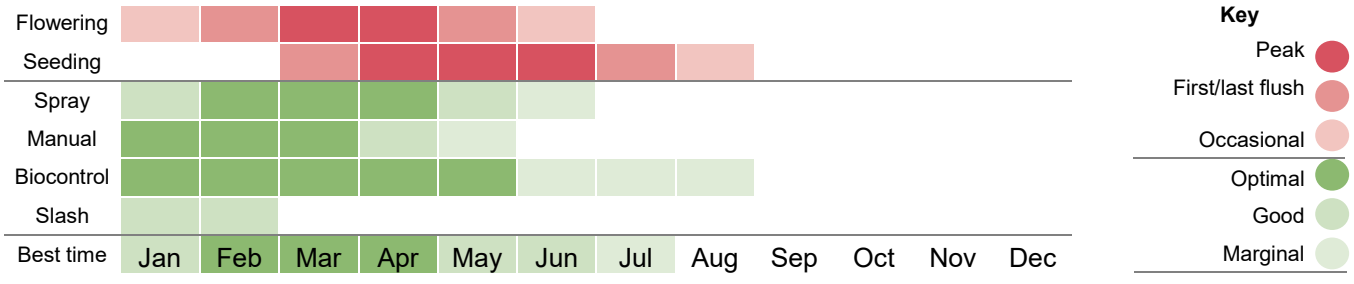
Ensuring adequate buffers are maintained between active (growing) and dormant (seeds in soil) infestations will reduce likelihood of spread along watercourses and road ways.

Giant Sensitive Plant is native to Brazil. It was found in a borrow pit in the Little Beatrice area on the Palmerston Highway in 2008 and has naturalised in the high rainfall areas of coastal North Queensland, from Ingham to Cooktown, and around Mackay.

Giant Sensitive Plant usually flowers and seeds from April through to the end of June, but in years when there has been minimal cold weather, plants will seed from April through to December. Seeds are viable for up to 50 years. Seeds are transported by running water, vehicles, machinery, stock and contaminated earth. Tablelands Regional Council continues to be vigilant and monitor for other outbreaks, particularly at borrow pits and spoil dump sites.

Common Sensitive Plant (*Mimosa pudica)* is similar to Giant Sensitive Plant except for its low sprawling form and growth size between 15-45cm high.

Control calendar



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Mimosa diplotricha (Giant sensitive plant)

Woody

Terrestrial

Perennial

Biosecurity Act Restricted matter

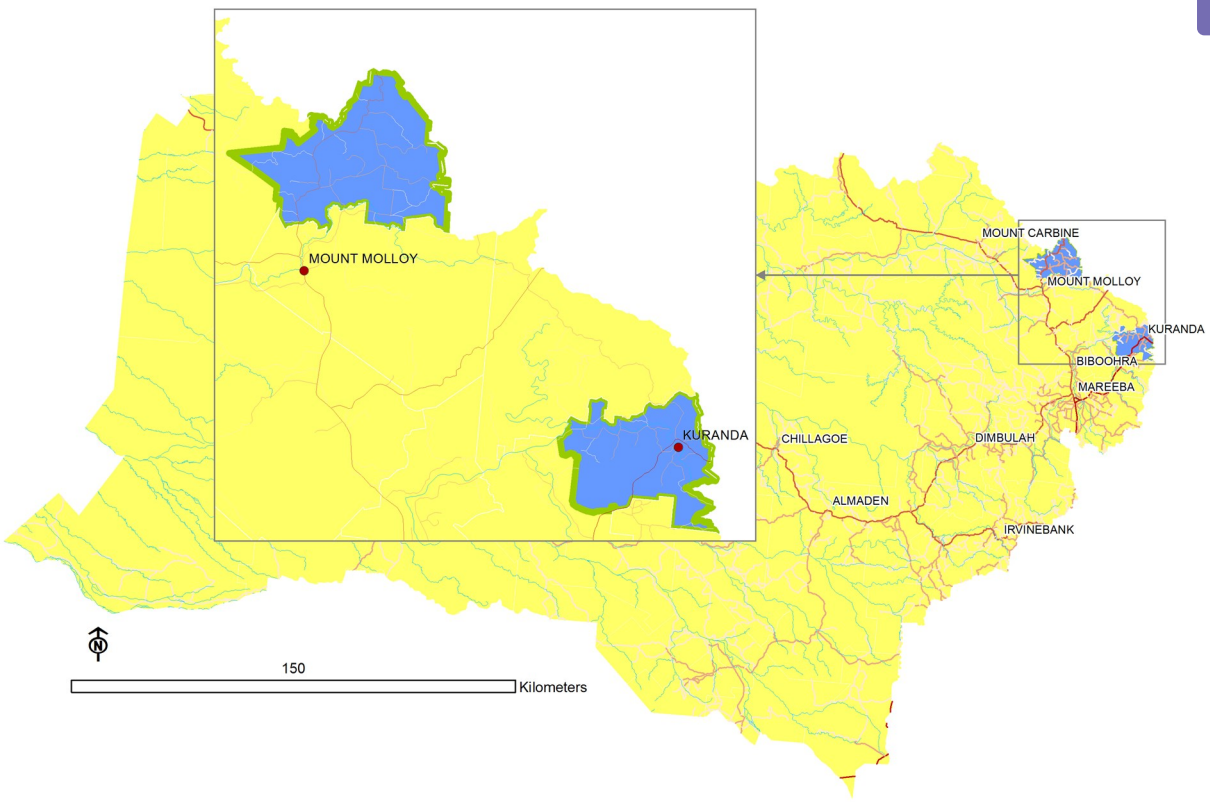
2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed









What is my biosecurity obligation?

In the prevention zone	Seek advice prior to works in vicinity of known locations. Do not move or accept plant material or soil unless you are sure it is from a clean source. Report any suspected outbreaks or detections to Mareeba Shire Council on 1300 308 461.
In the intensive control zone	Maintaining healthy pasture and ground cover will assist in the management of GSP. Restricting stock and machinery movement to and from infested areas is essential to reduce spread to new locations. Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations.

Control

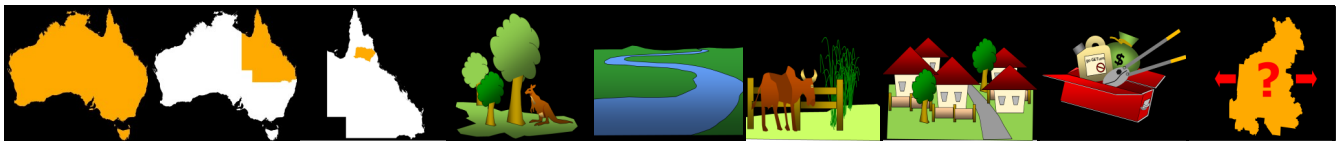


Spread



Clidemia hirta (Koster's curse)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	2.5/5	5/5	4.2/5	3.7/5	2.6/5	2.6/5	4.3/5	3.8/5

Details

Description: A perennial shrub 0.5 to 2m high. Koster's curse has distinctive opposite leaves with parallel veins with a quilted appearance and covered in short stiff hairs. Small white flowers and deep purple/blue berries covered in short hairs. Can be easily confused with native bluetongue but distinctive leaves and fruit are the key features.

