Companion to the Gympie Regional Council Biosecurity Plan 2023-2028

To be read in conjunction with the Biosecurity Plan 2023-2028

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Contents

1. Introduction

1.1 Purpose

The Companion to the Gympie Regional Council Biosecurity Plan (Plan Companion) sets out the framework and strategic decision-making processes that were applied in the development of the Gympie Regional Council Biosecurity Plan (the Plan).

This document presents and validates local government's approach to invasive plant and animal management and supports strategic and operational decision making.

The Plan companion provides information on:

- Strategic biosecurity management.
- Supporting strategies and policies.
- Biosecurity plan development.
- Reasonable and practical measures to reduce risk.

The Companion shares the same implementation and expiration dates as the Gympie Regional Council Biosecurity Plan 2023-2028.

1.2 A local plan for local issues

Each local government area is unique. Local government biosecurity plans provide the mechanism for tailoring invasive species management requirements to local situations and needs.

The *Biosecurity Act 2014* (the Act) establishes the legislative framework for the management of biosecurity risks using the restricted and prohibited matter categories and the general biosecurity obligation (GBO). Local government biosecurity plans prioritise the management of invasive species and define the reasonable and practical actions for land managers to meet their GBO.

1.3 Strategic biosecurity management

Strategic biosecurity management requires a planned and well considered approach to the management of invasive plants and animals. Modern biosecurity planning practices use the generalised invasion (PECA) curve (Figure 1) as the basis for strategic decision-making for invasive species management. This pairs an understanding of invasion biology with economic modelling to help decision-makers determine where to invest their resources.

Figure 1 – The generalised invasion curve describes the four stages of invasive species invasion and the most appropriate management goal for each (Agriculture Victoria 2020).
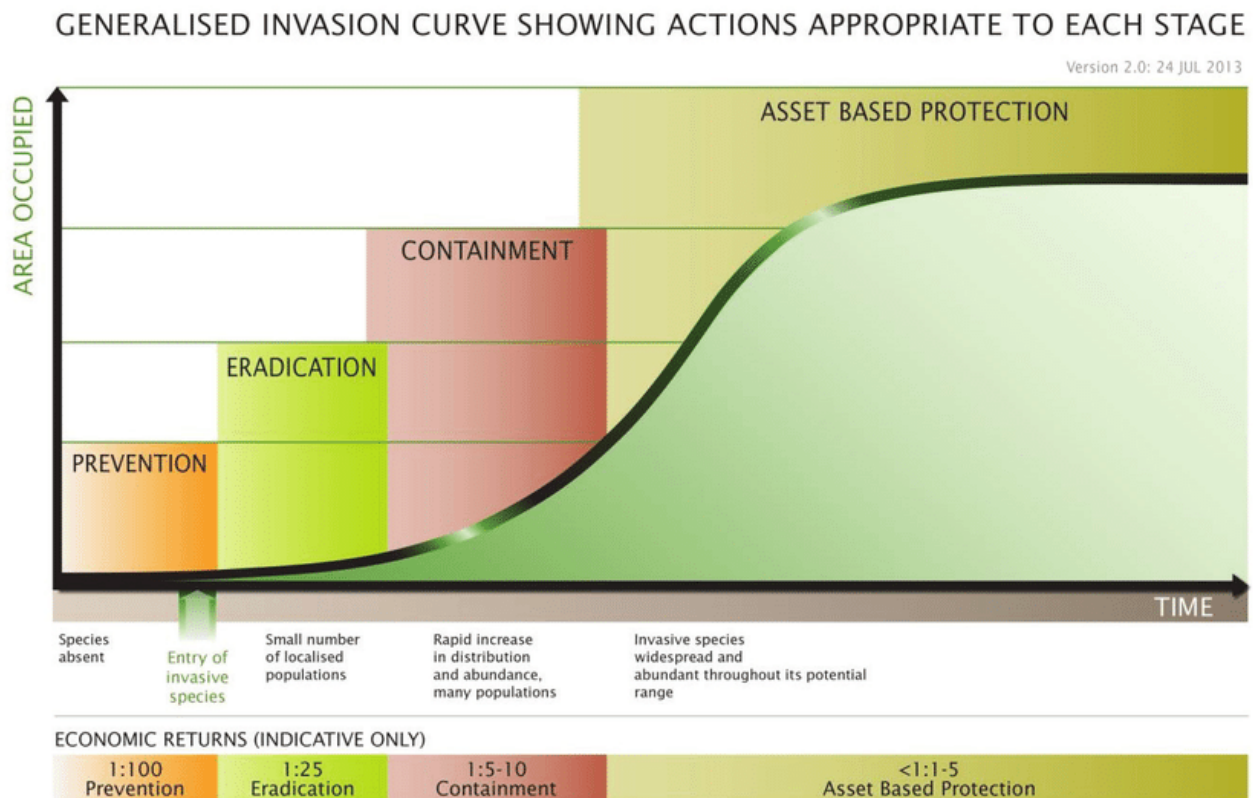
1.4 Management goals

