



PEST MANAGEMENT PLAN

FOR

**MOUNT EMERALD WIND
FARM**

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1. INTRODUCTION

1.1 Perspective

Weeds are undoubtedly the most serious threat to natural areas and primary production in Australia. The costs are estimated at \$3.3 billion annually in loss of agricultural productivity, not to mention the losses by degradation and displacement of native flora and fauna. It is now estimated around 17% of Australia's Flora now consists of exotic weeds (Department of Natural Resources, 1997). Many of these introductions were due to a desire to vegetate the landscape with new species that had a perceived benefit to agriculture and lifestyle.

Rubbervine, introduced as an ornamental and for the potential to produce rubber, is an example of an extremely invasive plant that has impacted greatly on the environment and agriculture in the tropical zones of northern Australia.

In some cases, contaminated pasture seed has been the cause of significant spread of new non-desirable exotic species such as Giant Rats Tail Grass (GRT). This grass originated from Africa in grass seeds such as Rhodes Grass species. This species alone is now one of the greatest threats to the productivity of Northern and Central Queensland grazing lands. Being a grass, field identification is very difficult for both landholders and experts alike. It has therefore been the subject of an extensive awareness and control campaign.

1.2 Mission Statement

- To minimize the number of pest animals, weed species and individual weeds on the site land.
- To promptly identify areas where pests are present.
- To promptly identify and remove any new pest species that may enter onto the site land.
- To be good corporate citizens by ensuring our land management practices do not cause any harm or detriment to that of our neighbours nor community.

1.3 Property Details

Ownership and property information	
Tenure	Lease
Property name	Mount Emerald Wind Farm
Lot / Plan property description	Lot 7 SP235244
Property size (ha)	2422ha
Shire	Tablelands Regional Council
Owners name	Port Bajool
Property location / address	Kippen Drive, Springmount
Other items and attributes	Powerlink – Transmission Line Easement
Enterprise description and land use	
Current uses	No current specific use
Use area	

2. OVERVIEW OF MANAGEMENT PLAN

2.1 General Management Philosophy

During the development and assessment stage of the project all employees and contractors are asked to notify management when they see any noxious weeds on the site land.

During the construction and operational phases, should they arise, land management inspections should take place regularly and inspecting for weeds is a component of this activity. These inspections should be conducted by suitably trained operational personnel or external environmental consultants.

2.2 Objectives

The objectives of this pest management plan are to:

- Eradicate and/or control and/or remove infestations of identified pest species including the ongoing monitoring of the site throughout all stages of development, construction and operation;
- Meet regulatory obligations;
- Minimise the introduction of new species to the site and prevent the spread of new and existing species across the site; and
- Protect habitat and biodiversity values on the land through appropriate control of pest species.

Development Stage

The short-term aims for pest control across the site are the eradication of newly introduced species and the containment of previously established species to prevent their spread into unaffected areas across the site.

The following control actions will be undertaken:

- The prevention of weed spread from the site land to that of the neighbours
- The prevention of weed dispersal into areas presently unaffected
- Removal of any small populations of weeds, identified across the site, and eradicating them before they become established

Construction and Operation Stage

During the Construction and Operations phases of the project the likely hood for introduction of pest species to site is increased due primarily to the increase in equipment and personnel entering the area. The strategy for pest control during this time is to prevent the spread of species across the site, to contain current infestations of weed species with the goal of eradication and to prevent the introduction of new species to the site.

The following control actions will be undertaken:

- The prevention of weed spread from the site land to that of the neighbours
- The prevention of weed dispersal into areas presently unaffected
- Removal of any small populations of weeds, identified across the site, and eradicating them before they become established
- Removing species that require little effort to eradicate from the site
- Focusing on areas that are the source of propagules that infest other weed free areas

- Focusing on areas that urgently require attention to prevent the weed population from becoming difficult to eradicate from the site in the future.

2.3 Limitations

A number of limitations to pest control should be considered before finalising and implementing strategies, including;

- Access - in some areas of the site, access to steep areas is limited and may prevent control
- Soil Stability - some areas may have high erosion potential
- Cultural Heritage Values – although presently no existing values are known, future work may identify particular areas
- Water Quality - control of weed infestations near fresh water courses will be limited to non-toxic chemicals and non-chemical/low chemical control measures
- Biological Control Agents - some species may have previously been treated with a particular biological control agents (e.g. Cactoblastis Moth on Prickly Pear) and may need to be retained on-site to ensure the survival of the biological control agent

2.4 Reporting

Reports are to be maintained of any identification and actions taken during the course of the project.

Detailed inspections undertaken on a regular basis should have a report submitted on the results of the inspection and include recommendations for any remedial actions. A follow-up report should be submitted noting the actions taken and the outcomes of such actions.

A general map of the subject land is shown in Appendix A. The map should show the location of identified weeds and be updated on a regular basis.

Appendix B includes a record of management activities undertaken to date.

3. IDENTIFICATION AND PRIORITISATION

3.1 Classification

Plants

Pest plants targeted for control under State legislation are species that have, or could have, serious economic, environmental or social impacts. Declared plants are listed under three different categories;

Class 1 – one that has the **potential** to become a very serious pest in Queensland in the future. We need to prevent the introduction, possession and sale of these species so they can't become pests. All landholders are required by law to keep their land free of Class 1 pests. It is a serious offense to introduce, keep, release or sell Class 1 pests without a permit.

Class 2 – one that has **already spread** over substantial areas of Queensland, but its impact is so serious that we need to try and control it and avoid further spread onto properties that are still free of the pest. By law, all landholders must try to keep their land free of Class 2 pests and it is an offence to possess, sell or release these pests without a permit. Fines apply.

Class 3 - one that is **commonly established** in parts of Queensland but its control by landowners is not deemed to be warranted unless the plant is impacting, or has the potential to impact, on a nearby 'environmentally significant area' (e.g. a national park). It is an offence to sell, introduce, release or supply a Class 3 pest. Fines apply.

Not Declared (ND) - Species not declared under the *Land Protection (Pests and Stock Route Management) Act 2002* may still be declared at a local government level under local laws.

Animals

Several animals are declared as Class 1, Class 2 or Class 3 pests under Queensland’s *Land Protection (Pest and Stock Route Management) Act 2002*. Class 1 and 2 animals represent a threat to agriculture, primary industries, natural resources and the environment.

A Class 1 pest is one that is not commonly present in Queensland, and if introduced would cause an adverse economic, environmental or social impact. Class 1 pests established in Queensland are subject to eradication from the state. Landowners must take reasonable steps to keep land free of Class 1 pests. Other powers of the Act apply.

A Class 2 pest is one that is established in Queensland and has, or could have, a substantial adverse economic, environmental or social impact. The management of these pests requires coordination and they are subject to local government-, community- or landowner-led programs. Landowners must take reasonable steps to keep land free of Class 2 pests. Other powers of the Act apply.

Class 3 pests are established in Queensland and have, or could have, an adverse economic, environmental or social impact. A pest control notice can only be issued for these pests on land that is, or is adjacent to, an environmentally significant area. Thus, the adverse impact of species in this Class is primarily environmental. Only some of the other powers of the Act apply.