Distribution: Current Australian distribution is restricted to the Julatten area and an isolated outbreak in the Maple Creek area of Wooroonooran National Park.

Impacts: Koster's curse is a serious pest of the environment and agriculture in over 16 countries. It has potential to spread to humid coastal districts of Australia. It smothers native vegetation and pastures by forming dense thickets.

Key projects: Koster's curse is no longer the target of a National eradication program.

Background

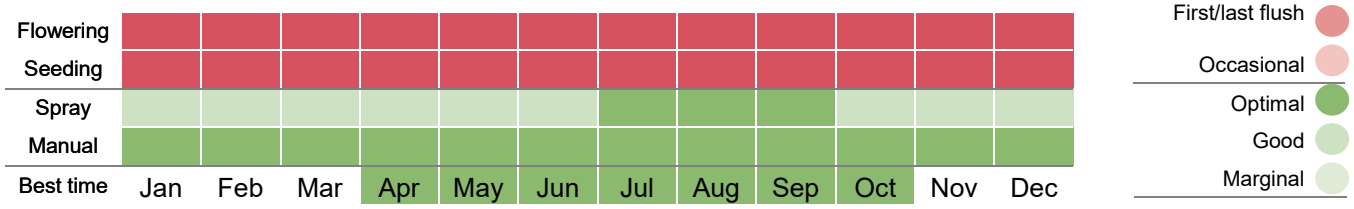
In its native range Koster's curse is an early coloniser in rainforest and cleared ground where it prefers disturbed areas like creek banks and cuttings.

Koster's curse can reach flowering age from seed within 275 days and within another 100 days can produce fruit. An individual plant can produce 1,000s of fruit with each containing an average of 800 seeds. Research indicates mature plants are able to produce over 750,000 seeds in their first year of production.

Koster's curse fruit is eaten and spread by birds so it can disperse long distances away from fruiting plants. Maintaining a lookout in areas of disturbance or where other fruiting weeds like giant bramble and lantana occur can assist with early detection.

Vehicle and footwear hygiene is important to reduce the risk of spread of Koster's curse. The seed is long lived and can be stored in soil for over ten years. Koster's curse establishes and grows best in areas of disturbance. Regular checks of forest edges and maintenance/control of other bird attracting weeds like giant bramble and lantana may make your property less susceptible.

Control calendar



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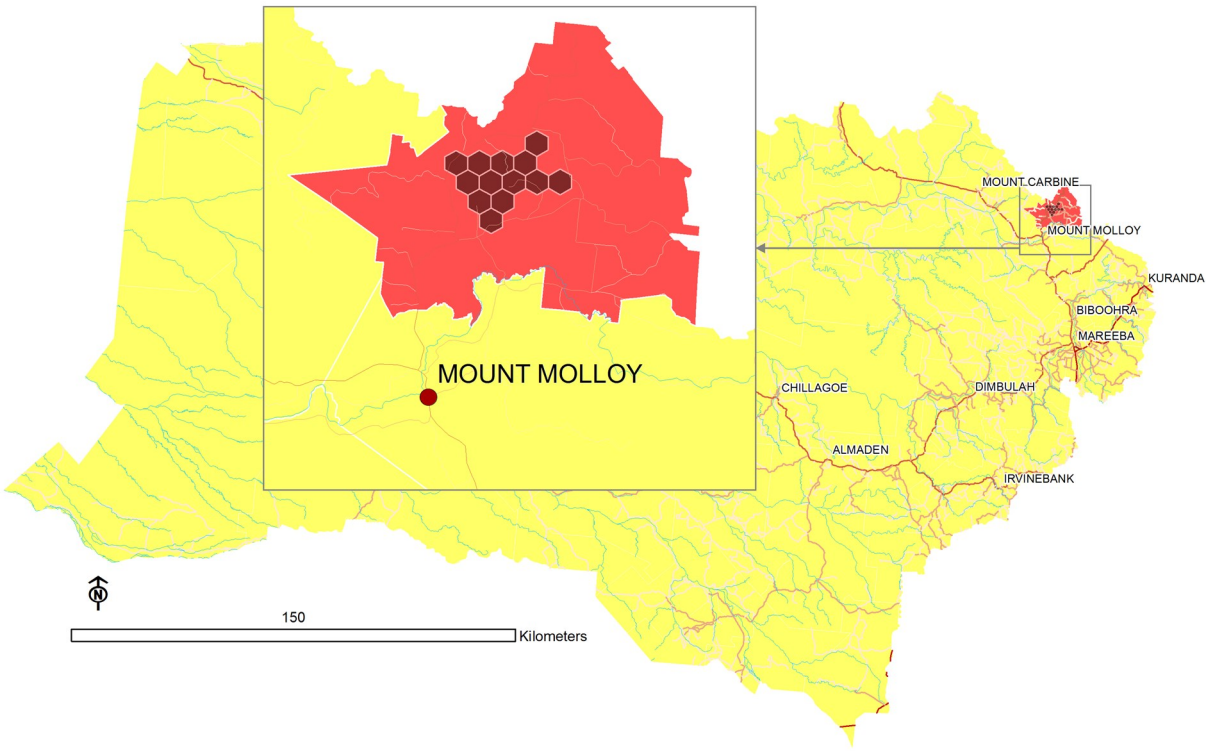
@MareebaShire

Clidemia hirta (Koster's curse)

Woody

Terrestrial

Perennial



Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed







Control



What is my biosecurity obligation?

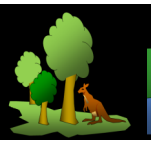
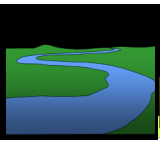
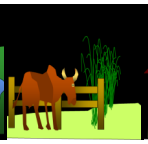
In the prevention zone	Minimise the risk the of spread by ensuring potted plants, machinery, vehicles, materials and produce are free from seed contamination and from a weed free source. Respond to any suspected sightings.
In the asset protection zone	Ensure that the movement of materials, soil, machinery, vehicles and produce from your property do no add to the risk of spread. Follow any instructions on signage in the vicinity of the known infestation.

Spread



Sus scrofa (Feral Pig)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	2.5/5	5/5	4.2/5	3.7/5	2.6/5	2.6/5	4.3/5	3.8/5

Details

Description: Feral pigs include all pigs ranging from typical black wild pigs to buff or spotted black or white which may resemble a typical farmed pig. By definition a feral pig is any pig which is not domesticated and is living in a wild state. They are generally nocturnal, and camp in thick cover during the day. Feral pigs are omnivorous and can range from 5 to 50 square kilometres. Feral pigs breed throughout the year often producing two weaned litters per year.

Distribution: Common and widespread within some areas of the Mareeba Shire. Feral pigs range are able to exist wherever there is water available from rainforest to drier woodlands.

Impacts: Feral pigs damage crops, stock, property and the natural environment. They transmit disease and could spread exotic diseases such as foot and mouth disease or Asian swine flu if these were introduced to the country.

Key projects: Local trapping and baiting programs can assist where pigs impact on key assets.

