



PERFORMANCE AUDIT REPORT

4 July 2023

Managing invasive species

Report 1: 2023–24

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Mr J Kelly MP
Acting Speaker of the Legislative Assembly
Parliament House
BRISBANE QLD 4000

4 July 2023

This report is prepared under Part 3 Division 3 of the *Auditor-General Act 2009*.



Brendan Worrall
Auditor-General



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Acknowledgement

The Queensland Audit Office acknowledges the Traditional and Cultural Custodians of the lands, waters, and seas across Queensland. We pay our respects to Elders past, present, and emerging.

Report on a page

Invasive plants and animals (invasive species) affect the lives of all Queenslanders and are estimated to cost the Australian economy between \$5 and \$7 billion each year. Biosecurity Queensland is a business group of the Department of Agriculture and Fisheries. It leads Queensland's response to prevent and recover from pests and diseases threatening our agriculture, the environment, social amenity, and human health. It works with state and local government entities to manage invasive species. We found that although these entities are doing a lot to manage invasive species, Biosecurity Queensland needs to take greater leadership in its oversight and coordination role to reduce the impact of some species.

Reducing the impact of invasive species

Stronger leadership and effective strategy are needed to address key challenges

The Department of Agriculture and Fisheries' role, through Biosecurity Queensland, is to lead the biosecurity system. However, it has not clearly articulated how it will deliver on its crucial leadership role.

The *Queensland invasive plants and animals strategy 2019–2024* does not address some of the key challenges facing the biosecurity system, like increasing biosecurity risk and the limited capacity of some entities. It aspires to reduce the impact of all invasive species, without clearly defining which ones are a priority for entities with a role in managing invasive species.

Gaps in assessing and prioritising risk

There is significant variation in how state entities and local councils assess the risk of invasive species and prioritise their activities. Some have mature systems and processes and others do not have any. Despite its role as system leader, Biosecurity Queensland does not have a documented framework for assessing and prioritising the risk of invasive species. It does prioritise its effort, but it is difficult to determine whether its focus is always on the right species.

Responding to established invasive species

Biosecurity Queensland is taking a proactive approach to keep new invasive species out of Queensland and detect quickly those that do arrive. This aligns to the state strategy and is consistent with what industry experts recognise as the most cost-effective way to reduce their impact. However, it is not actively coordinating a state-wide approach across entities to manage established invasive species. For example, neither it nor the Department of Environment and Science have a state-wide plan to manage feral cats, despite their significant impact on our native wildlife. Biosecurity Queensland could better assist councils to more effectively use the powers of the *Biosecurity Act 2013* to regulate biosecurity risk.

Eradicating fire ants

Biosecurity Queensland is leading a national effort to eradicate fire ants from Queensland. Despite significant effort and funding, fire ants have now spread to over 700,000 hectares across South East Queensland. Initial delays in gaining funding approval across Commonwealth and state governments, and in commencing treatment, likely contributed to the spread. Expert views on whether eradication is still feasible vary, but the benefits of eradicating fire ants are apparent. Continuing to try to eradicate fire ants will take considerably more commitment and funding from the Commonwealth and state governments beyond what has already been provided. The significant commitment and funding necessitate that Biosecurity Queensland provides greater transparency about its progress as it seeks to mobilise governments and councils, the community, industries, and local businesses to do more in the fight against fire ants.

We made 8 recommendations to improve how entities assess, prioritise, and mitigate the risk of invasive species, design their strategies, use data to inform their decisions, and report their progress.



1. Audit conclusions

The risk of new species of invasive plants and animals arriving on our shores is a constant threat. Once here, they are destructive, costly, and difficult to eradicate or manage. Many state entities and local governments are doing a lot to manage invasive species and reduce their impact across our state. However, greater leadership, oversight, and coordination is needed to ensure they are more effective.

The Department of Agriculture and Fisheries has not clearly determined how it will effectively deliver on its biosecurity system leadership role. As a result, its leadership is not as strategic or as effective as it could be.

The *Queensland invasive plants and animals strategy 2019–2024* (the strategy) does not address some of the key challenges facing Queensland's biosecurity system. While it aspires to reduce the impact of all invasive species it does not recognise that some entities, particularly remote councils, have little capacity to do so. State and local government entities need to be realistic about what they can achieve, and this heightens the need for effective leadership, planning, risk assessment, prioritisation, and coordination.

These gaps in leadership and strategy inhibit Biosecurity Queensland's ability to identify and coordinate preventive and response priorities. It is unclear which invasive species are a priority (with some exceptions, such as fire ants), who decides the priorities, or how this is determined. Furthermore, Biosecurity Queensland does not have a complete view of its funding for all invasive species programs. Therefore, it cannot ensure its funding is effectively prioritised to achieve the best overall outcomes and provide value for money.

Detecting invasive species early and keeping them out of Queensland is the most effective way to reduce their impact. This has been a focus of Biosecurity Queensland and it has had some notable success. For some invasive species, Biosecurity Queensland is proactively using technology to detect and, where possible, eradicate them. However, Biosecurity Queensland also needs to take ownership for responding to established species (because they are widespread) in Queensland, including setting priorities and coordinating activities. In many cases, management of established species is largely left to local councils without adequate support or coordination. For example, there is no state-wide plan to manage feral cats, despite them destroying native wildlife and significantly contributing to the extinction of some ground-dwelling native birds and small- to medium-sized mammals.