3.2 Likelihood

The likelihood of a particular species being encountered at the subject site is based on information sourced from Annual Pest Distribution Survey maintained by the Queensland Department of Agriculture, Fisheries and Forestry.

(www.dpi.qld.gov.au/extra/asp/IPA_maps/search.asp)

Categories include;

- Abundant – both widespread and localised
- Common – both widespread and localised
- Occasional – both widespread and localised

3.3 Prioritisation

		Likelihood of occurrence					
		Occasional		Common		Abundant	
		Localised	Widespread	Localised	Widespread	Localised	Widespread
Classification	Not Declared	Very low	Very low	Low	Medium	High	High
	Class 1	Very low	Low	Medium	Medium	High	Very High
	Class 2	Low	Medium	Medium	High	Very High	Very High
	Class 3	Medium	Medium	High	Very High	Very High	Extreme

Table 1 – Pest Priority Matrix

4. LIST OF SPECIES

A list of the species likely to be found on the subject land is shown in Table 2, along with the associated priority ranking. More detail on each of these species is available in Appendix C.

Pest	Classification	Likelihood	Priority (e.g. low, medium or high)
<u>Plants</u>			
Annual Ragweed	2	Occasional-Localised	Low
Asparagus Fern	3	Occasional-Localised	Medium
Cabomba	2	Common-Localised	Medium
Camphor Laurel	3	Occasional-Localised	Medium
Cats Claw Creeper	3	Occasional-Localised	Medium
Chinese Privet	3	Common-Widespread	Very High
Fireweed	2	Occasional-Localised	Low
Gamba Grass	2	Occasional-Localised	Low
Grader Grass	ND	Abundant-Localised	High
Harungana	3	Common-Localised	High
Hymenachne	2	Occasional-Localised	Low
Lantana	3	Common-Widespread	Very High
Leucaena	ND	Occasional-Localised	Very Low
Madeira Vine	3	Occasional-Localised	Medium
Mother of Millions	2	Occasional-Localised	Low
Navua Sedge	ND	Occasional-Localised	Very Low
Noogoora Burr	ND	Occasional-Localised	Very Low
Parthenium	2	Occasional-Localised	Low
Praxelis	ND	Common-Widespread	Medium
Rat Tail Grass	2	Common-Localised	Medium
Rubber Vine	2	Common-Localised	Medium
Sicklepod	2	Occasional-Localised	Low
Singapore Daisy	3	Common-Localised	Medium
Thunbergia fragrans	1	Occasional-Localised	Very Low
Thunbergia gradiflora	2	Occasional-Localised	Low
Tobacco Weed	2	Common-Localised	Medium
Tree Privet	3	Common-Widespread	Very High
<u>Animals</u>			
Cane Toad	ND	Common-Widespread	Medium
Cat (Feral)	2	Common-Widespread	High
Common Indian Myna Bird	ND	Occasional-Localised	Very High
Deer (Rusa)	2	Occasional-Localised	Low
Dog (Feral)	2	Common-Widespread	High
Horse (Feral)	ND	Occasional-Localised	Very Low
Pig (Feral)	2	Abundant-Localised	Very High
Rabbit	2	Common-Localised	High

Table 2 - Prioritised List of Potential Pest Species

5. STRATEGY

The overall general management strategy shall include the following key components.

5.1 Vision

To maintain the ecological value of the site by protecting its relative remnant nature and biodiversity values.

5.2 Goals

- Eradicate weed species to protect native vegetation
- Restrict construction activities/disturbance area to as limited an area as possible
- Revegetate disturbed areas using local species
- Reduce impacts on natives species wherever possible
- Maintain flow paths for property watercourses where ever possible

5.3 Approach

Inspection and Control

Regular inspection of the site and disturbed areas shall be undertaken by a suitably qualified person/s. Recommendations arising from the reporting of inspections are to be acted upon as a priority. Prior to implementation of any control mechanism, consultation shall be undertaken with the land owner to determine if there are any restrictions on the use of chemicals or other control measures as a result of special accreditation (i.e. organic food accreditation programs such as Cattle Care and Organic Beef in Australia).

Prevention

- Appropriate strategies to prevent the introduction or spread of weeds and pest animals during development, construction and operational activities shall include:
 - Maintain access tracks and right-of-ways free from declared/prescribed/ prohibited and important weeds to avoid contamination of vehicles and machinery.
 - Avoid driving off the road in areas known to contain weeds that present a risk.
 - Avoid slashing and other works through infested areas during peak seed production times.
 - Clean and inspect vehicles and machinery when moving between infested and non-infested areas.
- Sourcing of materials and products (such as soil, gravel, sand, hydro-mulch) from weed/pest animal free areas. Where there is a significant risk of introducing or spreading declared/prescribed/prohibited or important weeds or pest animals through the movement of soil or related materials:
 - The weed/pest animal status of areas from where products are to be sourced shall be identified.
 - A declaration shall be obtained from all suppliers of such materials and products and/or the property attesting to the product being free from declared/prescribed/prohibited or important weeds and pest animals or the place of origin of the material/product shall be examined to ensure the area is free of declared/designated weeds and pest animals.
 - Material or products shall not be stockpiled or stored in areas where declared/prescribed/prohibited or important weeds/pest animals exist.
 - Ensure staff working in areas of infestation, clean the majority of mud off their boots before leaving the area.

- As there is a significant risk of introducing or spreading declared/prescribed/prohibited or important weeds through the movement of vehicles and machinery, all vehicles and machinery shall be:
 - Cleaned at an appropriate wash-down facility. A current facility has been established adjacent to the existing access road at the base of the climb up to site. This facility has been used to wash-down construction equipment entering site for maintenance activities primarily by Ergon/Powerlink.
 - Cleaned in accordance with appropriate wash-down procedures and associated checklists. Records of completed checklists are to be maintained.
 - Issued with a Vehicle/machinery Inspection Report.

5.4 Responsibilities

Phase	Action	Who	When
Development	Implement and manage Management Plan	Proj. Manager	Commencement
	Identify pest weed or animals of concern located on or near to site and arrange appropriate control measures	Staff / external inspection	All times / as required
Construction	Review and amend Management Plan as required	Proj. Manager / Site Manager	Commencement
	Build wash-down pad on property – all construction equipment entering site to be cleaned prior to entry	Contractor	Commencement
	Site induction – high priority species incorporated in site induction, allowing for identification	Staff	All times
	Survey site - construction areas (access roads, hardstands, site facilities etc.)	External	Quarterly
Operation	Review and amend Management Plan as required	Site Manager / Ops Manager	Commencement
	Maintain wash-down facility – all construction equipment entering site to be cleaned prior to entry	Ops Manager	All times
	Site induction – high priority species incorporated in site induction, allowing for identification	Staff	All times
	Survey site - construction areas (access roads, hardstands, site facilities etc.)	External	Quarterly / Biannual

6. REFERENCES

- Declared Animals of Queensland Fact Sheet – *Queensland Department of Agriculture, Fisheries and Forestry* – PA2 April 2103
- Declared Plants of Queensland Fact Sheet – *Queensland Department of Agriculture, Fisheries and Forestry* – PP1 July 2012
- Annual Pest Distribution Maps - *Queensland Department of Agriculture, Fisheries and Forestry* – various (www.dpi.qld.gov.au/extra/asp/IPA_maps/search.asp)