Background

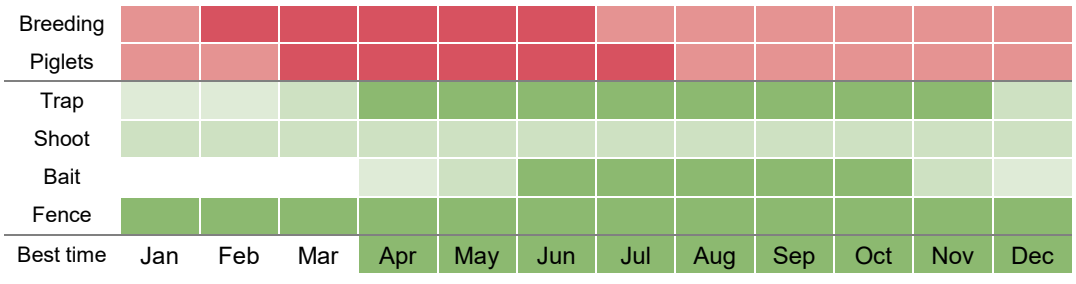
Feral Pigs can transport various weeds, diseases and pests and their foraging sites create ideal conditions for the establishment of weeds. The availability and quality of food and water are the main factors influencing feral pig distribution.

Feral pigs in the tropics tend to have a significantly larger home range size in the dry season compared to the wet season. They are intelligent, opportunistic omnivores with a rapid breeding cycle that makes them difficult to control.

Feral pigs numbers in Queensland are estimated at 3–6 million, with the majority in northern Queensland. Evidence suggests that at least 70% of the population needs to be removed or the mob will rapidly replenish to numbers that were present before the control program commenced.

Feral pigs have a negative effect on world heritage-listed natural areas, protected land, threatened species and ecosystems, parklands, reserves, essential infrastructure, drainage systems, wetlands, farmland, private, rural and peri urban land and other areas.

Control calendar



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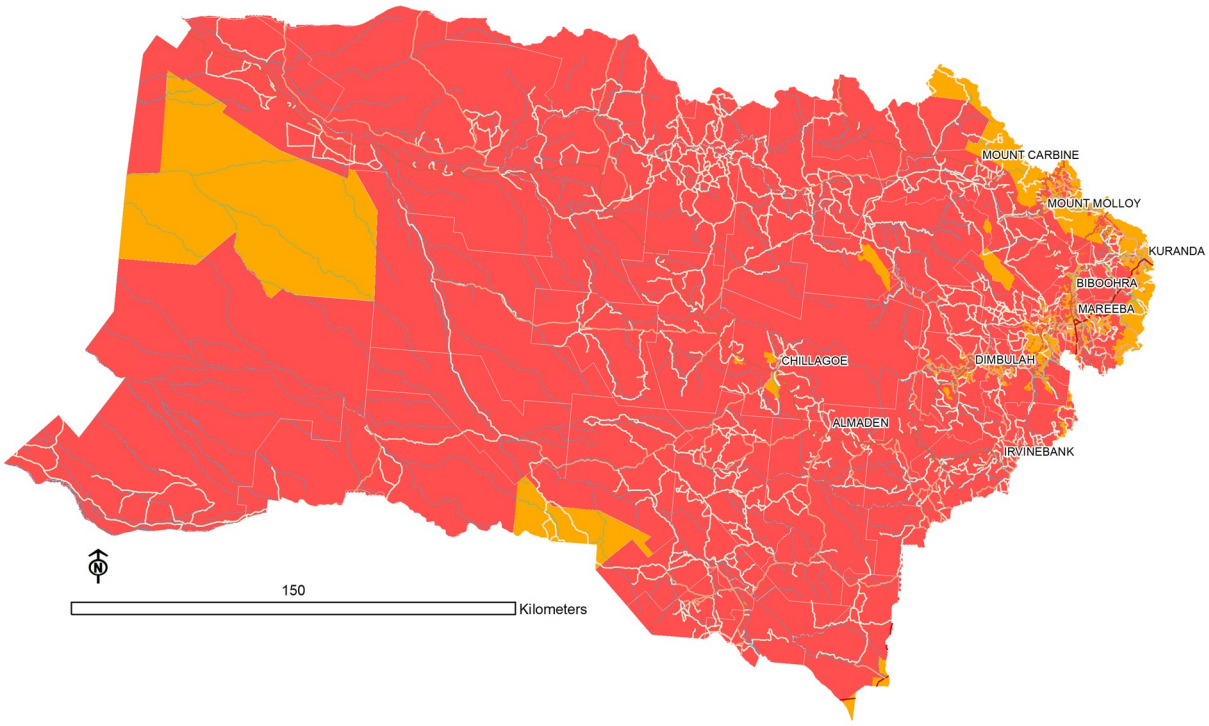
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Sus scrofa (Feral Pig)

Vertebrate

Omnivore

Conservation, Irrigated agriculture and urban assets



Biosecurity Act Restricted matter

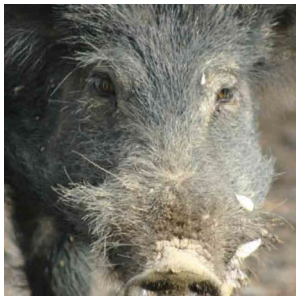
2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

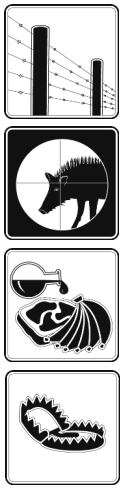
6 Do not feed







Control



What is my biosecurity obligation?

In the priority asset protection zone

Feral pigs can have a significant impact on agricultural and conservation assets. In areas of high conservation or production value management programs may have specific requirements or programs for controlling feral pigs.

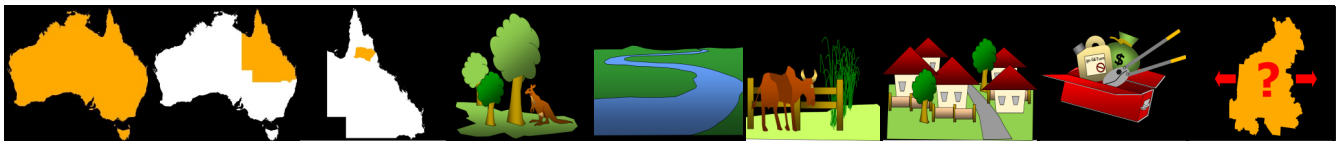
In the asset protection zone

Ensure best practice management actions are in place to reduce opportunities for feral pigs. Identify high value assets and protect them from impacts where possible. If pigs are kept they must be in a fenced enclosure and the property must have a registered Property Identification Code (PIC) even if you are not the owner of the property.

Pig proof fencing is by far the most effective measure of reducing the impacts of feral pigs on domestic gardens and small crops. Follow best practice management guidelines to ensure that non-target impacts are appropriately managed during baiting and trapping activities. Contact Mareeba Shire Council for advice on trap design, placement and management on 1300 308 461.

Canis lupis familiaris (Wild dog)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	4.0/5	5.0/5	3.0/5	2.0/5	4.0/5	3.0/5	2.5/5	2.0/5

Details

Description: Wild dogs include dingoes, wild domestic dogs and hybrids. Under the Nature Conservation Act dingoes are identified as native species within National Parks.

Distribution: Wild dogs are widespread in both the agricultural and natural landscape. They also frequently exist on the outskirts of towns and even within urban areas.

Impacts: Wild dogs can cause stock losses in calving season and prey on native animals. They also often carry parasites and pathogens. Near towns they can cause nuisance and impact on domestic animals.