There are four management goals that relate to the stages of invasive species invasion, namely Prevention, Eradication, Containment and Asset protection. Each of these are described below.

- **Prevention** aims to prevent the arrival and establishment of invasive plants and animals that are not already in the local government area. Prevention is always the most cost-effective management approach because there are no costs associated with management or resulting from impacts of the invasive species, and surveillance and public awareness campaign costs are relatively small. Resources are focused on the species that are most likely to invade the Gympie region.

- **Eradication** is the elimination of every individual of a species from an area. This strategy can initially be costly because of the intensity of management and surveillance work required to be successful. However, compared to the resources required for ongoing management of established pests, eradication has overall much reduced management costs as it does not require on-going investment.

  Broad-scale eradication is generally not considered feasible for wide-spread pest species because of the significant costs associated with undertaking intensive management and surveillance activities over large areas, and the low chance of achieving success.

- **Containment** involves the establishment of areas where there are defined management protocols that halt or slow the rate of spread of an invasive species. The aim is to actively restrict where a species grows so that it does not spread to occupy all suitable habitat within its potential range, thus reducing or delaying the negative impacts on agriculture and natural systems.

  Because there are usually no physical barriers to spread, the chance of re-invasion of clean areas from the infested zone is reasonably high. Therefore, for this strategy to work effectively, a commitment to on-going investment in surveillance and outlier control is required.

  Outlier area management is the priority and targets management of satellite populations outside a containment area or away from a core infestation. This is similar to eradication but is used in an area where on-going reinfestation is likely.

  Core infestation area management slows the rate of spread and prevents the establishment of new core infestations or expansion of existing ones. The management actions are in line with Asset protection protocols.

  There are significant strategic benefits associated with focusing limited management resources on outlying infestations rather than core areas. Through this mechanism, a relatively small investment of resources can protect large areas of suitable habitat from potential invasion.

- **Asset protection** management actions reduce the impacts of an established or widespread weed or pest animal to environmental, social, or economic assets. Limited resources should be strategically allocated to minimise biosecurity risks that result in the most damaging and costly impacts to the asset being protected.

1.5 Supporting strategies and policies

All tiers of government are committed to the strategic management of invasive species in Queensland and have developed documents containing a wealth of information on a range of biosecurity related subject matter. Strategies, policies and plans relevant to the Gympie region, that guided development of the Plan are listed in Table 1.

Table 1. Invasive species management strategies, policies and plans.

Level	Description
Federal	*Australian Weeds Strategy (2017-2027)* **and** *Australian Pest Animal Strategy (2017-2027)* • Identifies national priorities for invasive plant and animal management. *Weeds of National Significance (WONS) strategies* • Develops strategic plans for a range of species identified because of their invasiveness, impacts on primary production and the environment, potential for spread and socioeconomic impacts. *Australia's Biodiversity Conservation Strategy 2010-2030* • Recognises that invasive species continue to be a major cause of biodiversity pressure which is increasing with climate change. *National Feral Pig Action Plan 2021-2031* • The overarching aim of the Plan is to lead and support all land managers (public and private) to work more effectively to manage feral pigs and reduce their impacts. *Recovery Plans, Threat Abatement Plans* **and** *Wildlife Conservation Plans for Matters of National Environmental Significance*