Between 2001 and 2022, Commonwealth and state governments, under the National Red Imported Fire Ant Eradication Program, spent \$644 million to eradicate fire ants in Queensland. The infestation and spread of these ants are recognised as a significant state and national economic, health, and social threat. Efforts to initially eradicate and later manage these ants in China and the United States have been largely unsuccessful and resulted in significant cost and impacts. Biosecurity Queensland has worked hard to slow the spread and eradicate fire ants. To date, the eradication efforts have had isolated and limited success. Its efforts to slow the spread of the ants in Queensland has contributed to the rate of spread being significantly less than experienced in China and the USA, but still the infestation has continued to grow. Inadequate containment boundaries, as well as uncertainty and delays in funding, slowed treatment to control the spread and eradicate these ants.

Biosecurity Queensland has continued to learn and adapt its approach and is refocusing its strategy to manage and eradicate fire ants. It estimates an additional \$593 million (which includes Commonwealth and state governments funding) will be needed over 4 years from 2023–27 to implement its new strategy. Expert views vary on whether eradication can be achieved, but the economic, health, and social cost of not trying is high. If its new strategy is to be successful, at a minimum, Biosecurity Queensland must ensure that it establishes adequate containment boundaries, and it must effectively mobilise and coordinate the community, industries, local businesses, and councils to take a greater role in treating fire ants. Importantly, it must be more transparent about the rationale of its decisions and its progress, including performance metrics focused on outcomes, rather than outputs. If left to spread, fire ants could cost Queensland and the country billions of dollars. Decisions about what to do next should be guided by independent assessments grounded by scientific data and modelling.

2. Recommendations

Strengthening biosecurity system leadership and coordination

We recommend the Department of Agriculture and Fisheries:

1. strengthens its leadership and coordination role for the biosecurity system by setting strategic priorities, prioritising funding, and coordinating and overseeing activities across Queensland (Chapter 4)
2. reviews the *Biosecurity Act 2014* in consultation with stakeholders, to ensure it has the necessary clarity, authority, and responsibility to effectively and efficiently lead, coordinate, and enforce Queensland's biosecurity system (Chapter 4).

Designing an effective strategy

We recommend the Department of Agriculture and Fisheries:

3. reviews, updates and implements the *Queensland invasive plants and animals strategy 2019–2024* (Chapter 4). The strategy should:
 - identify the current and future challenges and priorities facing Queensland's biosecurity system and provide practical solutions to address these challenges
 - clearly define Biosecurity Queensland's role in relation to leading the biosecurity system, including coordinating and working with councils and stakeholders responsible for managing established invasive species
 - include indicators of success to measure performance across the biosecurity system – these measures should be cascaded to all key stakeholders including councils
 - better align to the Department of Environment and Science's *Biodiversity Conservation Strategy*.

Using data to inform decision making

We recommend that the Department of Agriculture and Fisheries:

4. improves the accuracy and level of detail it records about invasive species, their risk, and the activities it does to manage them (Chapter 4). This should include:
 - determining if the Biosecurity Online Resources and Information System has the required functionality
 - regularly auditing and reporting on the quality, completeness, and accuracy of data in the Biosecurity Online Resources and Information System
 - developing processes and measures for analysing its data for trends
 - using its data in making decisions about how best to manage invasive species.

Assessing and mitigating the risk of invasive species

We recommend the Department of Agriculture and Fisheries:

5. develops and implements a framework for assessing and mitigating the risk of new and established invasive species (Chapter 4). The framework should include:
 - an approach for regularly assessing, prioritising, and mitigating the risk of invasive species
 - protocols for communicating the risk of invasive species and any changes in approach to managing those risks to relevant stakeholders.



Regulating the risk of invasive species

We recommend the Department of Agriculture and Fisheries:

6. provides greater education and awareness to local councils about how they can use the powers of the *Biosecurity Act 2014* to regulate the risk of invasive species (Chapter 4). This should include:
 - educating local councils on when and why they should issue biosecurity orders
 - sharing better practice learnings about how local councils are regulating the risk of invasive species and the outcomes.

Responding to fire ants

We recommend the Department of Agriculture and Fisheries:

7. strengthens its approach for assessing the progress and outcomes of the National Fire Ant Eradication Program (Chapter 5). Decisions about what to do next should be guided by independent assessments grounded by scientific data and modelling. This should include periodically assessing whether it is technically feasible to eradicate fire ants from Queensland
8. reports its progress in eradicating fire ants from Queensland (Chapter 5) and the outcomes of its activities. This should include developing and reporting regularly on performance measures that show how well the program is achieving its outcomes, such as the size of the fire ant infestation over time.

Reference to comments

In accordance with s. 64 of the *Auditor-General Act 2009*, we provided a copy of this report to the Department of Agriculture and Fisheries, the Department of Environment and Science, and to all local councils. In reaching our conclusions, we considered their views and represented them to the extent we deemed relevant and warranted. Any formal responses from these entities are at [Appendix A](#).



3. Invasive species in Queensland

Invasive plants and animals can have devastating impacts on our economy, our environment, and our health. They spread serious diseases, kill our native plants and animals, cause agricultural loss, and affect our lifestyle. Scientists estimate that invasive plants and animals cost the Australian economy between \$5 and \$7 billion each year.

