Queensland invasive plants and animals strategy **2019–2024**

Queensland Government

CS8731 05/19

Cover images:

Coral cactus (*Cylindropuntia fulgida* var. *mamillata*) is resistant to drought and can form dense infestations; cochineal beetles are used in biocontrol of this species

The European red fox (*Vulpes vulpes*) is a major threat to agricultural and native species alike

This publication has been compiled by Invasive Plants and Animals in Biosecurity Queensland, Department of Agriculture and Fisheries.

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Introduction

Invasive plants and animals have significant impacts on the environment, the economy, human health and social amenity. In turn, this affects our industries (such as agriculture), our communities and our way of life.

The management of invasive plants and animals is the shared responsibility of land managers, industry, the community and all levels of government. Shared responsibility has been made a legal requirement through the general biosecurity obligation under the *Biosecurity Act 2014*. The primary responsibility rests with those who deal with biosecurity matter—they must reduce the risks that their activities create. However, a nil-tenure approach that engages all stakeholders is best practice, particularly for mobile species. In this approach, control methods are applied in a cooperative and coordinated manner across all land tenures by all stakeholders at a landscape scale rather than a property scale.

The purpose of this strategy is to establish a statewide strategic planning framework that will address the impacts of invasive plants and animals currently within Queensland and to reduce the incidence of new exotic species entering Queensland.

Vision

Invasive plants and animals are cooperatively managed to reduce their impacts on the environment, the economy, human health and social amenity as it relates to the community.

Mission

To direct and facilitate strategic and targeted actions to reduce the impacts of invasive species.

Scope

This strategy encompasses invasive plants and animals, including exotic weeds and pest animals, invertebrate pests and freshwater pest fish.

This strategy does not include overabundant native species or marine pests (which are addressed in the national *Marine pest plan 2018–2023*).

Alignment

This strategy complements other key biosecurity documents including:

- the *Queensland biosecurity strategy: our next five years 2018–2023*, which outlines six strategic themes for management within the Queensland biosecurity network
- the *Australian pest animal strategy 2017–2027*, which embodies eight principles that underpin effective pest animal management
- the *Australian weeds strategy 2017–2027*, which provides seven principles of effective weed management
- the Intergovernmental Agreement on Biosecurity (IGAB), which came into effect in 2012, plus the recommendations in the 2017 review endorsed by the Agriculture Ministers' Forum
- national legislation such as the *Environment Protection and Biodiversity Conservation Act 1999*.

More details on these documents are provided in the appendix (pages 19–21).

Impacts of invasive plants and animals

Queensland's environmental diversity and climatic conditions favour the establishment of many invasive species. Numerous plants and animals have been introduced, either deliberately or accidentally. Some of these species have become invasive—that is, they have spread and multiplied to the point where they can cause damage to the environment, the economy and the community.

Invasive plants and animals have the potential to adversely alter ecosystem function, reduce primary industry productivity and profitability, and threaten human and animal health and social amenity.

The environment

Introduced invasive species place considerable pressure on native biodiversity in our environment. This can be directly, for example by predation, or indirectly, for example by altering vegetation structure, ecological and physical processes or landscape resilience. The consequences can be the reduction or extinction of native species.

The negative impacts of invasive plants and animals on our environment and biodiversity include:

- direct predation of native species
- loss of food and shelter for native species
- degradation of native vegetation and habitats
- reduction and possible extinction of native plant and animal species
- spread of disease
- competition with native species for shelter and food
- loss of genetic purity of native species (hybridisation)
- loss of stability of the environment, leading to the inability to support agricultural business.

The economy

Conservative estimates suggest that invasive animals cost the Australian economy between $720 million and $1 billion annually. This cost stems predominantly from management (public and private) and lost production.

Estimates of the annual cost of invasive plants to Queensland are around $600 million. This cost stems from management and control efforts and lost agricultural production.

Additionally, there is an unquantifiable cost of broader economic impacts felt by utility companies, the packaging and transport industries and others involved in the supply chain, and the ecotourism industry.

The negative economic impacts of invasive animals include:

- direct control and management costs
- predation of livestock (by wild dogs, foxes and feral pigs)
- competition with livestock for resources

- destruction of natural resources through soil disturbance and removal of vegetation
- destruction of pastures and crops
- general nuisance in urban and rural residential areas and associated management
- reduction of ecotourism due to destruction of natural resources.

The negative economic impacts of invasive plants include:

- competition with pasture, leading to reduced stocking capacity and erosion
- toxicity to stock
- competition with crops for water and nutrients
- increased stock mustering costs
- loss of ecotourism values
- reduction of water quality and irrigation (from aquatic invasive plants)
- management costs arising from the use of physical, mechanical and chemical control methods
- increased cost of fire preparedness and response due to spread of grasses that have high biomass
- costs associated with contamination by invasive plant seeds and the consequent impacts on trade.

Human health

Invasive plants and animals can cause health problems, some of which become quite severe.