7. APPENDICES

Appendix A - MAPS

Appendix B – Management Actions Record

Appendix C – Species Information

APPENDIX A – SITE MAPS

APPENDIX B – MANAGEMENT ACTIONS RECORD

Date/time period	Number/amount/density	Action	Comment
1. Pest species: Wynn Cassia			
Identified Jeff Middleton RPS - December 2012	Small area in vicinity of 80m monitoring mast	Species contained with herbicide	No further spread at this time.
2. Pest species: Thatch Grass			
Identified by Jeff Middleton RPS – May 2013	Small patch along access road to site (329304E 8102160N)	Extents of track slashed prior to treatment.	
3. Pest species: Grader Grass			
Identified by Simon Gleed RPS - May 2013	Along extents of access road to site	Extents of track slashed prior to treatment.	
4. Pest species: Rat's Tail Grass			
Identified by Simon Gleed RPS - May 2013	Along extents of site access track (on-site)	Extents of track slashed prior to treatment.	
5. Pest species: Thatch Grass			
Identified by Simon Gleed RPS - May 2013	Along extents of site access track (on-site)	Extents of track slashed prior to treatment.	
6. Pest species: Pigeon Grass			
Identified by Simon Gleed RPS - May 2013	Along extents of site access track (on-site)	Extents of track slashed prior to treatment.	
7. Pest species: Molasses Grass			
Identified by Simon Gleed RPS - May 2013	Along extents of site access track (on-site), creek crossings	Extents of track slashed prior to treatment.	
8. Pest species: General Inspection			
Weed Inspection by Yuruga Nursery (P&A Radke) – Sep 2014	Along extents of site access track (on-site); small patches of infestation	Minor treatment required prior to wet-season	

APPENDIX C – SPECIES INFORMATION

PLANTS

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
Annual Ragweed (<i>Ambrosia artemisiifolia</i>) Declared - Class 2	<p>Annual ragweed is a fast-growing plant introduced into Australia from North America.</p> <p>Annual ragweed can invade and suppress weak and overgrazed pastures, reducing productivity. The pollen of annual ragweed can cause health problems such as hay fever and can aggravate asthma.</p>	<ul style="list-style-type: none"> ▪ Grows to 1-2m high with slightly rough fern-like, deeply divided with hairy undersides. ▪ A basal rosette of leaves in its early stages of growth. ▪ Leaves are shortly stalked, opposite at the base, alternate at the top, 2-3cm long. ▪ Leaf blades resemble fern leaves and are from 1-16cm long and 1-7cm wide. ▪ Small, greenish flowers up to 20cm long in the upper part of the plant. ▪ Flower spikes appear yellow when mature because of pollen production. ▪ Male flowers at the top of the spike and females at the base. ▪ Seeds black, small, top-shaped and rough. 	<ul style="list-style-type: none"> ▪ Invades and suppresses weak and overgrazed pastures, reducing productivity. ▪ Infestations can become particularly dense in pastures which are overgrazed. ▪ Pollen contains highly potent allergens that can cause respiratory allergies such as hay fever and aggravate asthma.
Asparagus Fern (<i>Asparagus Aethiopicus</i>) Declared – Class 3 Weed of National Significance	<p>Basket asparagus fern is native to Africa and is one of the most significant garden escapees invading our coastline. It is known as ground asparagus or simply asparagus fern and has been found to be a problem along the entire coast</p>	<ul style="list-style-type: none"> ▪ Long arching prickly stems up to 2m long. ▪ Light green slender leaves. ▪ Produces clusters of small, creamy flowers and fruits up to 8mm in diameter. ▪ Fruits ripen to bright red containing a single, black, round seed. ▪ Starch-bearing tubers are present, but do not regrow or reproduce 	<ul style="list-style-type: none"> ▪ Germinates most of the year if moisture present. ▪ Flowers usually October-February
Cabomba (<i>Cabomba caroliniana</i>) Declared – Class 2	<p>Cabomba is a fully submerged aquatic plant, originally introduced into Australia as an aquarium plant. Five species are recognised but only one of these, <i>Cabomba caroliniana</i>, is known to be naturalised in Australia.</p>	<ul style="list-style-type: none"> ▪ Perennial, submerged aquatic plant. ▪ Can form dense canopies below the water surface. ▪ Multiple stems up to 10m long. 	<ul style="list-style-type: none"> ▪ An aggressive invader of native freshwater systems. ▪ Transforms aquatic ecosystems

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
Weed of National Significance (WONS)	<p><i>Cabomba caroliniana</i> is a declared Class 2 pest plant; all other cabomba species are declared Class 1 species under Queensland legislation.</p>	<ul style="list-style-type: none"> ▪ Dubmerged leaves and stems have a thin gelatinous coating. ▪ Leaves opposite and repeatedly divided to form feathery, fan-shaped structures. ▪ White flowers produced above the surface, forms a few narrow floating leaves before flowering. 	<ul style="list-style-type: none"> ▪ Displaces native plants. ▪ Detrimental to native wildlife. ▪ Affects water quality. ▪ Increases siltation in lakes. ▪ Obstructs creeks, lakes and dams. ▪ Interferes with infrastructure (e.g. irrigation). ▪ Impedes aquatic recreational activities. ▪ Endangers swimmers who can become entangled.
Camphor Laurel (<i>Cinnamomum camphora</i>) Declared – Class 3	<p>Camphor laurel was introduced into Australia from Asia. Camphor laurel has been promoted and planted as a garden ornamental throughout Queensland.</p> <p>Camphor laurel is an attractive shade tree but can be very invasive.</p>	<ul style="list-style-type: none"> ▪ A large evergreen tree, growing up to 20m tall. ▪ Leaves have a glossy, waxy appearance and smell of camphor when crushed. ▪ Produces lush, bright green foliage and masses of small white flowers in spring. ▪ Spherical berry like fruits are 10mm across, green at first changing to black when ripe. 	<ul style="list-style-type: none"> ▪ Aggressively replaces native vegetation. ▪ Replaces native trees, such as blue gums which are koalas' favourite food. ▪ Invades disturbed riparian systems. ▪ Inhibits regeneration by other plants. ▪ Invades pastures. ▪ Pushes over fences and disrupts power facilities. ▪ Develops a massive root system which blocks drains and cracks concrete structures
Cats Claw Creeper (<i>Macfadyena unguis-cati</i>) Declared – Class 3	<p>Native to tropical America, cat's claw creeper is an aggressive climber which was used as an ornamental in older-style Queensland gardens.</p>	<ul style="list-style-type: none"> ▪ large vine with bright yellow bell-shaped flowers, 4-10 cm long and up to 10 cm wide ▪ leaves have two leaflets 5-25 mm long, with a three-clawed tendril (the cat's claw), 3-17 mm long, growing between them ▪ vine bears very long, narrow and flat pods containing many seeds ▪ vine has a vigorous root and tuber system ▪ longated, glossy green fruit, dark-brown as they mature, 15-50 cm long, 8-12 mm wide 	<ul style="list-style-type: none"> ▪ completely smothers native vegetation, even growing up over trees ▪ changes the soil chemistry