What makes something invasive?

Invasive species are generally any introduced plant or animal species that has an adverse economic, environmental, human health, or social impact. Invasive species may be introduced intentionally (such as the cane toad) or unintentionally (such as the red imported fire ant). However, even a native species can be included in the definition of invasive species. For example, native locust swarms can be considered invasive because they devastate crops and cause major agricultural damage. Once established, invasive species can be extremely difficult and costly to eradicate or manage.

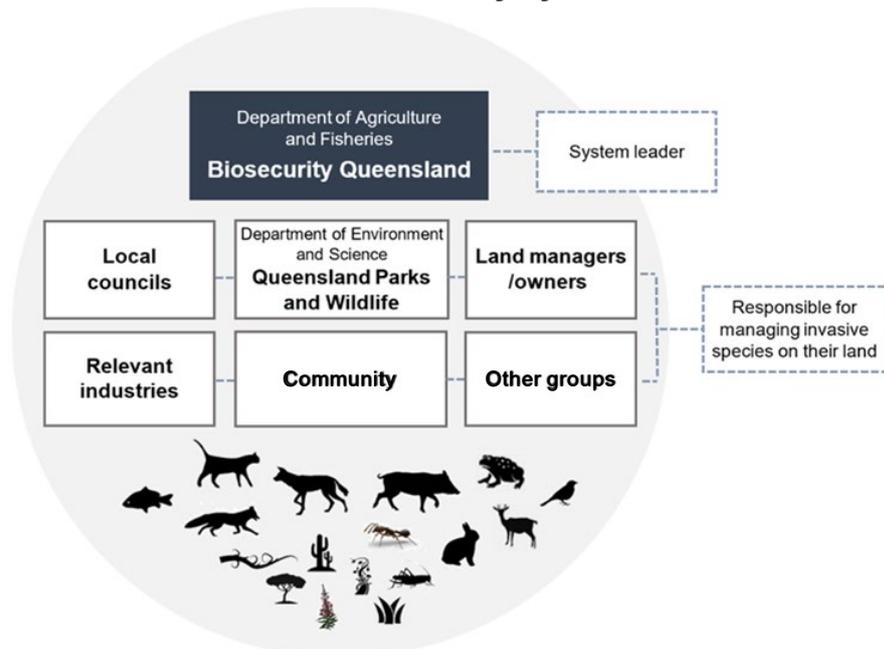
DEFINITION

The *Biosecurity Act 2014* (the Act) defines an invasive plant or animal as a species that has or is likely to have an adverse impact on a biosecurity consideration because of the introduction, spread, or increase in population size of the species in an area.

Who is responsible for managing invasive species?

Queensland's biosecurity system relies on many stakeholders working together effectively to eradicate or reduce the impact of invasive plants and animals. Figure 3A shows the key stakeholders in the system.

Figure 3A
Queensland's biosecurity system



Notes: Other groups include natural resource management groups, community, and environmental groups.

Source: Queensland Audit Office.



Under the Act, every person has a general biosecurity obligation to prevent or minimise biosecurity risk (such as invasive plants and animals) on their land.

Biosecurity Queensland is a business group in the Department of Agriculture and Fisheries, and is responsible for leading the biosecurity system and mitigating the risk of invasive plants and animals across the state.

Other public sector entities have a role in managing invasive species on land they are responsible for. For example, Queensland Parks and Wildlife (within the Department of Environment and Science) is responsible for managing invasive species in parks and forests across the state. The Department of Environment and Science is also responsible for protecting species that are at risk of extinction (threatened species). Councils are responsible for having a biosecurity plan and managing invasive species in their local government area.

Entities must effectively plan and coordinate their activities at a national, state, regional, and local level, to reduce the impact of invasive species. This is specifically important as borders and geographical boundaries have no relevance for species.

What did we audit?

In this audit, we assessed how effectively state and local government entities are managing invasive plants and animals. We did not examine how effectively entities manage biosecurity incidents for major disease outbreaks, such as foot and mouth disease.



4. Reducing the impact of invasive species

In Queensland, state and local governments, land managers, relevant industries, and the community all share responsibility for managing invasive species. Everyone has a responsibility. Land holders, whether they be government, industry, or the community, must act to prevent, eradicate, and control invasive species. The biosecurity system requires effective leadership and coordination, especially because invasive species spread across borders and geographical boundaries. This means that local narrowly focused initiatives are rarely likely to have long-term success in isolation.

Entities must regularly assess the risk of invasive species to determine which species are a priority and the most effective way to manage them. They must act quickly and collectively. Once an invasive species becomes established and widespread, like the cane toad, it becomes difficult or even impossible to eradicate. For this reason, prevention or early eradication is the most effective way to reduce their impact.

This chapter is about whether entities have effective leadership and strategy to reduce the impact of invasive species on our economy, environment, and our lifestyle. We also look at how entities prioritise their effort and how effectively they plan and coordinate their activities.

Does Queensland have effective leadership and strategy to reduce the impact of invasive species?

Leadership for the biosecurity system needs to be strengthened

Biosecurity Queensland's 2022–23 plan states that its purpose is to:

lead and promote a biosecurity system that protects Queensland's economy, environment, lifestyle, and human health.