Key projects: An ongoing strategic baiting program is in place to work with landholders in coordinated control operations at key times throughout the year.

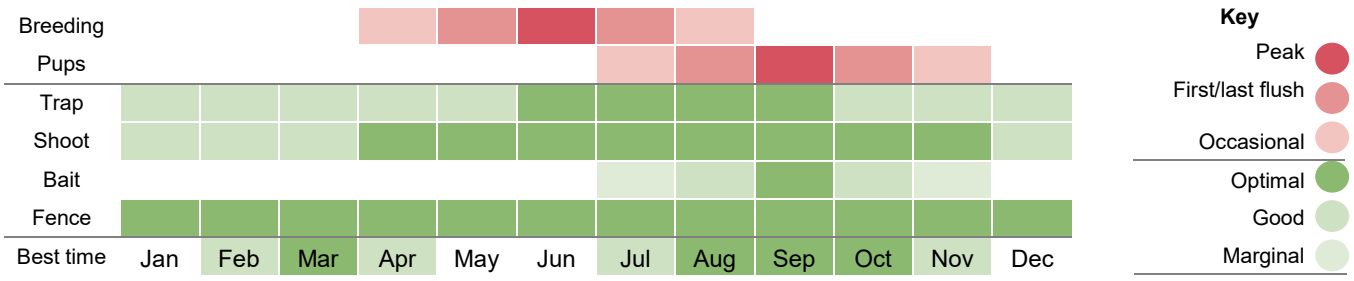
Background

Wild dogs do have defined home territories but are able to cover large distances when moving to new areas either through competition for resources or by being pushed out of areas by more dominant animals.

In urban and settled areas Mareeba Shire Council will respond to individual issues as they arise on a case by case basis. Whilst wild dogs are generally not aggressive to people they may display threatening behaviour in urban areas such as attacking domestic dogs, scavenging or stalking. Domestic pets and poultry are best protected by dog mesh fencing. Fencing also restrains your domestic animals and may assist in preventing other animals such as wallabies or pigs entering your property.

The biosecurity program does not include management of straying or problematic domestic dogs (including hunting dogs), These animals are domestic animals and are managed in accordance with Mareeba Shire Councils Local Laws. For domestic dog queries contact Council on 1300 308 461

Control calendar



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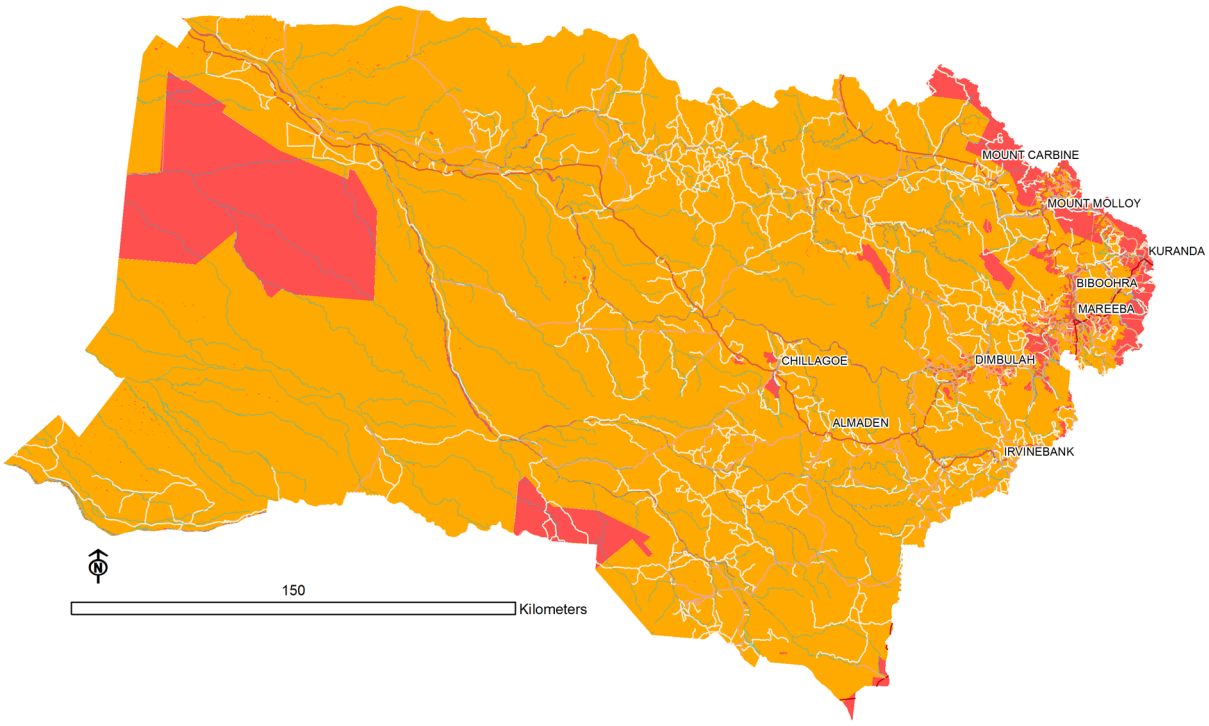
@MareebaShire

Canis lupis familiaris (Wild dog)

Vertebrate

Carnivore

Grazing and urban assets



Biosecurity Act Restricted matter

2 Must be reported

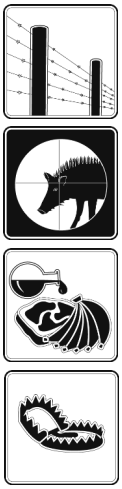
3 Do not distribute

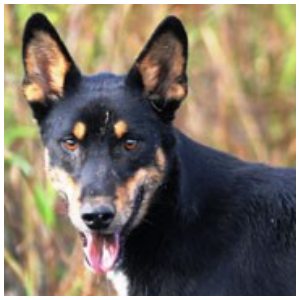
4 Do not move

5 Do not keep

6 Do not feed

Control









What is my biosecurity obligation?

In the priority asset protection zone

The wild dog is a restricted invasive animal under the Biosecurity Act 2014. It must not be moved, kept (if a dingo), fed, given away, sold, or released into the environment without a permit.

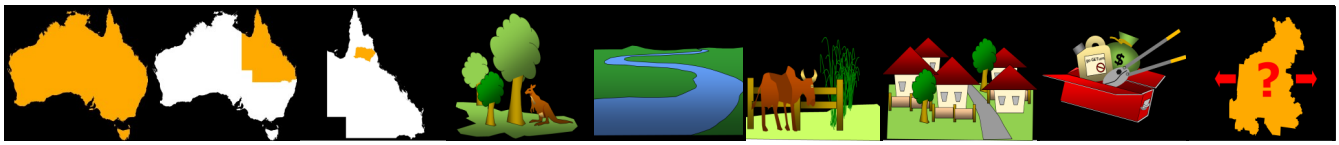
A range of control options from shooting, to soft-jaw trapping and baiting are used to control wild dogs when required.
Targeting control activities to deliver protection prior to calving in stock is the best way to reduce impacts on stock. Dog proof fencing is by far the most effective measure of reducing the impacts of wild dogs on domestic stock and pets. For domestic dog queries contact Mareeba Shire Council on 1300 308 461

In the asset protection zone

The dingo (*Canis lupis dingo*) is considered native wildlife under the *Nature Conservation Act 1992*, and are protected on national parks.