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
		<ul style="list-style-type: none"> each fruit contains numerous oblong seeds, 10-40 mm long, 4-10 mm wide 	
Chinese Privet <i>(Ligustrum sinense)</i> Declared – Class 3	<p>Chinese privet has been widely distributed in Australia as a garden hedge plant.</p> <p>In natural systems the densely branched growth habit of Chinese privet poses a significant shading threat to native plants in moist, temperate areas of south-eastern Queensland.</p> <p>Chinese privet (<i>Ligustrum sinense</i>) may also be confused with native privet (<i>Ligustrum australianum</i>), which is present in northern and central Queensland. Native privet is not a pest plant.</p>	<ul style="list-style-type: none"> A large shrub growing to about 4m tall. Deep-green finely hairy leaves, oval shaped, up to 5cm long. Young branches covered in fine hairs. Flowers are small, produced in dense cream sprays up to 10cm long that are scented. Berries are green ripening to dark blue to black 	<ul style="list-style-type: none"> Poses a significant shading threat to native plants in moist, temperate areas of South East Queensland. Affects habitat of native animals. Hinders animal movement through bushland. Flowers can cause severe allergic reactions in humans.
Fireweed <i>(Senecio madagascariensis)</i> Declared – Class 2	<p>Fireweed is an introduced daisy-like herb native to southern Africa. Fireweed was first recorded in Australia in the Hunter Valley in 1918. It is thought that fireweed arrived in the ballast of ships trading between Australia and Europe via Capetown. Fireweed spread slowly at first, but in the past 30 years has rapidly increased its range, most likely aided by modern transport and rural practices.</p>	<ul style="list-style-type: none"> Annual or short-lived perennial. Varies greatly in size and shape depending on conditions. In dry harsh conditions may be less than 20cm tall with narrow leaves, no branching and few flowers. In ideal conditions, grows up to 50cm tall with multiple branches, long wide leaves (6cm x 2cm) and about 100 flowers. Leaves 2-6cm long, alternate, dark green, with serrated margins. Flowers bright yellow, daisy-like with a diameter of about 2cm, producing up to 100 seeds each. Each seed 2-3mm long and cylindrical in shape with rows of very fine short hairs and a silky pappus (parachute). Shallow-branched tap root with many fibrous roots. 	<ul style="list-style-type: none"> Competes with pasture species. Toxic to livestock, particularly cattle and horses, causing illness, slow growth and poor conditioning which can result in death. May taint meat and milk.
Gamba Grass <i>(Andropogon gayanus)</i> Declared – Class 2 Weed of National	<p>Gamba grass is a perennial tussock grass native to the tropical savannas of Africa. Gamba grass was imported into Queensland as a pasture grass in 1942 but was not planted on a large scale until around 1983.</p> <p>While gamba grass can be a useful cattle feed in Far</p>	<ul style="list-style-type: none"> Mature plants grow up to 4m tall with tussocks up to 70cm in diameter. Leaves are 30-60cm long and up to 3cm wide, with a distinctive white midrib and covered with soft hairs. Stems are robust and covered in soft hairs. 	<ul style="list-style-type: none"> Replaces native grasses, thereby reducing natural biodiversity on non-grazed land. High biomass can fuel intense bushfires leading to loss of tree cover and long-term environmental damage.

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
Significance (WONS)	North Queensland, it also has significant negative impacts.	<ul style="list-style-type: none"> The root system spreads up to 1m from the tussock, close to the soil surface. Reproduces from seed. Seeds are contained in a fluffy V-shaped seed head consisting of up to six groups of branches, each containing 2-18 primary branches. 	<ul style="list-style-type: none"> Recognised (with four other tropical grasses) as a Key Threatening Process. Invades non-grazed parcels of land such as conservation areas, semi-urban residential land and mining leases. High intensity gamba grass fires can pose a threat to human safety and property.
Grader Grass <i>(Themeda quadrivalvis)</i> Not Declared	Grader grass is an annual, upright and tufted grass native to India. Grader grass is considered to be in the top 200 most invasive plants of south-western Queensland.	<ul style="list-style-type: none"> Grows up to 1-2.5m in height. Jointed cane-like stems. Long narrow leaf blades up to 60cm in length. Bent, brown bristles along the flower spikes. Seed heads are reddish-brown, changing to a golden colour at maturity, 15-60cm long. 	<ul style="list-style-type: none"> Invades native grasslands, pastures and replaces native plants.
Harungana <i>(Harungana madagascariensis)</i> Declared – Class 3	Harungana is a tropical tree or shrub that is invading native rainforest vegetation in North Queensland. There is concern that harungana will establish extensive stands that exclude native plants and destroy wildlife habitat.	<ul style="list-style-type: none"> Tree growing up to 10-15m. Exudes orange paint like sap when branches or leaves are broken off. Leaves are dark green broad egg-shaped and opposite, 10-20cm long and 6-10cm wide. Flowers are whitish, very small and fragrant dotted with black glands. Fruits are orange-brown small, 2-3mm, and fleshy. Each have 2-4 seeds. 	<ul style="list-style-type: none"> Forms dense thickets from root suckers to the exclusion of all other species. Invades cyclone-damaged rainforest and gaps in rainforest caused by fallen trees or landslips.
Hymenachne <i>(Hymenachne amplexicaulis)</i> Declared – Class 2	Originally introduced to Australia from South America to provide ponded pasture for cattle, hymenachne has become an unwanted pest of stream banks, shallow wetlands and irrigation ditches, primarily in the coastal wet tropics of northern Queensland. In some areas it has invaded low-lying sugarcane, fish habitats and natural wetlands with high conservation value	<ul style="list-style-type: none"> Robust, rhizomatous, perennial grass, up to 2.5m high. Stems are erect and pithy. Leaf blades are 10-45cm long and up to 3cm wide. Flower heads are spike-like, cylindrical, 20-40cm long. 	<ul style="list-style-type: none"> Infestations can affect drains, lagoons, wetlands, creeks and rivers. Increases flooding by reducing the flow capacity of drainage networks. Interferes with wildlife habitats. Interferes with irrigation and infrastructure. Degrades water quality for recreational purposes.