The negative impacts of invasive animals on human health include:

- spread of serious diseases
- painful stings and bites, sometimes causing dangerous allergic reactions
- predation of livestock and pets, causing emotional trauma
- increased risk of injury due to motor vehicle accidents.

The negative impacts of invasive plants on human health include:

- allergic reactions that may cause respiratory or sensory disease
- increased risk of fire, causing health and safety concerns.

Social amenity

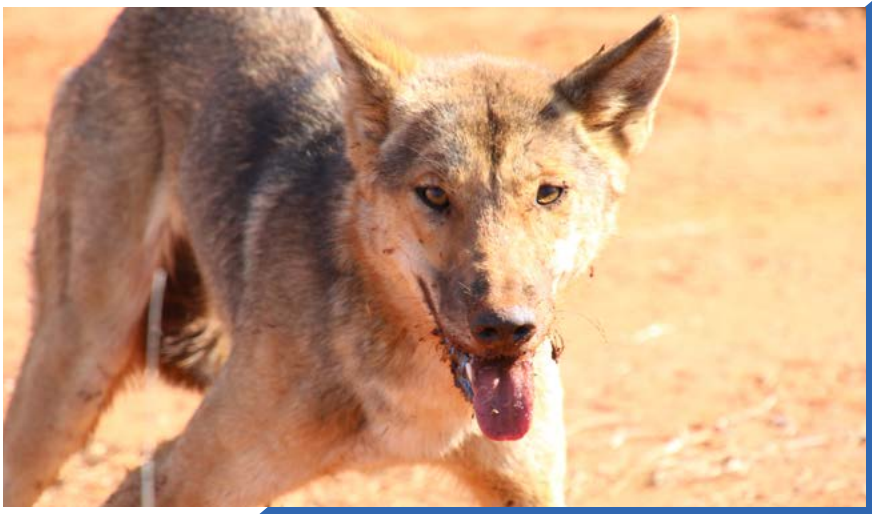
Sometimes invasive plants and animals affect our way of life, particularly in urban and rural residential areas. They can cause general nuisance and disturbance and reduce the community's enjoyment of natural areas.

The negative impacts of invasive plants and animals on social amenity include:

- damage to structures
- increased risks to safety and wellbeing
- reduced aesthetic value in recreational areas
- reduced outdoor activity.

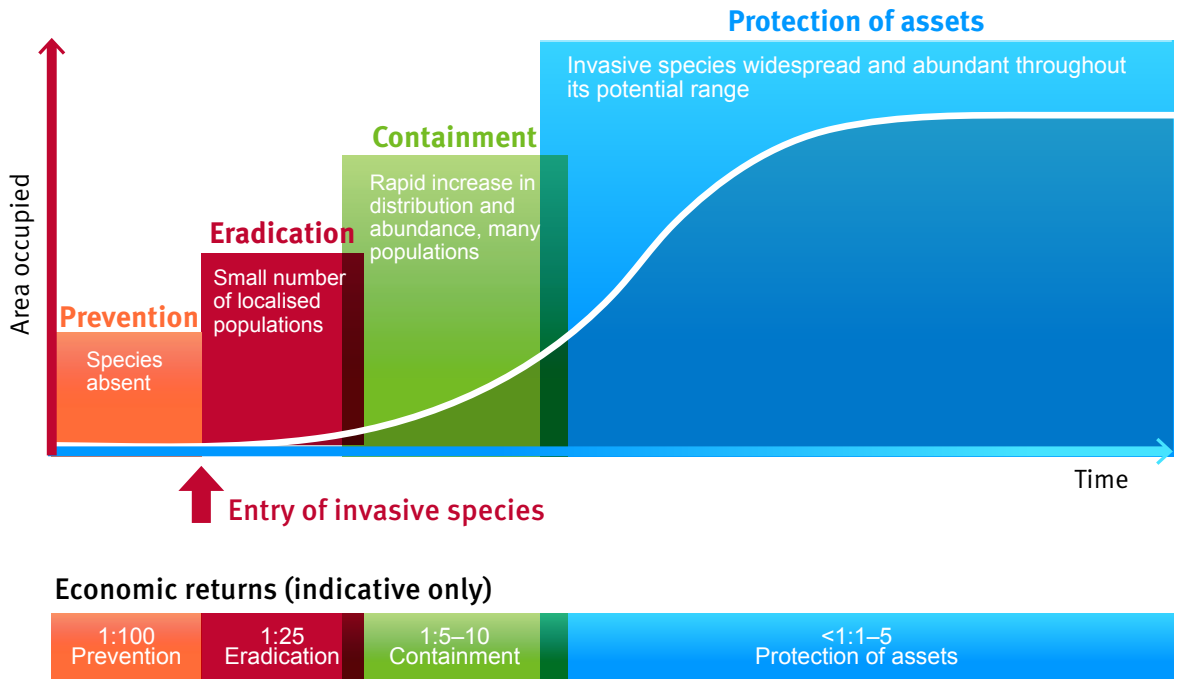
For more information on the impacts of invasive plants and animals, visit **daf.qld.gov.au**.