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Level	Description
State	*Queensland Biosecurity Strategy 2018-2023* • Establishes a framework to protect Queensland's ecosystems, industries and way of life, maintain Queensland's national and international reputation for product safety and integrity and ensure ongoing market access for commodities through effective management of pests and diseases. *Queensland Invasive Plants and Animals Strategy 2019-2024* • Establishes a state-wide planning framework that addresses the environmental, economic and community impacts of Queensland's current and potential weeds and pest animals. • The development and implementation of this strategy is based on the management principles of integration, public awareness, commitment, consultation and partnership, planning, prevention and early intervention, best practice, and improvement (research, monitoring and evaluation). *Queensland Wild Dog Management Strategy* • The focus of the strategy is on cooperative management to minimise the negative impacts of wild dogs. Stakeholders, including land managers, government, and the community, will have a shared responsibility, working together to deliver effective, coordinated and humane management of wild dogs. *Queensland feral deer management strategy 2022-27* • The Feral deer management strategy 2022-27 provides stakeholders with a vision and set of strategic goals and objectives to guide feral deer management in Queensland.
Local	*Gympie Regional Council Biosecurity Policy* *Gympie Regional Council Biosecurity Plan* Adjoining local government biosecurity plans

2. Biosecurity plan development

2.1 Risk-based decision making

Risk-based decision making has been used throughout the development of the Plan and informs the following processes:

- Identification of priority invasive plants and animals
- Selection of reasonable and practical measures
- Compliance actions.

Figure 2. Risk-based decision-making applied at the state, local government and authorised officer levels.

State	Local Government	Authorised Officer
Support establishment of prohibited and restricted matter lists. Provide consistent approaches.	Prioritise species for strategic management. Establish standard levels of reasonable and practical measures. Provide consistent approaches.	Establish property level of reasonable and practical measures. Use consistent approach to ensure fairness. Record decision-making process to justify individual actions.

Council biosecurity officers (CBOs) make decisions using professional experience, and based on an assessment of the biosecurity risks related to the individual situation. This information is recorded on council's Biosecurity Information System. Documenting the reasons for a decision provides a chain of evidence which is used as evidence to support decision making.

A risk-based approach to decision-making means that the level of management response is linked to the degree of risk posed by the invasive plant or animal under consideration. This is the foundation for determining the reasonable and practical measures that will be applied to meet the invasive species management goals, as set out in the Plan.

Invasive plant and animal management planning considers potential impacts, stakeholder requirements and expectations, resourcing capacity and alignment to other invasive plant and animal management strategies, to ensure that resources target pest management priorities. A CBO also considers the impact the decision will have on people and the landscape to ensure it is reasonable, proportional, and justifiable in terms of cost, benefit, and imposition.

2.2 Biosecurity risk-based assessment framework

A biosecurity risk-based assessment framework was applied to invasive biosecurity matter (plants and animals) identified as being significant to the Gympie region to determine invasive species management goals and priorities. A focus on priority invasive species ensures that resources are targeted to provide the greatest return on investment of resources.

The assessment framework includes the following steps:

- Step 1: Conduct a risk analysis on the invasive species.
- Step 2: Identify the management feasibility for each species.
- Step 3: Establish management goals for each species.

2.2.1 Step 1: Conduct a risk analysis on the invasive species

Invasive species risk analysis considers potential and existing threats and the negative impacts of the invasive species on conservation/biodiversity, social, agricultural, and economic values.

Invasive species profiles were developed for invasive plants and animals that currently or have the potential to cause impacts in the Gympie region for the elements listed in Table 2. The score associated with each element is used to calculate the individual species 'risk score'. The formula for the final risk ranking for each invasive species is:

(**Existing Priority** + **Current Status** + **Potential Threat** + **Impact**) **x Extent** **= Risk score**

Table 2. Invasive species profile assessment table

Element	Score
Existing Priority	
Weed of National Significance (WONS)	5
National Eradication Program	5
State Management Program	5
Other	3
Current Status	
Prohibited Invasive Biosecurity Matter	5
Restricted Invasive Biosecurity Matter	4
Declared locally	4
Environmental	2
Not declared	1