Oryctolagus cuniculus (Rabbit)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	4.0/5	5.0/5	3.0/5	2.0/5	4.0/5	3.0/5	2.5/5	2.0/5

Details

Description: Grey brown with a pale belly. Long hind legs and short front legs with large ears and dark eyes. Can also be black, white or ginger. Rabbits in be derived from wild or domestic stock.

Distribution: Widespread and often locally common in the eastern area of the Mareeba Shire. Rabbits are possibly expanding their range north and west. Distribution elsewhere in the region is uncertain but needs to be established in order to guide the next steps for management.

Impacts: Rabbits cause destruction of native vegetation with subsequent erosion of these areas. They also provide competition for food and shelter with native animals. Impacts on production contribute to grazing pressure and reduced crop production.

Key projects: Local trapping and baiting programs can assist where rabbits impact on key assets.

Background

Brought to Australia for sporting purposes in 1788, Rabbits have successfully spread from isolated populations to become one of the most widely-distributed mammals in Australia. Rabbits are found in high numbers in the southern third of Queensland with isolated populations found in the remainder of the state. Even when low in numbers they can cause significant damage to crops and native flora at the seedling stage.

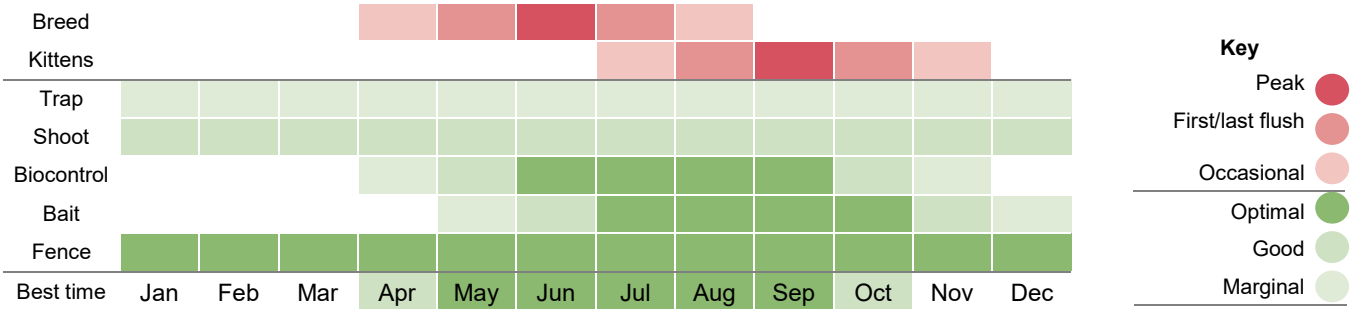
A range of control methods are available for Rabbits. The preferred method is based primarily on Rabbit numbers and an understanding of their behaviour, social structure, habitats and food preferences.

Rabbits cannot be kept for pets or raised for meat in the state of Queensland. For other purposes they can be held with a permit only.

Trapping, baiting and removal of harbour are essential components of managing rabbit populations. Timing control and property maintenance activities to times when rabbits are most active or vulnerable will assist in delivering effective control strategies.

The rabbit calici-virus is a successful biocontrol agent which only effects rabbits. A new strain of the virus, the K5, has recently been released and may be seen to reduce populations over the coming years. The virus is spread by flies.

Control calendar



For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

www.msc.qld.gov.au
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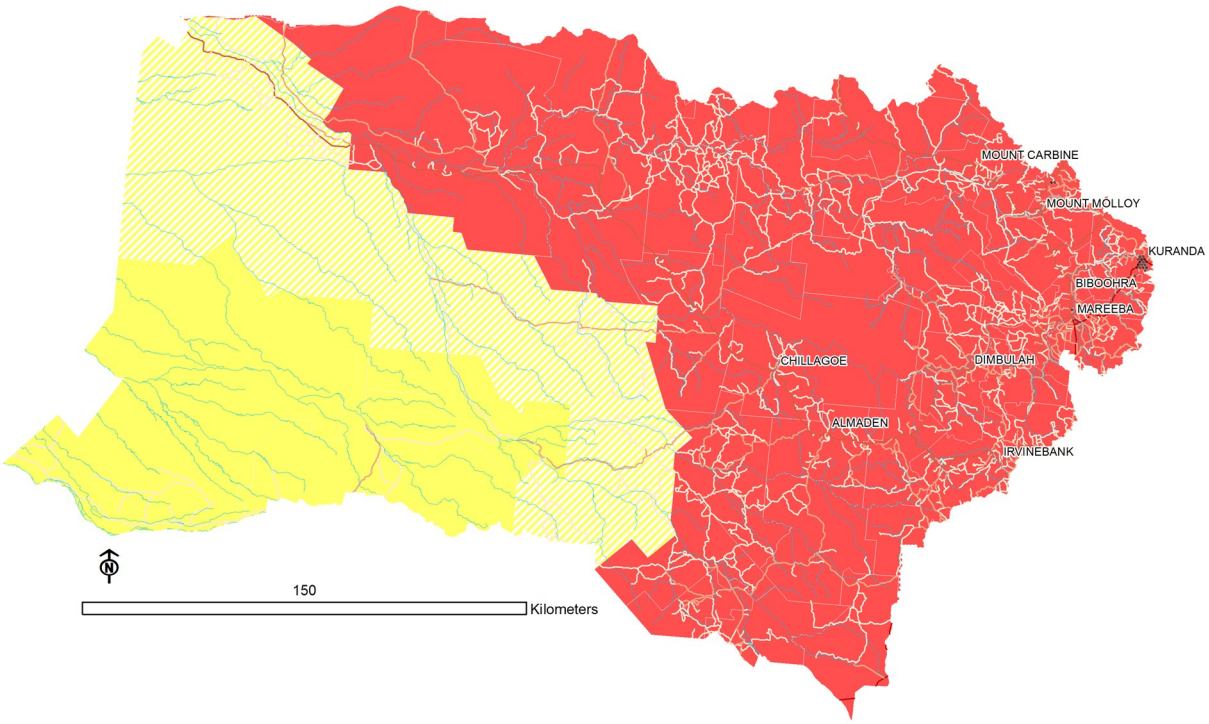
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@MareebaShire

Orictolagus cuniculus (Rabbit)

Vertebrate

Herbivore



Biosecurity Act Restricted matter

2 Must be reported

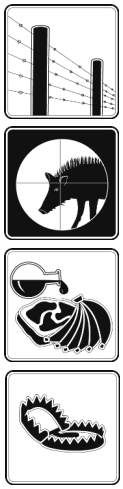
3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed

Control









What is my biosecurity obligation?

In the delimitation zone

In the prevention zone

In the asset protection zone

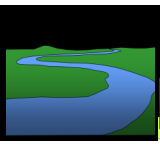
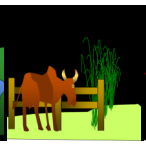
Rabbits are a restricted invasive animal under the *Biosecurity Act 2014* they cannot be kept for pets or raised for meat in the state of Queensland. For other purposes they can be held with a permit only. It is an offence to move, give away, sell or keep rabbits. Report rabbits if observed in new locations to Mareeba Shire Council on 1300 308 461.