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
Lantana <i>(Lantana camara)</i> Declared - Class 3 Weed of National Significance	<p>Lantana is a native from the tropical and subtropical regions of Central and South America. Lantana is a heavily branched shrub that can grow as compact clumps, dense thickets and as scrambling and climbing vines.</p>	<ul style="list-style-type: none"> ▪ Stems are square with small, recurved prickles. ▪ Leaves are bright green, about 6cm long, with roundtoothed edges and grow opposite one another along the stem. ▪ Flowers vary in colour from pale cream to yellow, white, pink, orange, red, lilac and purple, about 2.5cm in diameter. ▪ Fruits are glossy, rounded, fleshy, purplish-black when ripe 	<ul style="list-style-type: none"> ▪ Forms dense thickets that smother native vegetation. ▪ Some varieties are poisonous to stock. ▪ Thickets are impenetrable for animals, people and vehicles.
Leucaena <i>(Leucaena leucocephala)</i> Not Declared	<p>Native to Central and South America, is a small tree that has been planted for fodder in many tropical areas of the world, including Queensland. Unless heavily grazed or otherwise controlled, it is able to rapidly spread to adjacent areas.</p>	<ul style="list-style-type: none"> ▪ grows up to 6 m in height ▪ leaves are about 25 cm long and bipinnate, with dull, greyish-green leaflets ▪ flower heads are spherical, creamy-yellow and on short stalks about 5 cm long ▪ flattened pods up to 15 cm long, in dense clusters ▪ each pod contains about 20 glossy-brown, flat seeds that scatter when ripe 	<ul style="list-style-type: none"> ▪ forms dense thickets, hindering the movement of wildlife and excluding all other plants ▪ rapidly spreads to adjacent areas unless heavily grazed or otherwise controlled
Madeira Vine <i>(Anredera cordifolia)</i> Declared - Class 3	<p>Madeira vine is a vigorous climber which can produce thousands of aerial tubers along its stem and causes serious damage to the native environments it invades.</p> <p>Non-invasive, native alternatives to Madeira vine include native wisteria (<i>Millettia megasperma</i>), tape vine (<i>Stephania japonica</i>), wonga vines (<i>Pandorea</i> spp.), native jasmines (<i>Jasminium</i> spp.) or native hoya or wax flower (<i>Hoya australis</i>).</p>	<ul style="list-style-type: none"> ▪ Vigorous climbing vine. ▪ Heart-shaped leaves are wide, fleshy, 4-5cm and light green. ▪ Flower spikes are 10cm long, with numerous individual small flowers, resembling a lamb's tail. ▪ Produces thousands of small light-brown or green potato-like tubers along the stems which fall to the ground and sprout. 	<ul style="list-style-type: none"> ▪ Madeira vine is a serious environmental weed which can degrade intact native forests, completely altering the environments it dominates (transformer species). ▪ It smothers trees, shrubs and understorey species. ▪ The vine is very heavy and can cause canopy collapse of mature trees. ▪ It can grow as a ground cover, disrupting native seedling germination and growth. ▪ Madeira vine adds to infrastructure damage during flood periods by causing bank destabilisation and creating increased resistance for flood waters which can uproot trees.

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
			<ul style="list-style-type: none"> ▪ Destruction of riverside vegetation by Madeira vine has led to increased bank erosion and water turbidity issues - affecting water catchment regions.
Mother of Millions <i>(Bryophyllum delagoense)</i> Declared - Class 2	Mother-of-millions (<i>Bryophyllum delagoense</i>) is an escaped ornamental plant originating from Madagascar. Hybrid mother-of-millions (<i>Bryophyllum x houghtonii</i>) is a cross between mother-of-millions and <i>Bryophyllum daigremontianum</i> and is also an escaped ornamental plant. Five <i>Bryophyllum</i> species are naturalised in Queensland. <i>Bryophyllum pinnatum</i> (resurrection plant, live-leaf), is also problematic but is not declared.	<ul style="list-style-type: none"> ▪ Erect, smooth, fleshy, succulent plant growing to 1m or more high. ▪ Leaf shape varies depending on hybrid from tubular to boat shapes to flat ▪ Each leaf produces small plantlets along its edge ▪ Tall flower spikes with clusters of orange-red bell-shaped flowers. 	<ul style="list-style-type: none"> ▪ Forms infestations in grasslands, open woodlands and coastal dunes. ▪ Highly poisonous, particularly to naïve, newly exposed stock. ▪ Affects use of stock routes
Navua sedge <i>(Cyperus aromaticus)</i> Not Declared	Navua sedge is a vigorous grass-like, perennial plant from tropical Africa	<ul style="list-style-type: none"> ▪ Vigorous grass-like perennial sedge growing 30-70cm high, occasionally reaching 2m. ▪ Continuously growing underground stem produces shoots at regular intervals along its length which can then develop an extensive shallow fibrous root system. ▪ Clusters of drooping leaves at the base of the stem, 5cm long and 3mm wide. ▪ Flower stalk is triangular with the white flower at the apex of the stalk. ▪ Seeds are brown to black and egg-shaped with a hook at one end 	Competes strongly for nutrients, light and moisture. Economic <ul style="list-style-type: none"> ▪ Invades and replaces pastures. ▪ Problem in sugarcane where the crop is light with poor canopy cover. ▪ Forms dense stands that smother tropical pasture species
Noogoora burr <i>(Xanthium pungens)</i> Not Declared	Noogoora burr (<i>Xanthium pungens</i>) is an erect, annual herb with blotched purple stems from America. This plant is often abundant after spring or summer floods	<ul style="list-style-type: none"> ▪ up to 2.5 m in height with blotched purple stems ▪ leaves are dark green on upper surface, 15 cm in diameter and roughly textured with minute bristles ▪ flowers are inconspicuous, in leaf axils towards the end of the branches ▪ flowers develop into hard, woody, spiny burrs, 1.2 cm to 2 cm long with hooked spines 	<ul style="list-style-type: none"> ▪ burrs contaminate wool, reducing its value through increased processing costs ▪ denies sheep access to watering points ▪ a competitor to pasture and summer crops ▪ seedlings are poisonous to domestic stock if eaten in sufficient quantities
Parthenium weed <i>(Parthenium hysterophorus)</i>	Parthenium found in Australia is native to North America but a distinctly different biotype occurs in South America. Parthenium is an annual herb with a deep	<ul style="list-style-type: none"> ▪ Grows to 1 to 1.5m high, developing many branches in its top half when mature. ▪ Pale green leaves, up to 2mm long, deeply lobed 	<ul style="list-style-type: none"> ▪ Parthenium found in Australia is native to North America but a distinctly different biotype occurs in South America.

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
Declared - Class 2 Weed of National Significance	taproot and an erect stem that becomes woody with age. Parthenium costs the beef industry a total of \$16.5 million per year and cropping industries several million dollars per year	and covered with fine soft hairs. <ul style="list-style-type: none"> Small creamy white flowers on stem tips. 4 to 10mm in a 5 sided shape. Flowers contain four to five black seeds that are wedge-shaped, 2mm long with two thin, white scales 	<ul style="list-style-type: none"> Initially recorded at Toogoolawah in 1955 and north of Clermont in 1960. Well-established in Central Queensland, west to Longreach and northern and southern Queensland. Infestations also found in New South Wales.
Praxelis (Praxelis clematidea) Not Declared	Native to South America, praxelis (<i>Praxelis clematidea</i>) is an annual short-lived perennial herb	<ul style="list-style-type: none"> an annual to short-lived perennial herb, usually 40-80 cm tall, but can grow to 1 m has hairy, brittle stems leaves are opposite, roundly triangular with an acute apex, hairy and toothed along the edges leaves have an unpleasant smell when crushed flowers are lilac-blue and form in clusters at the ends of stems each plant produces hundreds of small black seeds 	<ul style="list-style-type: none"> spreads rapidly along roadsides invades pastures and native vegetation where it can form dense monospecific stands that exclude other vegetation
Rat's tail grass (Sporobolus pyramidalis) Declared - Class 2	Giant rat's tail grass and other weedy sporobolus grasses are aggressive grasses that can reduce pasture productivity and cause significant degradation of natural areas. Giant rat's tail grass was originally introduced around the early 1960s in contaminated pasture seed	<ul style="list-style-type: none"> Very similar in appearance to other Sporobolus grasses. Grows to 0.6-1.7m tall. Seed head is up to 45cm long and 3cm wide. Seed heads change shape from a 'rat's tail' when young to an elongated pyramid shape when mature. Unlike Parramatta grass and giant Parramatta grass, giant rat's tail grass does not develop sooty spike on its seed heads. Difficult to distinguish from other pasture grasses and native <i>Sporobolus</i> grasses before maturity. 	<ul style="list-style-type: none"> Quickly dominates pastures, particularly after overgrazing or soil disturbance. Causes losses in carrying capacity and decreases production by up to 80%. Loosens teeth of cattle and horses while grazing
Rubber vine (Cryptostegia grandiflora) Declared - Class 2 Weed of National Significance	Rubber vine is a vigorous climber with twining, whip-like shoots. Rubber vine can grow unsupported as an untidy shrub with many stems. Originally from Madagascar, rubber vine was introduced into Australia as an ornamental shrub in 1875	<ul style="list-style-type: none"> 1-2m high and can scramble up to 30m high in trees. Glossy dark-green leaves, 6-10cm long by 3-5cm wide in opposite pairs. Stems, leaves and unripe pods exude a white, milky sap when broken or cut. 	<ul style="list-style-type: none"> Smothers riparian vegetation and forms dense thickets. Infestations expand outward from waterways, hillsides and pastures. Decreases biodiversity and impedes stock