Wild dogs (*Canis familiaris*) cause stock losses and prey on native wildlife



The stages and scope of management

To effectively address the impacts of invasive plants and animals, we need to consider management in the context of the full continuum of activity as it relates to biosecurity. This continuum is shown in the following generalised invasion curve.



Generalised invasion curve showing actions appropriate to each stage

Source: *Biosecurity strategy for Victoria* (2009)

Key stages of the invasion curve are:

- prevention of an incursion (including planning and preparedness)
- eradication of an incursion (usually requiring early detection)
- containment of an incursion (to a geographical area)
- protection of assets (from impacts once an invasive plant or animal is established).

The invasion curve includes an indicative economic return for each stage. The return on investment is higher for prevention than for management of localised or widely established populations. Also, the return on a government's investment in ongoing management is improved when it supports collective industry and/or community action instead of being a sole investor.

Operationally, the approach required to eradicate a new invasive species is very different from that required to protect assets from an established invasive species. Managing an established invasive species focuses on mitigating impacts on assets, as eradication may not be feasible.

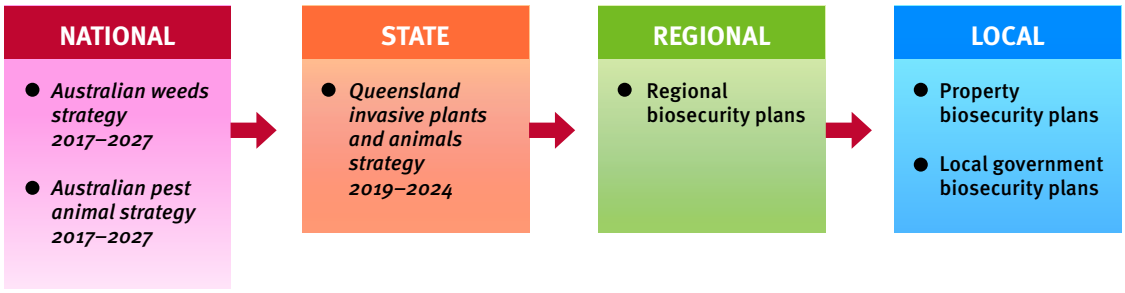
The roles and responsibilities of each stakeholder change along the invasion curve, in line with the actions needed and who is best placed to carry them out. Given the higher costs and greater return on investment at the beginning of the invasion curve, governments generally have more involvement in

the earlier stages of management—prevention, eradication and, to an extent, containment. Protection of assets (whether public or private) from the impacts of an established invasive species is generally better managed locally by the owners and managers of those assets, or in some cases by local community groups.

Decisions on the protection of private assets (such as land, crops and livestock) are often best made at a property, enterprise or local level. Actions are most effective when prioritised through risk management.

Government's role in the later stages of the invasion curve generally includes sharing some of the responsibility for on-ground management, as well as support for research, extension, facilitation, planning, policy and regulation.

The management focus for any particular invasive species may vary across spatial scales. For example, the management strategy for a certain invasive plant may be asset protection at the state level, but for some regions it may be containment and within that region, at a local level, it may be eradication. Therefore, the management of invasive plants and animals requires planning and coordination at national, state, regional, local and even property levels.



Koster's curse (*Clidemia hirta*) is a highly invasive shrub that smothers pasture, plantations and native vegetation

The *Biosecurity Act 2014*

To cope with the threat posed by invasive plants and animals, Queensland needs flexible and responsive laws. The *Biosecurity Act 2014* (the Act) provides this by establishing a framework for minimising biosecurity risks and facilitating the timely and effective response to biosecurity events and impacts.

The Act imposes a general biosecurity obligation on each person to manage biosecurity risks in their control and prevent biosecurity events from occurring. Everyone must take all reasonable and practical measures to prevent or minimise biosecurity risks, such as those presented by invasive plants and animals.

Risk-based decision-making is included in the Act. This means that an appropriate level of response can be actioned to address a potential risk.

In addition, the Act includes the principle that a lack of full scientific certainty will not be used as a reason to postpone preventative action or to delay response to a biosecurity risk.

Water hyacinth (*Eichhornia crassipes*) is one of the world's worst aquatic weeds; it chokes wetlands and waterways

Management responsibilities

The management of invasive plants and animals is the shared responsibility of land managers, industry, the community and all levels of government. The primary responsibility rests with those who deal with biosecurity matter—they must reduce the risks that their activities create. A nil-tenure approach that engages all stakeholders is best practice, particularly for mobile species.

The following table provides indicative responsibilities of various stakeholders. However, responsibilities may vary in certain circumstances, and many stakeholders work beyond those outlined.