However, neither the strategy, nor the *Biosecurity Act 2014* (the Act), state that Biosecurity Queensland has a leadership role. Given Biosecurity Queensland's role is to lead the system, it is important that both the strategy and the Act clearly define this, so stakeholders across the system understand its leadership role.

Biosecurity Queensland has established several committees to help lead Queensland's biosecurity system. These committees provide a valuable forum to share information and collaborate about approaches to preventing, eradicating, and containing invasive species. But the committees do not lead and direct effort across the system. Several stakeholders said there was a lack of leadership and coordination across the system.

The need for strong leadership and coordination is even more essential given entities within the biosecurity system have different responsibilities, priorities, capacity, and capability. For example, Biosecurity Queensland's primary focus is invasive species that have an economic impact, whereas the Department of Environment and Science focuses on those species that have the greatest environmental impact. Similarly, local councils have varying priorities based on their geographic location, the spread and impact of invasive species in their area, and the needs of their community.

While these varying responsibilities and priorities are at times complementary, they can also be competing. Especially considering the increasing risk of invasive species and the finite resources and funding to manage them. This means effective leadership, alignment of strategies, and coordinated planning is essential to avoid duplication and maximise outcomes. Biosecurity Queensland fulfilling this statewide leadership and coordination role should in no way diminish the biosecurity responsibilities and accountabilities of councils, landowners, and individuals.



Recommendation 1

We recommend the Department of Agriculture and Fisheries strengthens its leadership and coordination role for the biosecurity system by setting strategic priorities, prioritising funding, and coordinating and overseeing activities across Queensland.

Recommendation 2

We recommend the Department of Agriculture and Fisheries reviews the *Biosecurity Act 2014* in consultation with stakeholders, to ensure it has the necessary clarity, authority, and responsibility to effectively and efficiently lead, coordinate, and enforce Queensland's biosecurity system.

Strategy does not address key challenges

Queensland's biosecurity system faces significant challenges. Biosecurity risk is increasing, and entities are under pressure to do more with the resources they have. These are not new challenges. The *Queensland Biosecurity Capability Review* (September 2015) highlighted these problems.

Biosecurity Queensland, in collaboration with other stakeholders, developed and implemented the *Queensland invasive plants and animals strategy 2019–2024* (the strategy). The strategy includes key principles, such as the importance of strategic, risk-based planning. It also outlines the benefits of preventing and eradicating invasive species before they become established.

However, the strategy fails to identify, and does not address, some of the key challenges facing the biosecurity system, such as the capacity and capability of councils to manage invasive species. It does not include an approach to overcoming these challenges. It aims to reduce the impact of all invasive species, without clearly defining what entities should focus on. Councils and state entities need to carefully decide where to put their effort, given the resource constraints that many face.

Need to align strategies

The *Queensland invasive plants and animals strategy 2019–2024* acknowledges the environmental impacts of invasive species. However, it does not refer to, or align with, the Department of Environment and Science's *Biodiversity Conservation Strategy*, which was published after the Queensland invasive plants and animals strategy. The strategy does not identify which invasive plants and animals pose the most risk to threatened species.

Invasive species can have a significant impact on native species, including threatened species. In some coastal areas of Queensland, researchers estimate that feral pigs destroy approximately 90 per cent of turtle nests each year. This includes the nests of the endangered Loggerhead, Olive Ridley, Hawksbill, and Leatherback turtles. To reduce the impact of invasive plants and animals on native species, entities responsible for managing invasive species need to align their strategies and coordinate their activities.

Biosecurity Queensland and the Department of Environment and Science need to work together, and better align their existing and new strategies if they are to protect our native wildlife from invasive species.

Recommendation 3

We recommend the Department of Agriculture and Fisheries reviews, updates, and implements the *Queensland invasive plants and animals strategy 2019–2024*. The strategy should:

- identify the current and future challenges and priorities facing Queensland's biosecurity system and provide practical solutions to address these challenges
- clearly define Biosecurity Queensland's role in relation to leading the biosecurity system, including coordinating and working with councils and stakeholders responsible for managing established invasive species
- include indicators of success to measure performance across the biosecurity system – these measures should be cascaded to all key stakeholders including councils
- better align to the Department of Environment and Science's *Biodiversity Conservation Strategy*.

Need to measure and report progress

Performance across Queensland's biosecurity system

It is unclear whether entities are winning the fight against the invasive species that they are managing. They do not monitor and report on the outcomes of their activities across the biosecurity system. For example, entities do not regularly report how many invasive species they have successfully eradicated, how many they are trying to eradicate, and how many they have failed to eradicate. Nor do they report how much funding they spend on invasive species or the economic benefits.

The Queensland Invasive Plants and Animals Committee (QIPAC) is responsible for reporting annually on progress against the strategy. Since the Department of Agriculture and Fisheries established QIPAC in November 2018, it has finalised one report. The 2-page document provides some useful insights, but it does not report against the progress of the strategy. Nor does it state whether Queensland is reducing the impact of invasive species. QIPAC is drafting its next progress report.

Performance of individual programs

Some entities monitor the progress and outcomes of programs for individual invasive species and produce detailed reports. Biosecurity Queensland produces detailed reports about the performance of some of its individual programs. These reports highlight the work underway and the outcomes of that work. They can increase awareness about risk for other entities and inform their planning. Figure 4A is an example of the detailed reporting that Biosecurity Queensland performs for bitou bush.