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
		<ul style="list-style-type: none"> ▪ Flowers are large and showy with five white to light purple petals arranged in a funnel shape. ▪ Seed pods are distinctive, rigid and grow in pairs at the end of a short stalk. ▪ Pods have a tuft of long, white silky hairs, are 10-12cm long by 3-4cm wide and contain up to 450 brown seeds that can easily be disperse on wind currents 	<ul style="list-style-type: none"> ▪ and native animal movement. ▪ Poisonous to livestock. ▪ Presents difficulties for mustering stock
Sicklepod <i>(Senna obtusifolia, Senna hirsuta and Senna tora)</i> Declared - Class 2	<p>Sicklepod is native to America and similar to other <i>Senna</i> spp. are vigorous, competitive woody shrubs</p>	<ul style="list-style-type: none"> ▪ Grows 1.5-2.5m high by 1m wide. ▪ Leaves are divided into three opposite pairs, 4cm long and 2cm wide, rounded at the end and wedge-shaped at the base. ▪ Flowers are yellow , 1cm wide, with five petals. ▪ Seed pods are long, 10-15cm, and slender, 3-5mm wide. ▪ When ripe, pods burst open shedding seeds. ▪ Seeds are dark brown, shiny and flattened 	<ul style="list-style-type: none"> ▪ Invades pastures, roadsides, fence lines, creek banks and waste areas. ▪ Potential to become major weed to many crops within two to three growing seasons
Singapore daisy <i>(Sphagneticola trilobata)</i> Declared - Class 3	<p>Native to tropical America, Singapore daisy is a vigorous ground cover that will out-compete natural habitat. It is also becoming a problem by invading lawns, irrigated areas and around drains</p>	<ul style="list-style-type: none"> ▪ Leaves are lush, glossy green, usually 3-lobed, 4-18cm long, 1.5-8cm wide and in pairs along the stem. ▪ Flowers are yellow to orange-yellow, daisy-like, 2cm wide, on short stalks above the leaves. ▪ Seeds are elongated, brown, 4-5mm long 	<ul style="list-style-type: none"> ▪ Spreads rapidly and smothers seedlings, ferns and shrubs. ▪ Invades environmental areas
<i>Thunbergia fragrans</i> Declared - Class 1	<p><i>Thunbergia fragrans</i> is a small low vine with slender climbing stems from South East Asia.</p> <p>Biosecurity Queensland encourages people report this Class 1 pest plant and take actions to help stop the establishment, prevent the spread, and to control this pest</p>	<ul style="list-style-type: none"> ▪ Twining vine with triangular-ovate leaves that can have entire to finely toothed, sinuate margins. ▪ Leaves are 5-10cm long, opposite, blade ovate to arrowhead-shaped. ▪ Flowers are white, 3cm long by 5cm wide and have a sweet aroma. ▪ Seed capsules are round and end in a beak 	<ul style="list-style-type: none"> ▪ Threatens remnant vegetation in the wet tropics. ▪ Degrades creek and river banks
<i>Thunbergia grandiflora</i> Declared – Class 2	<p><i>Thunbergia grandiflora</i> is a small low vine with slender climbing stems from India</p>	<ul style="list-style-type: none"> ▪ Vigorous perennial twining vine. ▪ Leaves are choko-like up to 15cm long and 10cm 	<ul style="list-style-type: none"> ▪ Threatens remnant vegetation in the wet tropics.

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
		<p>wide with pointed tip.</p> <ul style="list-style-type: none"> ▪ Flowers are trumpet-shaped and have a short, broad tube, white on the outside, yellow inside expanding to five rounded pale lavender-blue petals, up to 8cm long and 6-8cm wide. ▪ Seed pods are cone-shaped, 3-5cm long with a rounded base. ▪ Seeds are flat, up to 1cm long covered in brown scales. ▪ Tuberos root system, some being as large as 70kg 	<ul style="list-style-type: none"> ▪ Degrades creek and river banks
<p>Tobacco Weed <i>(Elephantopus mollis)</i> Declared - Class 2</p>	<p>Tobacco weed is a vigorous and aggressive weed and is regarded as a serious weed of agriculture in many wet tropical or subtropical countries</p>	<ul style="list-style-type: none"> ▪ Slender, fast-growing herb reaching up to 150cm high ▪ Leaves are oblong or oval, 10-20cm long and 2-5cm wide, occurring mostly at the base. ▪ Leaves upper surfaces are rough and thinly covered in fine hairs. The undersurfaces are densely haired and resinous, especially on veins. ▪ Flowers are small, white and are in many-headed clusters at tips of stems and side shoots. ▪ Three small leaf-like bracts cup each cluster. Individual flowers are tubular with five lobes at the apex and are about 4mm long. ▪ Stem is more or less erect and sparsely branched, becoming woody at the base when mature. Covered with fine white hairs, it may cause skin irritation when brushed against. ▪ Seeds are brown to greyish-black, 3mm long, each with five fine, straight, white, bristle-like hairs on top 	<ul style="list-style-type: none"> ▪ Smothers healthy thick pastures with dense masses of broad-leafed seedlings. ▪ Major threat to the beef and dairy industries of North Queensland
<p>Tree privet <i>(Ligustrum lucidum)</i> Declared - Class 3</p>	<p>Broad leaf privet is an evergreen shrub originally from Japan and China. Broad-leaf privet is regularly seen in ornamental gardens throughout South East Queensland</p>	<ul style="list-style-type: none"> ▪ Grows up to 10m high. ▪ Branches closely packed. ▪ Dark-green broad leathery leaves grow in opposite pairs 4-13cm long, 3-6cm wide with pointed tips. 	<ul style="list-style-type: none"> ▪ Invades riparian vegetation and disturbed sites. ▪ Displaces rainforest species. ▪ Forms thickets, destroying native animal

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
		<ul style="list-style-type: none"> ▪ Tubular flowers are cream or white, 3.5-6mm long. ▪ Flowers have a sickly sweet fragrance. ▪ Berries are 9mm long and 12mm in diameter. ▪ Fruits occur as dense bunches of blackberries 	<ul style="list-style-type: none"> ▪ habitat. ▪ Causes irritation to hay fever sufferers