	Responsibilities			
Stakeholder	**On-ground**	**Policy**	**Engagement**	**Compliance**
Australian Government	• Border protection • Emergency response coordination	• National framework • National legislation, policies and programs		
Biosecurity Queensland	• State research capability • State responses • State component of national responses	• Legislation • Strategies • Policy • Programs • Reporting	• Awareness • Extension and education programs • Facilitation of collaborative management	• Biosecurity officers and compliance officers (authorised officers and persons)
Other state agencies	• Management of invasive plants and animals on state lands • Assistance with identification of response requirements	Complementary: • strategies • policy • programs • reporting	• Awareness • Extension and education programs • Facilitation of collaborative management	
Local government	• Management of local government land • Community management plans	• Biosecurity plans • Management programs	• NRM, community and land manager engagement	• Authorised persons
Natural resource management (NRM) groups	• Facilitation of management for regional priorities	• Facilitation of regional and local strategies by contributing to regional planning processes	• Community awareness • Technical advice • Incentives • Land manager engagement • Contribution to best management practice	
Land managers	• Management activities • Best management practice • General biosecurity obligations • Good neighbour policy	• Property biosecurity plans • Farm biosecurity plans		• Implementation of quality assurance for commodities

(continued)

	Responsibilities			
Stakeholder	**On-ground**	**Policy**	**Engagement**	**Compliance**
Industry	• Facilitation of management for local priorities • Funding for research	• Assistance in shaping relevant policies	• Land manager engagement • Leadership of best management practice	
Researchers	• Invasive plant and animal research and development	• Assistance in shaping relevant policies	• Training and education in best management practice	
Community groups/ environmental sector	• Management activities and surveillance	• Assistance in shaping relevant policies	• Land manager engagement and community awareness	
Service providers	• Management activities and advice	• Assistance in shaping relevant policies	• Land manager engagement	

Placing an infected cladode on drooping tree pear (*Opuntia monacantha*)

Guiding principles

This strategy embodies seven fundamental principles that underpin effective management of invasive plants and animals. They provide a common basis for all of Queensland.

These principles are most effective when they are used by all partners in the biosecurity system to guide planning and investment, and when they are incorporated into strategies, plans and actions across all management levels.

1. Integration, collaboration and coordination

Managing invasive species is an integral part of managing natural resources, biodiversity in our environment, and agricultural systems. It is best when integrated at every level by land managers, the community, industry and government.

To achieve a collaborative and coordinated approach to management, we need to establish long-term consultation and partnership arrangements, including the consistent reporting and sharing of agreed datasets between land managers, local communities, industry groups, NRM groups, and federal, state and local governments.

2. Strategic risk-based planning

Planning for management of invasive species is most effective when guided by the latest research and best practice, and when focused on risk-based decisions and greatest return on investment. This will ensure that resources target the priorities identified at local, regional, state and national levels.

3. Shared responsibility and commitment

To effectively manage invasive species, we need shared responsibility and long-term commitment by everyone in the biosecurity network, including land managers, the community, industry groups and government.

Everybody should play their part to minimise the impacts of invasive species on the economy, the environment, health and social amenity.

Those who create biosecurity risks and those who benefit from management activities will be called upon to contribute to the costs.

4. Capability building through education and awareness

Public education and awareness campaigns on invasive species will increase the community's capability and willingness to participate in management and control.

For long-term best practice management, we need ongoing, targeted capability and capacity building within industry, NRM groups, and local, state and federal governments.

5. Prevention and early intervention

Risk-based prevention and early intervention is generally the most cost-effective approach for managing invasive species. This approach can be assisted by:

- developing and implementing early detection, diagnostics and monitoring systems
- preventing spread, especially human-assisted spread.

6. Best practice and research

Management is most effective when following evidence-based practices that protect the environment and the productive capacity of natural resources while minimising impacts on the community.

Ongoing research and extension programs will inform the development of best practice management and policies.

7. Monitoring and evaluation

We need regular monitoring and evaluation of control activities, including establishment of baselines and reporting on agreed shared datasets against baselines, to make evidence-based decisions and improve management practices.

The red-eared slider turtle (*Trachemys scripta elegans*) is very aggressive and outcompetes native species for food and space

Themes

Six key themes, with related objectives and strategic actions (see page 16), will help to achieve the vision and provide the means for undertaking the mission.

THEME 1 Prevention and preparedness

Prevention and early intervention is generally the most cost-effective management strategy. It is usually impossible to eradicate an established invasive species—impacts and/or management costs for these species often become perpetual.

Government generally has a greater involvement in the earlier stages of prevention and eradication than in later stages of management. However, everybody has a role in preventing the introduction and spread of invasive species.

An invasive species may present different levels of risk and hazard in different regions and productive systems. We need to determine these levels before deciding on priorities for prevention and management.

Preventing the spread of current invasive species will greatly reduce the risk of further negative impacts.

THEME 2 Monitoring and assessment

We need reliable data from monitoring to ensure that invasive species are managed holistically and for the long term. This data will inform progress and investment.

To control invasive species, we need a balance between prevention, surveillance and preparedness.

An increasing amount of information is available on the distribution, abundance and impacts of invasive species. However, this data could be better organised and analysed through existing and new technologies, leading to improved decision-making.