Figure 4A
Case study 1: Performance reporting for individual invasive species

Eradicating bitou bush from Queensland

Bitou bush (*Chrysanthemoides monilifera*) is native to South Africa. It is an aggressive weed that spreads quickly, replacing native plants and destroying the habitat of native animals.

New South Wales' Department of Planning and Environment estimates that it has spread to 46 per cent of the NSW coastline. In contrast, only isolated plants are being detected along Queensland's coastline.

Biosecurity Queensland has sought to eradicate bitou bush since it was first detected in 1981. Although it has not yet eradicated the weed, the number of detections has decreased significantly. Since 2011–12, the number of bitou bush detected in Queensland has decreased from 158 to 46 in 2020–21.

Biosecurity Queensland reports annually on the outcomes of its bitou bush eradication project. Its 2020–21 annual report shows the number of areas it has inspected, and the number of weeds detected and treated. It includes maps of its treatment and surveillance activities and highlights the areas where it has eradicated bitou bush, such as Bribie Island. This information increases awareness about the risk and helps entities target their efforts.



Bitou bush (Chrysanthemoides monilifera). Photo supplied by the Department of Agriculture and Fisheries.

Source: Queensland Audit Office using information provided by the Department of Agriculture and Fisheries.

Measuring outputs and outcomes

Entities can improve their performance monitoring by ensuring they have specific performance indicators that are relevant, achievable, and measurable.

Some of the entities we audited use performance metrics that focus on outputs, rather than outcomes. For example, Biosecurity Queensland reports the number of biosecurity incidents responded to, rather than the outcome of the response. Similarly, the Department of Environment and Science measures the percentage of pest programs delivered but does not state how many programs should be delivered or the benefits or improvements they are achieving. These indicators are unlikely to help these entities measure the effectiveness of their activities and drive the improvements they are seeking.

Many councils also lack performance indicators to measure and improve their performance. We surveyed all councils and, of the 61 that responded, 27 (44 per cent) reported their biosecurity plans did not contain key performance indicators. This is a gap they need to address if they are to effectively measure their performance.

Using data to monitor and report performance

Biosecurity Queensland does not have a complete picture of the number or spread of invasive species that state and local government entities are trying to manage across the state. It is not accurately and consistently recording all invasive species it is managing in its Biosecurity Online Resources and Information System (BORIS) – which is the database it uses to record and manage invasive species information. Neither is it recording all activities it is undertaking to manage invasive species in BORIS.

Accurate and complete data can provide entities with rich insights. Equally, poor data can limit entities from understanding what they are doing well and what they can improve. Biosecurity Queensland cannot confidently measure and report its performance due to inaccurate and incomplete data in BORIS. Biosecurity Queensland's staff record information in BORIS inconsistently. Some record all surveillance activities; others only record those surveillance activities where they detect an invasive species.

Some Biosecurity Queensland staff reported that they could not easily track their surveillance activities, due to limitations with BORIS. They also manually upload the surveillance data that other agencies share.

Recommendation 4

We recommend the Department of Agriculture and Fisheries improves the accuracy and level of detail it records about invasive species, their risk, and the activities it does to manage them. This should include:

- determining if the Biosecurity Online Resources and Information System has the required functionality
- regularly auditing and reporting on the quality, completeness, and accuracy of data in the Biosecurity Online Resources and Information System
- developing processes and measures for analysing its data for trends
- using its data in making decisions about how best to manage invasive species.



Our previous report and recommendations on performance measures, roles and responsibilities, and reporting on outcomes

Six years ago, in *Biosecurity Queensland's management of agricultural pests and diseases* (Report 12: 2016–17), we recommended that the Department of Agriculture and Fisheries:

- continues to develop an appropriate number of specific, measurable, achievable, relevant, and timed key performance indicators for each of Biosecurity Queensland's key activities or initiatives. In doing so, it should plan how to collect and analyse data to monitor these key performance indicators; collaborate with industry and other stakeholders on the collection of data; and evaluate the success of key activities or initiatives in delivering the desired outcomes
- improves quarterly reporting processes by not only reporting on inputs and activities for key biosecurity initiatives, but also on risks and progress towards achieving objectives and outcomes to support strategic management decisions
- when it participates in pest and disease management strategies which share responsibilities with other entities, clearly determines its roles and responsibilities; the key performance indicators that will be used to assess its contribution to the strategy; and which entity is best placed to monitor performance of the strategy and evaluate it at appropriate intervals.

Our report *2021 status of Auditor-General's recommendations* (Report 4: 2021–22) captured the department's self-assessed progress in implementing these recommendations. The department reported that each recommendation had been fully implemented.

During this audit, however, we found these 3 recommendations from our previous report had been only partially implemented. While the department is developing key performance measures, we found an absence of specific, measurable, achievable, relevant, and time-based indicators across biosecurity activities. Also, while the strategy includes roles and responsibilities, there is a lack of coordination and regular monitoring of performance against objectives and outcomes.

Where entities report fully implementing our recommendations, we expect their actions to address the issue that we identified and to be operating effectively. There should not be a plan to address the issue or be inconsistently implemented across relevant activities.

Which invasive species get priority?