Rabbits must not be moved, fed, given away, sold, or released into the environment without a permit. Control during the breeding season with biological control, trapping, shooting and baits being the most effective tools . Removing rabbit harbour by cleaning up rubbish and debris in impacted areas is essential to ensure effective control.

Maintain rabbit free areas. Identify high value assets and protect them from impacts where possible.

Felis catus (Feral cat)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	1.5/5	5.0/5	5.0/5	2.0/5	2.0/5	5.0/5	2.0/5	1.0/5

Details

Description: Feral cats are derived from domestic cats which have a long history of naturalisation in Australia. They are similar in appearance to domestic cats but are generally larger in size particularly around the head and shoulders. Fur is generally short and they may be any colour. Males may weigh up to 6 kg, females up to 4 kg. They are usually most active at night.

Distribution: Feral cats are present in all areas of mainland Australia and many islands.

Impacts: Feral cats eat any small to medium prey item they can catch including birds, reptiles, amphibians, mammals, fish and insects. They compete directly with native carnivores and carry toxoplasmosis which is harmful to marsupials. Feral cats scavenge around towns and may prey on domestic pets and poultry. They are potential carriers of the rabies virus if it were to enter Australia.

Key projects: Feral cats are usually not managed on a landscape scale but are targeted in species recovery programs and protection of key environmental assets.

Background

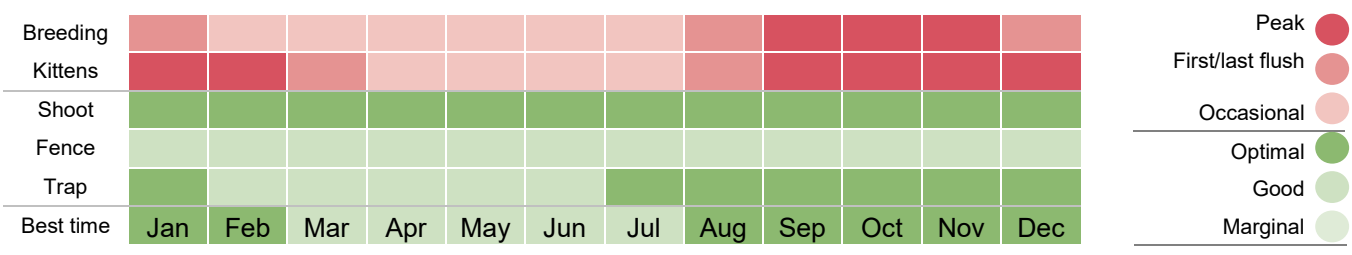
As a result of the lack of broad scale management options for the control of feral cats (i.e. baiting programs) there is currently no coordinated management program active within the Mareeba Shire local government area.

Despite this a range of management options that can be applied at a local level do exist and these include shooting, trapping using both cage and leg hold traps, restricting access to potential food sources such as dump points and responsible domestic cat ownership (de-sexing, keeping cats confined etc.). Integrated management utilising a number of these methods is recommended.

While feral cats pose a threat to all native wildlife particular attention to management is required in areas where key biodiversity assets occur. Feral Cats pose a threat to all native wildlife and particular attention is required in areas where key biodiversity assets occur. Feral Cats can capture prey up to 3kg in size but more commonly hunt small mammals, reptiles and birds. Feral Cats have been implicated in the extinction of several Australian mammal species and are present across over 99% of Australia.

Domestic cats are managed in accordance with local laws. For domestic cat enquires contact Mareeba Shire Council on 1300 308 461.

Control calendar



For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

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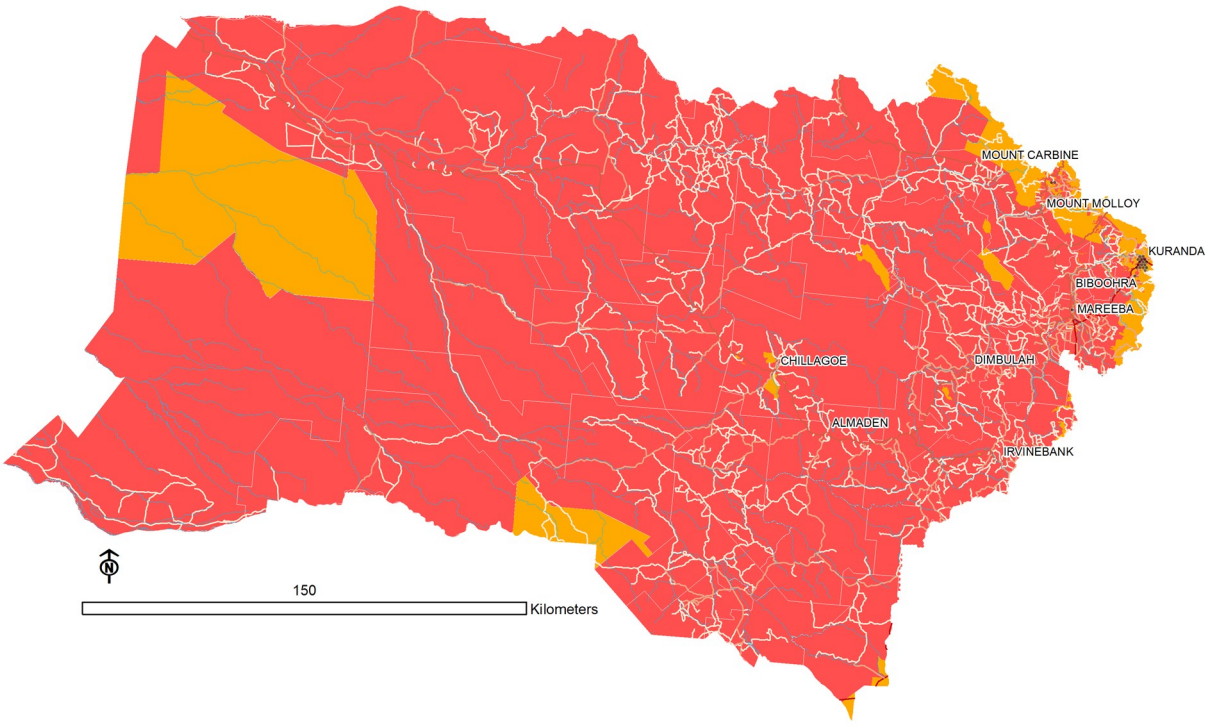
1300 308 461

@MareebaShire

Felis catus (Feral cat)

Vertebrate

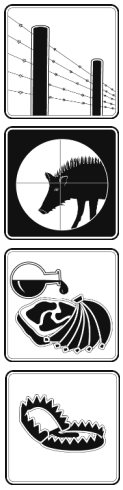
Herbivore



Biosecurity Act Restricted matter

- **2** Must be reported
- **3** Do not distribute
- **4** Do not move
- **5** Do not keep
- **6** Do not feed

Control







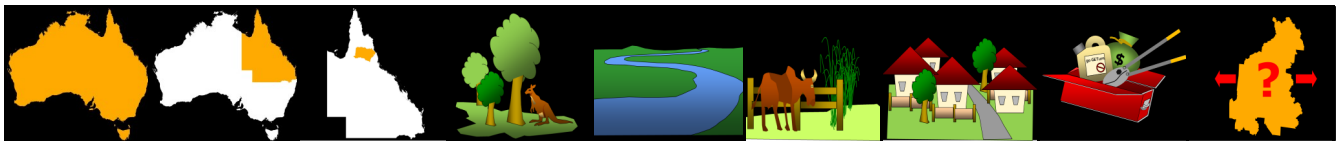


What is my biosecurity obligation?