THEME 3 Awareness and education

Effective management of an invasive species relies on broad stakeholder knowledge of the problem and the management issues. However, people are often not aware of the impacts that invasive species have on the environment or primary production, or that their own actions may be contributing to a problem.

In fact, many such problems are increased through lack of community knowledge. For example, people may not realise that they assist the spread of invasive species if they allow domestic dogs to breed with wild dogs, release domestic deer or unintentionally move seeds of invasive plants (via contaminated soil or equipment).

The level of knowledge on invasive species is increasing, but more targeted public education and a higher public profile are needed. Different stakeholders need different information and support to raise their awareness of problems and increase their willingness to help with management.

Increased industry support for management of invasive species is one way of increasing awareness of land managers.

Overall community awareness may improve when stakeholders have accessible, science-based information on invasive species, their characteristics, their impacts and control actions. When people have this knowledge, they may also be enabled to take ownership of the issue with increased confidence and be more likely to act.

THEME 4 Effective management systems

It is widely accepted that, for invasive species, integrated management systems are the most effective. That is, best practice for effective control often involves multiple control methods, and successful long-term management relies on cooperation with neighbours and the coordination of control activities. Therefore, to ensure the best possible outcomes, we will call upon all stakeholders to advocate and adopt best practice for all management activities.

Legislation on the management of invasive species is backed by suitable enforcement measures, but enforcement is best used when other approaches have failed.

THEME 5

Strategic planning and management

Through strategic planning, we can prioritise actions and ensure that resources are used for maximum effect.

However, a strategic approach can only achieve common goals and priorities if there is effective communication and cooperation between all parties within the system. Biosecurity planning offers a 'partnership' mechanism to achieve this level of coordination and efficiency.

The Biosecurity Act facilitates a risk-based approach to the management of invasive species; this approach promotes the efficient use of resources.

THEME 6

Commitment, roles and responsibilities

To successfully control invasive species in the long term, we need clearly defined and accepted roles and responsibilities. There is often some confusion within the community about the exact responsibilities of land managers, local governments and the state government in the management of invasive species—this confusion must be addressed.

When planning and implementing management programs, stakeholders should recognise each other's capacity to deliver the desired outcomes. The broad scope and nature of problems demands a long-term commitment by all stakeholders; they need to recognise the effort, time and cost required for effective management.

Local government planning is crucial to the success of invasive species management and provides an opportunity to foster community commitment to roles and responsibilities. NRM groups facilitate planning and management at a regional level, while state government agencies have a responsibility to manage invasive species on lands and water bodies under their control. Community and local government planning must include all stakeholders (such as managers of state land) early in the process.

Objectives and strategic actions

Vision Invasive plants and animals are cooperatively managed to reduce their impacts on the environment, the economy, human health and social amenity as it relates to the community

Prevention and preparedness	Monitoring and assessment	Awareness and education
Objectives		
Prevent the establishment and spread of invasive plants and animals	**Standardise information on invasive plants and animals to form the basis for effective decision-making**	**Increase the number of stakeholders who understand their role in, and best practice of, the management of invasive plants and animals**
Strategic actions		
1.1 Cooperate with all Australian states and territories and the federal government to develop consistent, risk-based policies to prevent the introduction of potentially invasive plants and animals	2.1 Use standardised protocols for data collection to integrate invasive plant and animal monitoring systems from multiple sources and jurisdictions, including citizen science	3.1 Publicise and provide information on invasive plants and animals and the general biosecurity obligation to all relevant stakeholders and the wider community
1.2 Enforce legislative provisions and implement compliance strategies for high-priority potentially invasive plants and animals	2.2 Develop and establish monitoring and reporting programs for all significant invasive plant and animal management activities	3.2 Improve communication networks at all levels to encourage best practice and discourage actions that contribute to or maintain invasive plant and animal impacts
1.3 Contribute to the development of national invasive plant and animal response plans, including agreements on cost-sharing for new incursions	2.3 Quantify the impacts of significant invasive plants and animals through research programs to determine acceptable levels of impact and develop strategies to mitigate risk	3.3 Review the Australian Qualification Framework to promote and facilitate new competencies to meet Queensland's future needs
1.4 Encourage industry-driven approaches (such as standard operating procedures and quality assurance advance agreements between government and industry) to improve prevention, eradication and control	2.4 Undertake regular risk reviews to update priority species	3.4 Promote and facilitate high-quality training in the management of invasive plants and animals
1.5 Encourage community-driven approaches to improve eradication and control methods		
1.6 Develop and maintain biosecurity emergency preparedness based on quality information, training and administration systems		
1.7 Adopt and implement risk-based eradication, mitigation and control plans for specific invasive plants and animals		

Mission To direct and facilitate strategic and targeted actions to reduce the impacts of invasive species