The lack of leadership across the system has resulted in a lack of clarity regarding the priorities for the state. Except for fire ants, it is unclear which invasive species in Queensland are a priority, or how this is determined and by whom.

Gaps in assessing and prioritising risk

Assessing risk regularly

Assessing risk regularly helps determine which invasive species are a priority. It is one of the objectives of the strategy.

Biosecurity Queensland does not have a documented framework, procedures, or guidelines for assessing the risk of invasive species. Nevertheless, it has performed detailed risk assessments for some species. In 2016 it assessed and published the risk of 83 invasive species, including their existing and potential spread, and impact. It has only updated one of the 83 risk assessments since 2016. Further to this, it has not published risk assessments for wild dogs and feral pigs, which are 2 species that have a significant impact on the economy and the environment. Failing to regularly assess the risk of invasive species inhibits Biosecurity Queensland's and its stakeholders' ability to make fully informed decisions and prioritise species programs and management.



Prioritising invasive species

Biosecurity Queensland’s policy on invasive plants and animals states that its priorities are high-risk species not established in Queensland or those that are established but can still be eradicated. The policy identifies 75 species as high risk, but it does not explain why it considers them high risk or rank them by priority. We found other entities, including some local councils, also did not clearly identify which invasive species were a priority. Entities are more likely to maximise their impact by clearly defining priorities.

There were, however, exceptions. Cairns Regional Council uses a documented framework to assess, prioritise, and plan its activities. It assesses the impact of each invasive species, highlights whether the species is a state or national priority, and outlines whether it can eradicate them. It ranks each species and prioritises those with the highest score. This provides a sound platform to ensure its decisions are consistent and transparent. Biosecurity Queensland and other councils could benefit from using this framework or a comparable framework. Figure 4B shows an excerpt from Cairns Regional Council’s risk matrix tool.

Figure 4B
Excerpt from Cairns Regional Council’s risk matrix tool

Common and species Name	Human Health	Social Amenity	Economy	Environment	Achievability	Local Impact	Declaration Status	National Priority	Priority Score
 Limnocharis, yellow burrhead (<i>Limnocharis flava</i>)	1	2	3	3	5.5	3	2.5	5	25
 Miconia tree (<i>Miconia calvescens</i>)	1	1	4	3	4.4	3	2.5	5	23.9
 Senegalia spp.	1	3	4	2	5.5	3	5	0	23.5
 Parthenium weed (<i>Parthenium hysterophorus</i>)	3	2	2	3	5.5	3	1.5	2.5	22.5

Note: Priority scores for impacts use a scale of 1 to 5, with 1 being the lowest impact and 5 the highest impact; Achievability uses a scale of 1.1 to 5.5; Local impact uses a scale of 3 to 5; Declaration status uses a scale of 1 to 2.5; and National priority uses a scale of 2.5 to 5.

Source: Cairns Regional Council’s Biosecurity Plan 2019–2024.

Prioritising resources based on risk

Knowing which invasive species to focus on, and where to invest limited Commonwealth and state funding, is vital. Much of the funding spent by councils on invasive species comes from grant funding.

Biosecurity Queensland does not know how much money state and local governments are spending on managing invasive species. Neither it, nor any other state entity, captures this information. As a result, it is impossible for the Queensland Government to know its total spending on invasive species.

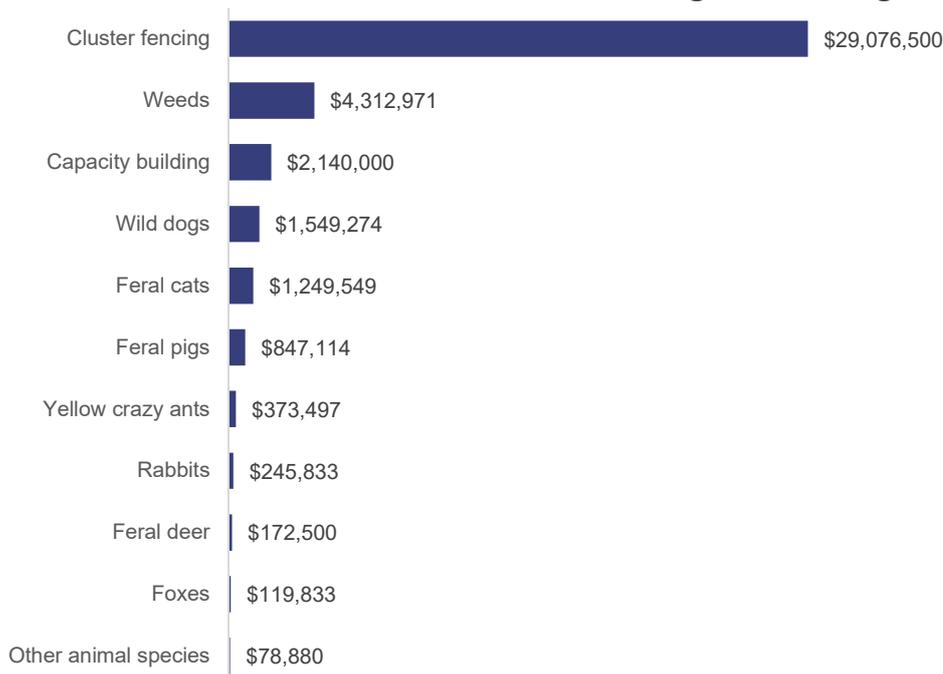
In 2020–21, Biosecurity Queensland spent \$27 million on managing invasive species. This included \$17.4 million on operations and program management, \$6.1 million on research, and \$3.6 million on policy and engagement. Biosecurity Queensland did not capture the funding it spent on individual invasive species, except that which it allocated under the Queensland Feral Pest Initiative.