In the priority asset protection zone	Across Australia feral cats have been implicated in the decline or extinction of native species. In areas of high faunal value or where vulnerable wildlife populations occur management programs may have specific requirements or programs for controlling feral cats.
In the asset protection zone	Feral cats are restricted matter under the Biosecurity Act 2014. They must not be moved, fed, given away, sold, or released into the environment without a permit. This includes releasing or dumping of domestic cats. The description of feral cat includes Bengal cat hybrids derived from *Prionailurus bengalensis x Felis catus.* Any other species of cat is prohibited in Queensland and must be reported within 24 hours to Biosecurity Queensland on 13 25 23. Domestic cats are managed in accordance with Mareeba Shire Councils local laws.

Anoplolepis gracilipes (Yellow crazy ant)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
0.0/5	1.5/5	5.0/5	5.0/5	2.0/5	3.0/5	5.0/5	4.0/5	4.0/5

Details

Description Yellow crazy ants are slender ants, about 4mm long, with long legs, large eyes and very long antennae. Coloured yellow to orange, they have a brown abdomen which may be faintly striped. They move in a distinctly erratic or 'crazy' manner when disturbed.

Distribution Yellow crazy ants were first introduced to Cairns in 2001. They are now found over about 2,000ha in numerous infestations between Cairns and Gordonvale and near Kuranda. The ants have invaded about 115ha of the adjacent World Heritage Area. Yellow crazy ants are under eradication at Russett Park and nearby Green Forest Road in Mareeba Shire.

Impacts Yellow crazy ants are one of the world's worst invasive species. They are a significant threat to the biodiversity of the Wet Tropics. They can inhibit the photosynthesis and pollination of plants, causing environmental and agricultural impacts. They are also a significant a hazard to human health and enjoyment of the outdoors.

Key projects The Wet Tropics Management Authority operates the Yellow Crazy Ant Eradication Program which started in 2013. It is jointly funded to June 2022 by the Australian and Queensland Governments**.**

Background

While the exact origin of yellow crazy ants remains unclear, their current distribution extends through the tropical islands of the Indian and Pacific Oceans, where they are a major pest. This broad distribution is closely linked to human movement activities such as cargo ships and trade which has ultimately assisted them to reach Australian shorelines. In Australia, yellow crazy ants are now present in a number of sites throughout Queensland and Arnhem Land. In the Wet Tropics infestations YCA are found in a variety of habitats including residential areas, sugarcane fields and rainforest.

Delimitation surveys have defined the main infestations. However, new infestations continue to be detected. Community and industry are being educated to identify yellow crazy ants and asked to report any additional sightings. Yellow crazy ant queens are not known to disperse by flying; instead they move by 'budding' where a queen and accompanying workers walk to a new location, sometimes rafting on waterways to move downstream.

The other key mode of dispersal is human assisted, moving as stowaways in soil, machinery, building materials, pot plants, and dry or green waste. It is crucial that high risk waste is treated on site and that any waste is disposed of at your local landfill so it can be monitored and treated if any outbreaks occur.

Regular treatments, about three times a year using ant specific granular baits have drastically reduced yellow crazy ant numbers in most areas. Eradication has been achieved in some small areas.

Life cycle

- Eggs hatch after 18-20 days.
- Worker larvae develop in 16-20 days
- Pupae of workers develop in 20 days, while queen pupae develop in 30-34 days.
- Total lifespan of a worker ant is approximately 76- 84 days.
- Yellow crazy ants are most active in dry weather in temperatures over 17°C.

For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

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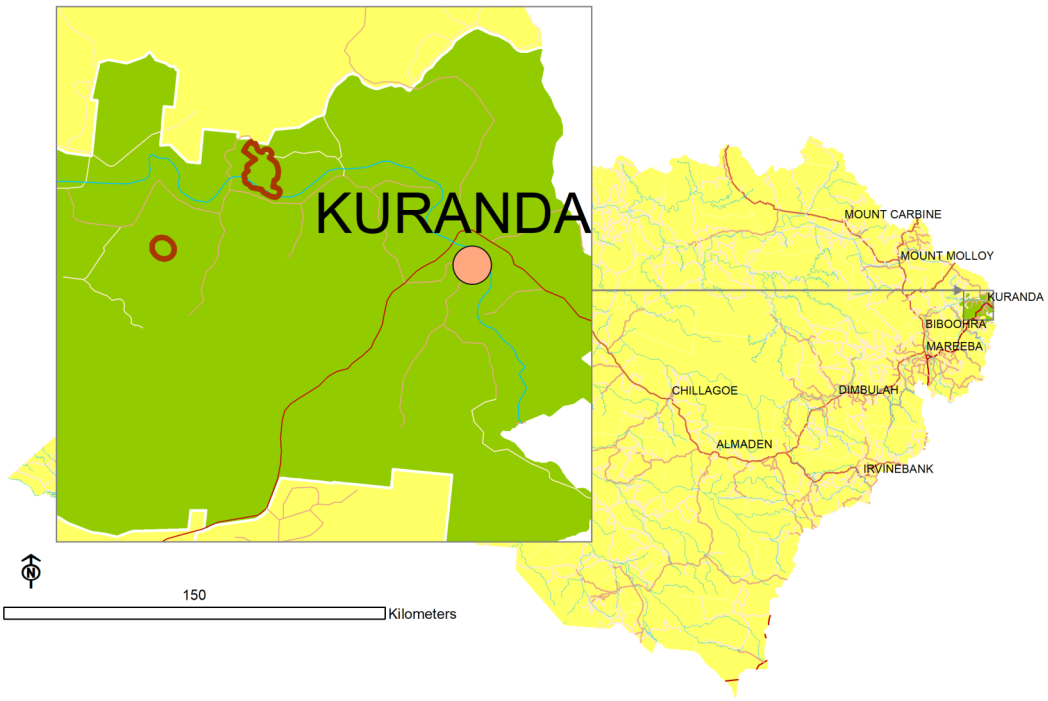
@MareebaShire

Anoplolepis gracilipes (Yellow crazy ant)

Invertebrate

Tramp ant

Yellow crazy ant treatment area



Biosecurity Act Restricted matter

2 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed

Control









What is my biosecurity obligation?

In the prevention zone

Dispose of all green waste and other rubbish at your local landfill. Illegal dumping of rubbish or green waste containing yellow crazy ants or their eggs is a dual offence under both waste and the biosecurity legislation. Taking your waste to the local landfill allows for the monitoring and treatment of any outbreaks.

If you are unsure of the risk posed on your property then contact the eradication program for advice or assistance in treating your waste before transporting it off site.