Effective management systems	Strategic planning and management	Commitment, roles and responsibilities
Objectives		
Develop and implement integrated practices for managing and minimising the impacts of invasive plants and animals	**Develop risk-based strategic directions that maximise stakeholder responsibility in managing invasive plants and animals**	**Gain commitment from all land managers, industries, communities and governments to a coordinated approach to managing invasive plants and animals**
Strategic actions		
4.1 Develop and deliver best practice approaches for the management of invasive plants and animals	5.1 Develop local government area biosecurity plans that are supported by the community, the state government, land managers and NRM groups	6.1 Develop the knowledge, capacity and commitment of key stakeholders so that they can play an active and constructive role in the management of invasive plants and animals
4.2 Develop control programs that include input from land managers and are consistent with sustainable management practices	5.2 Develop biosecurity plans for state-controlled lands that complement local government plans	6.2 Encourage all land managers, including government, to use a nil-tenure approach to the management of invasive plants and animals
4.3 Enhance control techniques through continued research, development and extension that develops and informs best practice management	5.3 Promote sharing of resources, expertise and knowledge to foster effective detection and response processes	6.3 Source alternative investment in projects on the management of invasive plants and animals
4.4 Establish achievable enforcement strategies based on levels of risk	5.4 Foster a long-term focus for resources and research, development and extension activities	6.4 Promote the economic and environmental benefits of managing invasive plants and animals to encourage co-investment
4.5 Strengthen research capacity through adequate resourcing and collaboration		
4.6 Foster the use of innovative technology to provide enhanced biosecurity outcomes		

Glossary

asset	something with environmental, social or economic value, whether publicly or privately owned, that invasive plants or animals may directly or indirectly affect
asset protection	action taken to mitigate the impacts of an invasive species on specified assets in a predefined area (e.g. indirect protection such as exclusion fencing for rabbits, wild dogs or foxes); not necessarily direct control, reduction or destruction of the species
biosecurity matter	**1** a living thing other than a human or part of a human **2** a pathogenic agent that can cause disease in a living thing other than a human, or in a human by transmission of the pathogenic agent from an animal to a human **3** a disease **4** a contaminant
biosecurity risk	a risk of any adverse effect on the environment, the economy, human health or social amenity caused or likely to be caused by biosecurity matter, by dealing with biosecurity matter or a carrier, or by carrying out an activity relating to biosecurity matter or a carrier
carrier	any animal or plant (or part of an animal or plant) or any other thing—whether dead, alive, or inanimate—that is capable of moving biosecurity matter attached to or contained in the animal, plant or other thing
containment	action taken to prevent the spread of an invasive species beyond a predefined area
eradication	the removal of all individuals of an invasive species from a defined area
established invasive species	an invasive plant or animal that is perpetuated, for the foreseeable future, within an area where it is not feasible (either technically or financially) to eradicate it
general biosecurity obligation	a legal obligation requiring a person who deals with biosecurity matter or a carrier, or who carries out an activity, to take all reasonable and practical measures to prevent or minimise biosecurity risks associated with that biosecurity matter or activity
invasive animal	an animal, including an invertebrate pest, that has or may have an adverse impact on the environment, the economy, human health or social amenity
invasive plant	a plant that requires some form of action to reduce its negative effects on the environment, the economy, human health or social amenity
land manager	an individual, company, organisation or government that owns, leases or manages private, commercial or government land
natural resource management (NRM) group	an organisation that acts as a regional delivery agent (under the regional stream of the National Landcare Program and the Queensland Regional Natural Resource Management Investment Program) and focuses on on-ground activities that protect, improve and restore waterways and rangelands by managing invasive plants and animals, and improving soil, vegetation and water quality at a river-catchment or other landscape level
nil-tenure approach	an approach in which a range of control methods are applied across all tenures by all stakeholders at a 'landscape' (rather than 'property') level in a cooperative and coordinated manner
predation	the killing of one animal (prey) by another animal (predator) for food
prevention	actions such as pre-border risk assessments and quarantine that minimise the risk of a species entering an area
risk management	the process of identifying risks and selecting and implementing measures to reduce levels of risk

Appendix:
Alignment with other strategies

This strategy promotes actions that will complement those arising from the following documents.

Queensland biosecurity strategy: our next five years 2018–2023

The biosecurity strategy outlines six themes for management within the Queensland biosecurity network:

1. collaborative governance and leadership
2. every Queenslander plays their part
3. empowered to act
4. bright ideas and better ways
5. valuing and building on our investments
6. better intelligence systems.

Australian pest animal strategy 2017–2027

The approach in this strategy embodies eight principles that underpin effective pest animal management:

1. Prevention and early intervention to avoid the establishment of new pest animal species is generally more cost-effective than ongoing management of established populations.
2. Pest animal management is a shared responsibility between landholders, community, industry and government.
3. Management of mobile pest animals requires a coordinated approach across a range of scales and land tenures.
4. Management of established pest animals should focus on the protection of priority assets (for example, a lambing paddock or a threatened ecological community) but also usually requires a 'buffer' management area around the asset to account for pest animal mobility.
5. Pest animal management should be based on actual rather than perceived impacts and should be supported by monitoring to measure whether impact reduction targets are being achieved.
6. Best practice animal management balances efficacy, target specificity, safety, humaneness, community perceptions, efficiency, logistics and emergency needs.
7. Best practice pest animal management integrates a range of control techniques (including commercial use where appropriate), considers interactions between species (such as rabbits and foxes) and accounts for seasonal conditions (for example, to take advantage of pest animal congregations during drought) and animal welfare.
8. The cost of pest animal management should be borne by those who create the risk and those who benefit from its management. Governments may co-invest where there is a net public benefit from any such intervention.