We examined the grant funding allocated to individual invasive species under this initiative, which has been in place since 2016. Between 2016 and 2021, Biosecurity Queensland allocated over \$40 million in grant funding under this initiative. The Commonwealth contributed \$14 million and Biosecurity Queensland \$26 million.

Figure 4C shows where Biosecurity Queensland allocated grant funding between 2016 and 2021.



Figure 4C
Queensland Feral Pest Initiative grant funding



Note: Funding for capacity building included establishing working groups and education and awareness activities.

Source: Queensland Audit Office using data supplied by Biosecurity Queensland.

Since 2016, Biosecurity Queensland allocated more than 70 per cent of the grant funding to cluster fencing (fencing used to control wild dogs, which have a significant impact on agricultural production and native wildlife). Cluster fencing can also help manage other invasive species, such as feral pigs.

We found a lack of objective rationale for how Biosecurity Queensland allocated funding across the various species based on their impact, such as feral cats. We present a case study on feral cats later in this report.

Sharing information about biosecurity risk

Entities need to get better at sharing information about biosecurity risk. This is particularly important if the risk of a species changes, a program or its funding is ceasing, or an entity decides to change how it manages a species. For example, Cairns Regional Council said it was given little warning when Biosecurity Queensland decided to change its approach to siam weed, from eradication to containment, and the funding for the program was going to cease. When this occurred, the council did not have the capability to manage the weed. Other councils raised similar challenges in relation to other invasive species.

Biosecurity Queensland’s interactive dashboard maps the risk of invasive plants across the state. Councils and other stakeholders can see the current and historical spread of invasive plants and better understand their risk and prioritise effort. Entities can maximise the value of this information by collectively assessing and analysing it and using it to prioritise their effort. Expanding this mapping tool to include invasive animals would benefit stakeholders.

Recommendation 5

We recommend the Department of Agriculture and Fisheries develops and implements a framework for assessing and mitigating the risk of new and established invasive species. The framework should include:

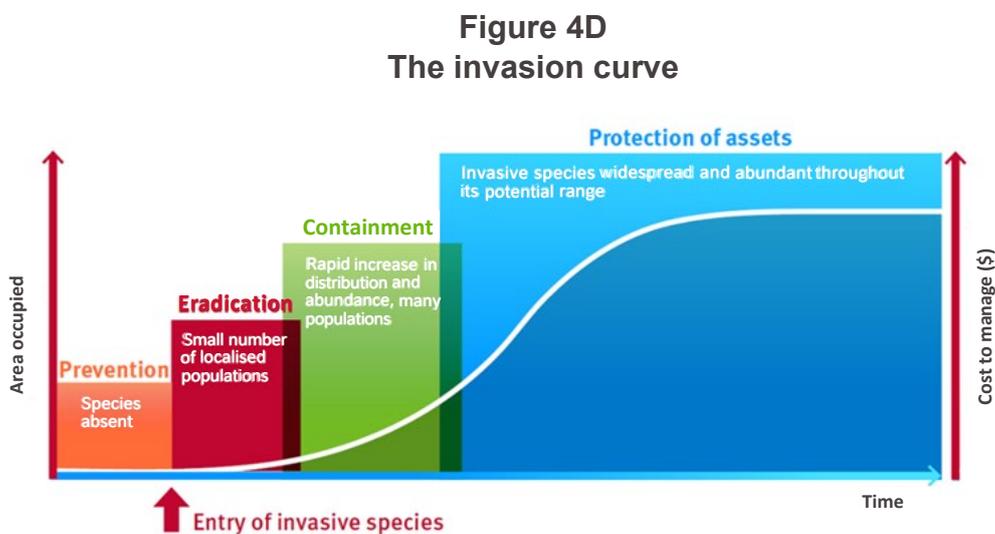
- an approach for regularly assessing, prioritising, and mitigating the risk of invasive species
- protocols for communicating the risk of invasive species and any changes in approach to managing those risks to relevant stakeholders.

What are entities doing to prevent and eradicate new invasive species?

Greater focus on preventing and eradicating invasive species

Keeping invasive species out of Queensland and detecting them early is the most effective way to reduce their impact. Biosecurity Queensland is taking a proactive approach to prevent and, where possible, eradicate new invasive species (those not established in Queensland). This aligns to the state strategy and is consistent with what industry experts recognise as the most cost-effective way to manage invasive species.

Figure 4D shows the key stages of managing invasive species and highlights the economic benefits of preventing and eradicating invasive species.



Source: Queensland invasive plants and animals strategy 2019–2024 with slight modification by QAO.

As part of its planning in 2021, Biosecurity Queensland identified several invasive species that it could prevent or quickly eradicate, including Asian black-spined toads and red-eared slider turtles. Both species have the potential to have a significant economic, environmental, and social impact.