ANIMALS

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
Cane Toad (<i>Bufo Marinus</i>) Not Declared	<p>Cane toads were introduced in 1935 to control agricultural pests, but proved ineffective. For the past 60 years cane toads have been expanding their territory across Australia. Cane toads are capable of colonising at least four of the mainland Australian states.</p>	<ul style="list-style-type: none"> ▪ Grows up to 20cm in length. ▪ Adults are large and heavily built. ▪ Definite visor or awning extends over each eye and a high angular bony ridge extends from the eyes to the nose. ▪ Colouring on the upper surface may be brown, olive-brown or reddish-brown while underneath the toad varies from white to yellow and is usually mottled. ▪ Brown warts are present on all cane toads; however, males possess more than females 	<ul style="list-style-type: none"> ▪ Voracious feeder, consuming a wide variety of insects, frogs, small reptiles, mammals and even birds. ▪ Produces highly toxic venom from glands in its skin. Native predators that die after eating, or attempting to eat, cane toads include goannas, freshwater crocodiles, tiger snakes, red-bellied black snakes, death adders and quolls. Seventy-five species of Australian lizards, crocodiles and freshwater turtles are threatened by cane toads. Sixteen of these are 'threatened species' at either federal or state levels. ▪ Research on rainbow bee-eater birds southeast Queensland found that Cane toad predation caused 33% of nests to fail. ▪ The tadpoles of native frogs can die if they consume the eggs of Cane toad. Cane toad tadpoles have also been recorded to reduce the growth rates of native frog tadpoles under certain conditions. ▪ When an area is first invaded by cane toads the naturally high abundance of invertebrates appears to support very

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
			<p>large numbers of cane toads. As food items are exhausted, abundance appears to decline, The initial decline in invertebrate prey items that follows the toad's invasion front probably has significant flow-on effects to other insectivorous predators and may interrupt ecological processes, at least temporarily</p> <ul style="list-style-type: none"> ▪ Can cause death if ingested by domestic or native animals. ▪ Known to transmit diseases such as salmonella
<p>Cat (feral) (<i>Felis catus</i>) Declared – Class 2</p>	<p>A descendant of the African wild cat, the common 'house' cat has now been domesticated for about 4000 years. Although the domestic cat has a long history of association with humans, it retains a strong hunting instinct and can easily revert to a wild (feral) state when abandoned or having strayed from a domestic situation. The true feral cat does not rely on humans, obtaining its food and shelter from the natural environment. This is unlike semi-feral cats, which live around dump sites, alleys or abandoned buildings, relying on humans by scavenging rubbish scraps</p>	<ul style="list-style-type: none"> ▪ Similar appearance to a domestic cat; however, under ideal conditions will have increased muscle development, particularly around the head, neck and shoulders. ▪ Males can weigh between 3-6kg, females 2-4kg. ▪ Predominantly short-haired. ▪ Coat colours range from ginger, tabby, tortoiseshell to grey and black. ▪ Most active at night, with peak hunting activity soon after sunset and just before sunrise. ▪ Distinctive green eyesheen under spotlight 	<ul style="list-style-type: none"> ▪ Minor costs associated with condemnation of sheep and lamb carcasses due to sarcosporidiosis which is carried by feral cats. ▪ Opportunistic predator of small mammals, birds, reptiles, amphibians, insects and even fish. ▪ Particularly harmful in island situations, having caused the extinction of a number of species. ▪ Competes for prey with native predatory species such as quolls, eagles, hawks and reptiles. ▪ Contains a parasite that is particularly harmful to marsupials, causing blindness, respiratory disorders, paralysis, and loss of offspring. ▪ Injury and disease transmission to domestic cats. ▪ Carry parasites that can affect humans. ▪ High numbers in urban areas cause hygiene problems

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
<p>Common Indian Myna (<i>Acridotheres tristis</i>) Not Declared</p>	<p>The Indian myna is a medium-sized bird native to the Middle East, India and Asia. Indian mynas were released in Australia in the 1860s, and are now abundant in suburban and agricultural regions along the east coast. Indian mynas are an aggressive species that compete with native animals for food and nesting resources.</p>	<ul style="list-style-type: none"> ▪ Brown with glossy black head, neck and upper breast. ▪ Bright yellow bill, eye skin, legs and feet. ▪ 23-26cm long, weighing between 82-143g with a wing-span of 120-142mm. ▪ Distinctive white patches on wings that are visible in flight 	<ul style="list-style-type: none"> ▪ Reduces breeding success of some native parrot species. Indian mynas compete aggressively for nesting hollows and can evict native parrots from nest boxes or tree hollows and even kill eggs and chicks. ▪ Compete for tree hollows with other native wildlife (e.g. possums and gliders). Indian mynas can kill small mammals and remove sugar gliders from tree hollows. ▪ Damages fruit, vegetables and cereal crops. ▪ Spreads weeds such as lantana and fireweed. ▪ Potential reservoir for diseases such as avian malaria. ▪ Social nuisance with large roosts and nests causing noise, mess, potential allergies and fire hazards
<p>Deer (<i>Rusa</i>) (<i>timorensis moluccensis</i>) Declared – Class 2</p>	<p>Rusa deer are native to South East Asia. Rusa deer are widespread in the Indonesian archipelago and it has been introduced into South East Kalimantan, New Guinea, the Bismarck Archipelago, New Caledonia, Australia and New Zealand. Two subspecies are found in Australia</p> <p>Populations of wild rusa deer have also been found in coastal areas between Townsville and Rockhampton, and southern Queensland. A long-established, but little-known, population is located near Stanthorpe.</p> <p>Rusa deer that are contained within a deer-proof fence; for example, farmed rusa or rusa held by a game park are not declared. Any rusa deer not contained within a deer-proof fence are considered feral or wild and subject to control. The natural disposition of deer means that farmed animals escaping captivity quickly revert to the</p>	<ul style="list-style-type: none"> ▪ A medium-sized deer. ▪ Javan rusa stags may stand 110cm at the shoulder and weigh about 120kg. ▪ Hinds are up to 95cm at the shoulder and weigh up to 80kg. ▪ Moluccan rusa are slightly smaller. ▪ Has a coat that varies from greyish to yellowish or reddish brown, with darker brown on the hindquarters and thighs. ▪ Body hair is coarse and sparser than other deer. ▪ New calves have a rich red coat. ▪ Stags develop a mane during winter. ▪ Antlers of rusa are typically three tined with the beams forming a characteristic lyre shape ▪ Distinguishing feature: Light chest and throat; line of 	<ul style="list-style-type: none"> ▪ There is a body of evidence, from Australia and overseas, that feral deer can damage the natural environment. Negative impacts reported include consumption of native vegetation, damage to trees, dispersal of weed seeds and fouling water. ▪ Damage to forestry seedlings, agricultural and horticultural crops, commercial flower crops, orchards, irrigation systems and fences has been reported. In orchards, feral deer sometimes selectively consume new growth and ringbark trees, leading to reduced orchard viability. In dry seasons, feral deer can compete with cattle for pasture and supplementary feed. ▪ Hazardous on suburban roads and