Australian weeds strategy 2017–2027

This strategy promotes seven principles that underpin effective weed management:

1. Effective weed management is a responsibility shared between landholders, community, industry and government.
2. Evidence-based decision-making should underpin the approach to weeds.
3. Risk-based prevention and early intervention is generally the most cost-effective approach for managing weeds.
4. Prioritisation of weed management must be informed by a risk-based approach, considering feasibility, likelihood of success and impact.
5. Coordination amongst landholders, community, industry and government is necessary to manage weeds at a landscape scale.
6. Sustaining capability and capacity across landholders, community, industry and government is fundamental to effective weed management.
7. Individuals, organisations and industry groups that create risks that may result in a weed entering, emerging, establishing or spreading in Australia have a role in minimising the impacts and contributing to the costs of management.

Priorities for Australia's biosecurity system: an independent review of the capacity of the national biosecurity system and its underpinning intergovernmental agreement

In 2017, this review of the Intergovernmental Agreement on Biosecurity (IGAB) was finalised. A total of 42 recommendations were made by the final report.

Queensland supports or provides support-in-principle for the following 40 recommendations.

1 IGAB2 should include a core commitment by jurisdictions to ongoing stakeholder communication and engagement, building on existing partnerships, with activities scrutinised as part of jurisdictional evaluations under Recommendation 22.

2 The National Biosecurity Committee (NBC) and the Industry and Community Biosecurity Committee should, through an open, transparent and collaborative process, lead national consultation on a draft National Biosecurity Statement ... finalised and launched within eighteen months of the IGAB review report.

3 The Primary Industries Technical Market Access and Trade Development Task Group should enhance engagement with industry to ensure that Australia's market access strategies are aligned appropriately through an agreed priority-setting process and that the degree of transparency and communication is carefully weighed against its level of risk to trade activities.

4 The Agriculture Senior Officials Committee (AGSOC), in conjunction with the Primary Industries Technical Market Access and Trade Development Task Group, should review the total effort and costs associated with demonstrating area freedom by jurisdictions and the value of that trade. The review should establish whether public investment is aligned with IGAB investment principles and the National Framework for Cost Sharing Biosecurity Activities (Recommendation 27).

5 IGAB2 should facilitate greater consideration by governments of market access priorities and outcomes within the national biosecurity system:

- Biosecurity surveillance activities should include pests and diseases and common pathways that pose the greatest threat to our export markets and tourism.
- IGAB2 should clarify the roles and responsibilities of the parties with regard to international and domestic market access, including proof of area freedom.

6 Jurisdictions should develop a nationally consistent system for the allocation and use of property identification codes (PICs) across the animal and major plant production sectors.

7 Jurisdictions should institute formal arrangements between agriculture and environment agencies, including through memoranda of understanding, to define the objectives of cooperation, leading and support roles, information flows, resources and deliverables.

8 Jurisdictions should make clearer commitments to environmental biosecurity.

9 The Australian Government should establish the senior, expert position of Chief Community and Environmental Biosecurity Officer within the environment department. A far less preferred alternative is to house the position in the agriculture department.

10 The NBC should establish a new Community and Environmental Biosecurity Committee (CEBC) to support the role of the Chief Community and Environmental Biosecurity Officer. The CEBC should comprise government and external community and environmental biosecurity experts and representatives from both the animal and plant sectoral committees of the NBC. The role of the CEBC should be reviewed following its work to prioritise national biosecurity risks impacting on the environment and social amenity (Recommendation 11).

11 The NBC should adopt a systematic approach to determine and plan for national priority pests and diseases:

- Three national priority lists—one each for animal, plant and environmental pests and diseases—should be developed in partnership with system participants.
- The three national lists should be completed by 2020.
- Thereafter, the NBC should lead reviews of the national priority lists at least every five years, reporting to AGSOC and the Agriculture Ministers' Forum (AGMIN).

12 The Australian Government should assign lead responsibility for driving and coordinating implementation of the National Environment and Community Biosecurity RD&E Strategy 2016–19 to the Australian Government environment department.

13 The NBC should authorise and drive development of an agreed set of National Biosecurity R&I Priorities, in consultation with key biosecurity R&I system participants, to guide national R&I investment.