In the eradication zone

You can assist the eradication effort by maintaining access tracks, reducing weeds and rank grass along creek lines and providing access to your yard for any required survey or treatment operations. Yellow Crazy Ant Eradication Program - 07 4241 0525, yca@wtma.qld.gov.au

Spread

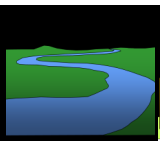
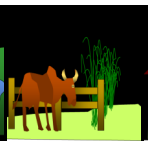






Wasmannia auropunctata (Electric ant)

Priority

National priority	State priority	Previous local	Conservation	Water resources	Agriculture and industry	Community and residential	Feasibility of control	Current extent
								
5.0/5	2.5/5	5.0/5	5.0/5	2.0/5	2.0/5	5.0/5	4.0/5	4.0/5

Details

Description Electric ants are very small, about 1-1.5mm long. They are light brown to golden brown in colour, although the abdomen is sometimes darker. They are slow moving in comparison to many native ants and form distinctive foraging lines. They have a powerful, venomous sting.

Distribution Electric ants were first found in the northern beach suburb of Smithfield in May 2006. They are predominantly spread by humans in pot plants, other plant material and illegal dumping of green waste and have been recorded from Port Douglas to Bingil Bay. In Mareeba Shire there are restricted zones active in Mareeba, Kuranda, Koah and Speewah.

Impacts Electric ants are one of the world's worst invasive species. They have a powerful venomous sting and present a significant threat to biodiversity, agriculture and lifestyle. They are also a hazard to human health with their venomous sting providing a significant danger to sufferers of anaphylaxis.

Key projects The National Electric Ant Eradication Program, managed by Biosecurity Queensland, operates an eradication program which began in 2006. Electric ants are Category 1 Restricted Matter under the Biosecurity Act 2014 and must be reported immediately to Biosecurity Queensland on 13 25 23.

Background

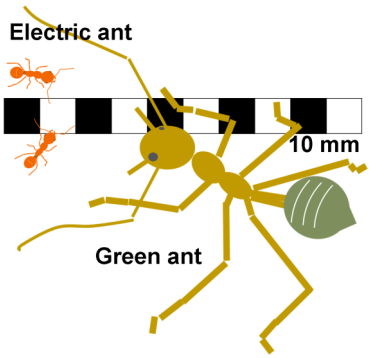
Electric ants are a notifiable Category 1 pest under the Biosecurity Act 2014 and residents within infestations (restricted zones) cannot move live electric ants or electric ant carriers, such as plants, plant material and soil, without getting a Biosecurity Instrument Permit (BIP) from the Program.

Known infestations are regularly treated with various granular pesticide products, depending on where the infestations are. The active ingredients can be either toxicants, or insect growth regulators (IGR). A gel bait has been developed for use in difficult, wetter areas and other new bait formulations are being trialled. Treatments area undertaken a minimum of 1 month apart until no more ants are found. All people within FNQ have a general biosecurity obligation (GBO) not to move electric ants.

The longest recorded movement of electric ants was from the relocation of pot plants from Kewarra Beach to Bingil Bay. Most dispersal events occur through the movement of pot plants and plant material.

Life cycle

- Queens live for approximately 12 months and lay up to 70 eggs a day.
- Eggs are incubated for 8-10 days.
- Larvae develop for 14-16 days.
- Nymphal stage lasts 13-14 days.
- Adult workers live for more than 40 days.
- Males live for several weeks.



For more information on using this biosecurity action plan fact sheet, and further information on control tools, refer to the Mareeba Biosecurity Plan available at msc.qld.gov.au and customer service centres.

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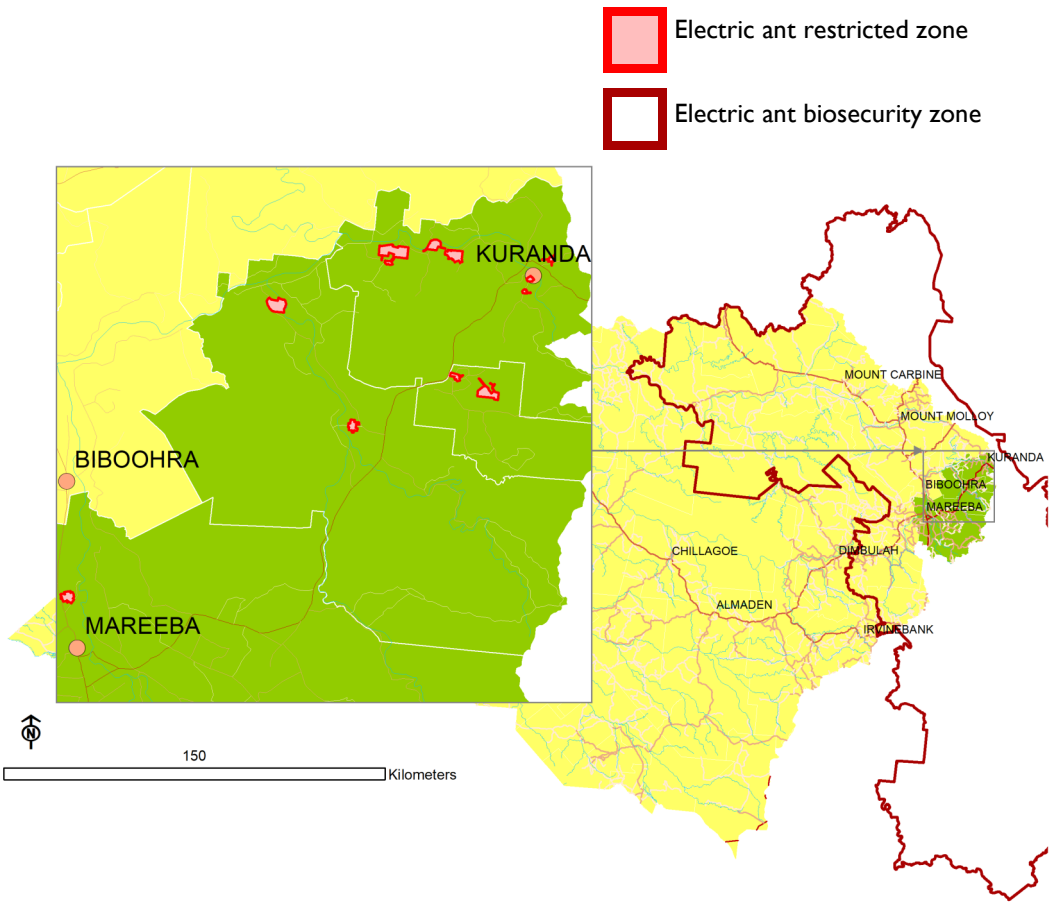
1300 308 461

@MareebaShire

Wasmannia auropunctata (Electric ant)

Invertebrate

Tramp ant



Biosecurity Act Restricted matter

1 Must be reported

3 Do not distribute

4 Do not move

5 Do not keep

6 Do not feed

Control









What is my biosecurity obligation?

In the electric ant restricted zone

Electric ants are a notifiable Category 1 pest under the Biosecurity Act 2014. New detections are required to be reported to the eradication program within 24 hours. Call Biosecurity Queensland on 13 25 23.

Residents within infestations (restricted zones) cannot move live electric ants or electric ant carriers, such as plants, plant material and soil, without getting a Biosecurity Instrument Permit (BIP) from the Program.

In electric ant biosecurity zone

All people within FNQ have a general biosecurity obligation (GBO) not to move electric ants.

Along with carefully adhering to movement control of potentially contaminated materials and items you can assist the eradication effort by providing clear access to your property for any required survey or treatment operations.

Spread