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
	wild state.	dark hair visible on chest between forelegs.	highways
Dog (feral) (<i>Canis familiaris</i>) Declared – Class 2	<p>The term 'wild dog' refers collectively to purebred dingoes, dingo hybrids, and domestic dogs that have escaped or been deliberately released. In central southern Queensland a wild dog barrier fence helps protect 26.5 million hectares of sheep and cattle country from wild dog impacts.</p>	<ul style="list-style-type: none"> ▪ Found throughout Queensland. ▪ In far western areas many wild dogs/dingoes are purebred. ▪ Close to settled areas most dingoes are hybrid dogs. 	<ul style="list-style-type: none"> ▪ Feral dogs and hybrids compete directly with dingoes for food and living spaces, particularly in refuge areas. ▪ Hybridisation between dingoes and other wild dogs is swamping the dingo gene pool. ▪ Predation on small remnant populations of native species such as bridled nailtail wallabies, koalas and tree kangaroos threatens biodiversity. ▪ Wild dogs cause stock losses and lowers profitability from bitten stock. ▪ Bitten stock return lower prices than normal stock. ▪ There is a risk of disease spread to domestic animals (e.g. hydatidosis, neospora). ▪ Wild dogs can spread hydatids (a parasitic disease that can result in human health impacts) and have the potential to spread exotic diseases that affect human beings (e.g. rabies). ▪ There is a risk of wild dogs attacking children in urban areas particularly if the public contribute to habituation and socialisation of wild dogs. ▪ Wild dogs can be a nuisance to householders and tourists. ▪ Predation upon pets by wild dogs occurs in peri-urban areas
Horse (feral) (<i>Equus caballus</i>) Not Declared	<p>There may be as many as 200,000 feral horses in Queensland, mainly in semi-arid western and north-western areas of the state. Feral horses have been</p>	<ul style="list-style-type: none"> ▪ Morphologically, feral horses are no different in general appearance to domestic horses. Both forms are variable, depending on breeding and origin of 	<ul style="list-style-type: none"> ▪ Competition with cattle for food and water. One feral horse consumes plant

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
	<p>breeding in the wild since small numbers of domestic horses either escaped or were dumped over the last 150 years. In some places feral horses are causing significant damage. However, control efforts are always controversial.</p>	<p>parent stock.</p> <ul style="list-style-type: none"> ▪ Large herbivores, with long, strong legs that are well adapted for long-distance travel in search of food and water. ▪ Average size is 1-1.6m shoulder height. ▪ Average weight is 350-450kg. ▪ Coat colour is variable, ranging from bay (brown body with black mane and tail) chestnut (orange) black, brown and grey. ▪ Coat hairs are short and fine, growing longer in winter. ▪ Tail is relatively short but has long hairs that can reach the ground. ▪ Also long hair along the neck (mane) and forehead (forelock). Long legs facilitate efficient travel across open grassy plains 	<p>matter comparable to that consumed by one to two cows. Lost Australian beef production has been estimated at \$30 - \$60 million per year.</p> <ul style="list-style-type: none"> ▪ Soil degradation caused by overgrazing and trampling, mainly around water holes. ▪ Damage to watering points, particularly during drought, as well as damage to fences. ▪ Disruption to station horses during stock mustering (feral stallions may take mares from station stocks and upset breeding programs). ▪ Removal of native vegetation by grazing and trampling, with flow-on effects to native wildlife ▪ Feral horses can trample vegetation, damage creek banks and waterways ▪ Provide a potential reservoir for exotic diseases. ▪ They pose a danger to drivers and themselves on some highways ▪ Feral horses can damage indigenous cultural heritage sites by raising dust and by licking and eating the art work
<p>Pig (feral) (<i>Sus scrofa</i>) Declared – Class 2</p>	<p>The feral pig is one of the most widespread and damaging pest animals in Queensland. Feral pigs in Australia are descendants of various subspecies of the domestic pig. Accidental and deliberate releases of domestic and semi-feral pigs, and subsequent breeding have resulted in a large feral pig population.</p>	<ul style="list-style-type: none"> ▪ Typically smaller, leaner and more muscular than domestic pigs with well-developed shoulders and necks, and smaller, shorter hindquarters. ▪ Body usually covered in sparse, coarse hair. ▪ Longer, larger snout and tusks; straighter tail; smaller, mostly pricked ears; and much narrower back than domestic pigs. ▪ Mostly black, buff-coloured or spotted black and 	<ul style="list-style-type: none"> ▪ Spread weeds. ▪ Degrade waterholes and wetlands. ▪ Cause soil erosion. ▪ Prey on a wide range of native species including small mammals. ▪ Significantly impact marine turtle populations by eating eggs. ▪ Can carry diseases that affect native

NAME	GENERAL INFORMATION	DESCRIPTION	IMPACTS
		<p>white.</p> <ul style="list-style-type: none"> ▪ Generally shy and nocturnal, but can be active any time of the day. ▪ Juveniles may be striped, while old boars (razorbacks) have massive heads and shoulders, and a raised, prominent backbone 	<p>animals.</p> <ul style="list-style-type: none"> ▪ Damage almost all crops from sowing to harvest. ▪ Feed on seed, grain, fruit and vegetable crops. ▪ Damage pastures by grazing and rooting. ▪ Prey on lambs. ▪ Can carry diseases and parasites that affect stock. ▪ Carry many diseases that affect people
<p>Rabbit (<i>Oryctolagus cuniculus</i>) Declared – Class 2</p>	<p>Rabbits are one of Australia's major agricultural and environmental animal pests costing between \$600 million and \$1 billion annually.</p> <p>Rabbits eat pastures and crops, compete with native animals, destroy the landscape and are a primary cause of soil erosion - preventing regeneration of native vegetation.</p> <p>Introducing and selling rabbits in Queensland is not permitted and penalties apply. Limited numbers of permits for domestic rabbits are only available from Biosecurity Queensland for research purposes, public display, magic acts or circuses. Before a permit is granted, a number of guidelines need to be fulfilled.</p>	<ul style="list-style-type: none"> ▪ Usually grey-brown with a pale belly; black or ginger can also be common. ▪ Long hind legs and short front legs. ▪ Long ears and large eyes. ▪ Usually weighing about 1.3-2.3kg 	<ul style="list-style-type: none"> ▪ Contribute to total grazing pressure on pastures ▪ Reduced pasture production including reserves for dry seasons leading to reduced livestock and wool production ▪ Quality of pasture reduced ▪ Reduced crop production and product quality ▪ Direct control costs ▪ Degradation of native vegetation as rabbits eat seedlings and vegetation can't regenerate ▪ Degradation of soil from overgrazing ▪ Degradation of water from overgrazing (secondary to soil erosion) ▪ Direct competition with native animals for food and space ▪ Food source for predator species ▪ Changes the population dynamics of predator species ▪ Indirect impacts on birds, mammals and

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			insects that rely on plants <ul style="list-style-type: none"> ▪ Direct and indirect control costs - warren ripping and harbour destruction can also have adverse environmental effects ▪ Damage to infrastructure, gardens and buildings ▪ Loss of amenity and landscape values ▪ Reduced incomes to rural households ▪ indirect control costs (rates, taxes)