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Element	Score
Extent	
Isolated/historic	5
Localised (occasional)	4
Localised (common)	3
Widespread (occasional)	2
Widespread (common)	1
Potential Threat	
Likelihood of widespread establishment	
Already established throughout the region.	5
Characteristics well suited to the region, very likely to establish, present in neighbouring area, recorded historic sites.	4
Characteristics moderately suited to the region, numerous means of introduction.	3
Limited suitability to the region; few, if any, means of introduction.	2
Unsuited to the region; very little, if any, likelihood of establishment.	1
Dispersal mechanisms	
Spread exceptionally easily by all listed vectors.	5
Spread easily via 3 of the listed vectors.	4
Spread moderately easily via 2 of the listed vectors.	3
Spread by only 1 of the following vectors: • human/machinery, • domestic animal/wildlife, • reproductive/vegetative, • wind/water.	2
Limited ability to spread in any way.	1
Invasiveness	
Species displays all listed characteristics and can successfully invade a range of land systems.	5
Species displays 3 listed characteristics and can successfully invade a range of land systems.	4

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Element	Score
Species displays 2 listed characteristics and can successfully invade suitable land systems only.	3
Species displays limited invasive characteristics limited to 1 of the following and may invade suitable land systems only: • ability to germinate/reproduce in arrange of environments, • competitive ability, • reproductive advantage, • distance of dispersal.	2
Species doesn't display any significant invasive characteristics.	1
Management Cost	
Ongoing and high-cost treatments to discharge general biosecurity obligation.	5
Ongoing, moderate cost treatments to discharge general biosecurity obligation.	4
Initial moderate cost to discharge general biosecurity obligation.	3
Multiple, low-cost treatments to discharge general biosecurity obligation.	2
Single, low-cost treatment to discharge general biosecurity obligation.	1
Impacts	
Conservation/Biodiversity	
Species likely to drastically out-compete native species and impact on biodiversity in a broad range of natural areas (including sensitive areas).	5
Species likely to drastically out-compete native species. Impact on biodiversity limited to the pests' suited habitat.	4
Species has the potential to invade edges and disturbed systems, has the potential to destroy ecology which is already threatened.	3
Species likely to develop a presence in conservation areas but unlikely to out-compete native species.	2
Species unlikely to establish effectively in conservation areas unless by isolated infestations, dumping or urban escapees. Unlikely to penetrate undisturbed areas.	1
Social	
Species displays severe impacts on all 4 listed social values.	5
Species has significant impacts on 3 of the listed social values.	4

Element	Score
Species has significant impacts on 2 of the listed social values.	3
Species may impact on 1 of the following social values: • human health and wellbeing, • personal safety and accessibility, • visual amenity, • management of public and private assets.	2
Species has no documented impacts on any social values.	1
Agriculture	
Major threat to agriculture by way of reduced output with increased control expenses. Control is added to existing routine management practices and impacts on economic viability of operations. Has the potential to devalue land or force change of land use. Impacts likely to extend to adjoining properties.	5
Moderate threat to agriculture with reduction in output and increased management expenses. Control is added to existing routine pest management practices for crop or pastures. Benefits of management outweigh costs. Not likely to impact on land value. Impacts may extend to adjoining properties.	4
Moderate threat to agriculture. Increased maintenance including drainage lines, creeks and roadways. Threats to crop/pasture/livestock can be abated as part of routine management practices.	3
Moderate threat to farm assets and visual amenity throughout the property. Species may impact on native vegetation in non-production areas over time.	2
Not of concern to agriculture under good land management practices.	1
Economic (other than agriculture)	
Species may have a negative impact on 4 of the listed economic values.	5
Species may have a negative impact on 3 of the listed economic values.	4
Species may have a negative impact on 2 of the listed economic values.	3
Species may have an impact on only 1 of the following economic values: • ability to derive income from the land system, including land values, • visual amenity, • ability to harbour pests, • ease of management.	2
Not of concern to economic endeavours in the region.	1

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2.2.2 Step 2: Identify the management feasibility for each species.

Feasibility of control for invasive species considers the size and location of the infestation, the available resources, the commitment to undertake control actions, and the availability of effective control tools.

Feasibility for control heavily influences what management goal is practically achievable for each invasive species. A feasibility for control score profile was calculated for each of the invasive species considered in the Plan, and this score was used to determine the overall invasive species management goal, in Step 3.