14 To accelerate national system innovation the Australian Government should:

- establish a $25 million National Biosecurity Innovation Program to enable strategic co-investment in the system-level (including environmental) national priorities developed under Recommendation 13. The program should be funded initially for a five-year period from 2018–19 through the funding mechanisms in Chapter 8 and be administered by the Australian Government agriculture department
- increase the funding appropriation to the Rural Industries RDC by $2 million annually for a new cross-sectoral biosecurity R&I coordination and investment function for the RDCs. Cross-sectoral investments should be in line with the national cross-sectoral priorities developed under Recommendation 13
- require RDCs to invest in and report against the new National Biosecurity R&I Priorities through additional provisions in each RDC statutory funding agreement. Cross-sectoral biosecurity R&I will be coordinated by the Rural Industries RDC.

15 The Australian Government should require public reporting of all Commonwealth-funded biosecurity R&I investments (sectoral, cross-sectoral and system-wide) in accordance with agreed categories of funding activity developed under Recommendation 28.

16 IGAB2 must remain an agreement between the First Ministers of Australian, state and territory governments.

17 First Ministers should, within IGAB2, identify lead ministers and agencies for biosecurity (assumed to be agriculture or primary industries) and require supporting whole-of-government arrangements to be in place, including through memoranda of understanding.

18 First Ministers should formally authorise the NBC and articulate its terms of reference in IGAB2.

19 The NBC should include the CEO of the Australian Local Government Association.

20 The NBC should adopt a subcommittee structure that aligns with the revised national biosecurity system objectives and revised national reform priorities in IGAB2. All NBC sectoral committees should have a clear and transparent division of responsibilities for pest and disease risk. All NBC working groups and expert groups should be task-specific and, wherever possible, time-limited.

21 The NBC should increase its public profile and openness, including by establishing a standalone website … Key policy frameworks, agreements and reports of the NBC should be made public on the site.

22 AGSOC should establish and oversee an independent IGAB Evaluation Program to assess and report on implementation of each jurisdiction's core commitments under IGAB2. Each evaluation, or a comprehensive summary, should be made public following ministerial consideration.

23 The NBC should define the 'core' or 'normal' commitments of jurisdictions under IGAB2 for use in the independent IGAB Evaluation Program.

24 The NBC should report annually to AGMIN on its progress against priority reform areas outlined in Chapter 10. The NBC's annual report should be made public upon ministerial consideration.

25 AGSOC should establish, as a priority, an Industry and Community Biosecurity Committee as a forum for the NBC to discuss key national biosecurity policies and reforms.

26 The full membership of the NBC should meet annually with Animal Health Australia (AHA) and Plant Health Australia (PHA) members to discuss key national biosecurity policies and reforms.

27 The NBC and the Industry and Community Biosecurity Committee, in consultation with other key stakeholders, should review the National Framework for Cost Sharing Biosecurity Activities to enable its practical application and make it public.

28 The NBC, in collaboration with key industry and non-government partners, should agree uniform and fully inclusive categories of activity, including investment categories, for the national biosecurity system.

29 All governments should review their current biosecurity expenditure with a view to redirecting funding to areas that provide the greatest return on investment to producers, industry and the community.

30 The Risk Return Resource Allocation model should be extended to include all jurisdictions and their investments, with the Australian Government providing technical assistance to jurisdictions to build national capacity.

32 State and territory governments should agree a common biosecurity cost-recovery framework and review their biosecurity cost-recovery arrangements to ensure they are nationally consistent, appropriate and transparent.

33 All levels of government could help meet their budgetary challenges by reviewing biosecurity levies and rates/charges currently or potentially applying to biosecurity system participants. These should be commensurate with agreed national cost-sharing principles.

35 AHA and PHA should coordinate an industry stocktake of national biosecurity system investments and make the results public.

36 The Australian Government should enact legislation to put in place a universal emergency response levy, with its activation for any particular industry group to be at the discretion of the Minister for Agriculture. The legislation should provide the Minister with discretion to set a positive levy rate to build an emergency response fund for an industry in advance of an incursion. The legislation should require that, for industries covered by an existing emergency response deed, the Minister is to comply with the requirements of the relevant deed in making any decisions.

37 The emergency response deeds for aquatic animals and exotic production weeds should be finalised within eighteen months of the IGAB review report.

38 The Productivity Commission should, commencing in 2018, undertake a comparative Report of Government Biosecurity Services (ROGBS) on a five-yearly basis. The report should draw on the existing framework provided by the Report of Government Services (Emergency Management).

39 Data and knowledge sharing should be a core commitment of jurisdictions under IGAB2. Minimum standards and specifications should be agreed for datasets.

40 Within the period covered by IGAB2, the Australian Government agriculture department should lead the development of a common information architecture for the national biosecurity system (including data-sharing protocols, standards and authority protocols) for all jurisdictions to share and access biosecurity data and information in the national interest.

41 The Australian Government should establish, within the agriculture department, a dedicated National Biosecurity Analytics and Intelligence Centre, to centralise, coordinate and provide advice to the NBC, AGSOC and AGMIN on biosecurity intelligence covering emerging risks and pathways and international and domestic pest and disease detections.

42 Jurisdictions should adopt the proposed new priority reform areas and associated work program for IGAB2 and amend the IGAB in line with the proposed revisions.

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