Table 3. Feasibility for control scoring

Element	Score
Achievability/feasibility of long-term control	
Prevention of entry of high-risk species likely as high-risk sites and pathways identified, and surveillance programs are in place.	6
Eradication of the invasive species is highly achievable as incursion is small or very contained. Ongoing surveillance necessary to ensure no further reinfestation.	5
Potential to eradicate isolated infestations/populations in particular catchment/geographic area that is unlikely to become reinfested.	4
Potential for Council/landholders to satisfy basic strategic control targets with appropriate funding/ resources. Management requires control of isolated populations to prevent further spread.	3
Management of the invasive species requires universal commitment from all stakeholders. Operational control is reliant on coordinated action from all stakeholders.	2
Invasive species is widespread throughout the region covering various tenures. There is no universal control available.	1

2.2.3 Step 3: Establish management goals for each species

Management goals reflect the appropriate invasive plant or animal management outcomes for each invasive species, based on the generalised invasive curve (Figure 1). Management goals were determined for each invasive species using the formula below and are represented in the management goal matrix (Table 4).

Risk Score vs **Feasibility of Control** = **Management Goal**

Table 4. Management goal matrix

Risk	Feasibility of Control				
	Negligible	Low	Medium	High	Very High
Negligible	No/limited action	No/limited action	No/limited action	No/limited action	No/limited action
Low	No/limited action	No/limited action	Asset protection	Asset protection	Asset protection
Medium	Asset protection	Asset protection	Asset protection	Containment	Containment
High	Asset protection	Asset protection	Containment	Containment	Eradication
Very High	Asset protection	Asset protection	Containment	Eradication	Eradication

The four management goals of Prevention, Eradication, Containment and Asset protection and the 'outcome' expected for each of these goals is set out in Table 5. Key actions describe how the outcomes are to be achieved.

Management goal matrix result of no/limited action applies to invasive species that are very low risk and required outcomes have not been set for these species. Council can provide advice regarding management options for these species on request.

Table 5. Management goal expected outcomes and related key actions.

Outcome	Key actions
Prevention: stop entry of an invasive species not recorded in the region (includes planning and preparedness).	GRC implements *invasive species prevention actions*: • Programs are implemented that aim at preventing the entry of high priority species not present in the region. E.g., ongoing public awareness campaigns. • High risk areas and pathways of entry are identified and monitored regularly to identify possible incursion by new species. • All staff aware of high priority species and high-risk sites and pathways.

Outcome	Key actions
Eradication: destruction of an invasive species infestation (usually in low abundance).	GRC implements *invasive species eradication actions*: • Species not previously recorded and / or are in low abundance in the region are prevented from establishing. • Effective response program in place to ensure all visible incursions / populations are effectively controlled within the entire region. • Effective response program in place for historical infested sites, which are identified and monitored regularly to identify and eradicate invasive species out-breaks in these areas.
Containment: restrict spread of an infestation from existing location.	GRC implements the *Invasive species containment actions*: • Species not widespread in the region but may be locally abundant and eradication not feasible. Focus resources to inhibit spread of invasive species to areas suitable for establishment.
Asset protection: protection of assets from impacts once an invasive plant or animal is established. Asset examples: • Agricultural land • National Park	GRC implements the *Invasive species asset protection actions*: • Management programs target reduction of impacts on high priority assets* from widespread invasive species. • Impact of certain widespread species* reduced in the region through identification of management zones and targeted programs. • Landholders implement activities to reduce the impact of invasive plants and animals on their land, as well as others. • Landholders throughout the region have the capacity to manage widespread invasive species. * As determined by council.

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2.3 Reasonable and practical measures

You can meet your general biosecurity obligation by meeting the 'outcomes' expected for each of the four management goals. Reasonable and practical measures define the actions a person must take to reduce the biosecurity risk associated with the invasive plants or animals that are present on land or under their control, to satisfy their GBO.

A Council biosecurity officer can provide advice as to what is considered an appropriate control measure and will consider site-based factors that increase or decrease the level of biosecurity risk associated with a particular invasive species. This could include seasonal factors, other mitigating strategies that have been put in place, the organic status of the property and the capacity of the property manager to undertake the work. Any appropriate management option may be used as long as it results in the required management outcome.

Examples of measures that could be practically achieved and would reasonably be expected to manage a weed or pest animal to meet a specific management goal is provided in Table 4 of the Plan.

Photo: Gympie saleyards

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