Biosecurity Queensland’s south region is actively using an application to automatically search platforms, like eBay, to identify the sale of invasive plants and animals, which can significantly impact the environment and agriculture. Between July 2017 and July 2022, it seized over 2,900 invasive cacti, such as prickly pear, by monitoring the internet and other surveillance techniques.

How are entities responding to established invasive species?

Responding to established invasive species

Biosecurity Queensland provides limited leadership for managing established invasive species in Queensland. Thus, some species are having a greater impact on our environment and the economy than they need to.

Biosecurity Queensland staff are unclear about its role. A common view among staff we spoke with was that it is only responsible for new invasive species and that councils are responsible for established species. This view is not consistent with Biosecurity Queensland’s 2022–23 plan.

Under the Act, councils are responsible for managing established invasive species on their land. However, Biosecurity Queensland, as system leader, also has a critical role to play in relation to established species, such as:

- setting strategic priorities
- prioritising funding
- assessing their risk
- undertaking research
- helping coordinate and oversee activities.

State and local government entities must carefully consider each established species and decide collectively what, if any, action they should take.

For some established species, like the feral cat, there is no statewide approach and entities do not effectively coordinate their activities. Thirty-four per cent (21) of the 61 councils that responded to our survey reported low to very low levels of coordination and collaboration with the state government in managing invasive species.

Managing feral cats

Feral cats pose a significant impact on biodiversity, particularly regarding native species. Scientists estimate there are between 2.1 and 6.3 million feral cats in Australia. The Commonwealth Scientific and Industrial Research Organisation estimates that feral cats kill 1.8 billion Australian animals (reptiles, frogs, birds, and mammals) every year, many of which are listed as vulnerable or threatened species. Further detail on the impact on threatened species can be found in our report *Protecting our threatened animals and plants* (Report 9: 2022–23).

Despite this, the Queensland Government has no strategy to manage feral cats across the state. To varying degrees, entities do what they can to manage their risks, but do not coordinate and prioritise their efforts. This limits their ability to reduce the impact of invasive species on our native wildlife.

Some entities, like the Department of Environment and Science, are taking a more proactive approach to managing feral cats. Figure 4E is a case study about the work it is doing in 2 national parks to manage the risk of feral cats.

Figure 4E
Case study 2

Managing feral cats



Feral cat (Felis catus) in outback Queensland, Australia. Adobe Stock.

The Department of Environment and Science identified the native wildlife in national parks across the state that are vulnerable to feral cats. It assessed the risk to these species and developed programs to protect them from feral cats.

For example, it identified that the greater bilby population in the Astrebla Downs National Park in Western Queensland was at risk. Since 2012, the department has killed approximately 3,000 feral cats. The population of greater bilbies seen in the park has increased from 4 in 2014 to 225 in 2020. Similarly, it identified that feral cats threatened the endangered bridled nail-tailed wallaby. Taunton National Park has the only known wild population of the bridled nail-tailed wallaby. The department commenced a baiting and shooting program to reduce the number of feral cats in the park.

Since 2007, the number of endangered wallabies has increased from approximately 70 to 1,265 animals in 2020. It is critical that councils neighbouring these national parks also take a proactive approach to managing the risk of feral cats, otherwise council efforts are likely to be less effective than they could be.

Source: Queensland Audit Office using information provided by the Department of Environment and Science.

Most councils have a biosecurity plan

Councils must have a biosecurity plan under the Act, and most do. Ninety per cent (69) of the 77 councils in Queensland have a published plan. The other 10 per cent (8) do not have a plan and are not meeting their responsibilities under the Act. Three of these councils have a draft plan and are in the process of finalising them. The lack of planning by some councils limits how effectively they can manage invasive species in their area.

We reviewed councils' plans and found they varied significantly in quality and completeness. Some councils do not document the invasive species in their area. Others do not assess the risk of species and prioritise their activities accordingly. For example, the red imported fire ant is a significant risk in South East Queensland. Four councils in South East Queensland do not list fire ants in their biosecurity plans. We discuss Queensland's response to fire ants in Chapter 5 of this report. Similarly, yellow crazy ants are a highly aggressive invasive ant. Townsville City Council identifies them as a critical priority in its biosecurity plan and is currently managing several infestations. However, other neighbouring councils do not list them as a risk in their plans.

We found that more than 23 per cent (16) of the 69 published plans have not been updated since 2017. This diminishes their value. A biosecurity plan needs to be a living document. Councils need to alter their approach as risks and priorities change and update their plan accordingly.

Biosecurity Queensland, in collaboration with the Local Government Association of Queensland, developed guidance material to help councils develop their biosecurity plans. It maintains a register of councils that have a plan, but it does not review and approve plans or provide feedback. It also does not try to ensure consistency and coordinate across council plans where appropriate. There is no strong impetus for councils to regularly review and update their plans.

Do entities issue biosecurity orders?

Entities are reluctant to issue biosecurity orders

As we have found in many past audits, good regulatory performance is about enforcing minimum prescribed standards – yet, in many cases, regulators are not enforcing these standards. We share insights about good regulatory practices in our better practice guide: *Insights for regulators*.

There are a range of tools that state and local government entities can use to regulate the risk of invasive species, including biosecurity orders. While in many cases education and information will be sufficient, there will nevertheless be circumstances where issuing orders will be needed.

Under the Act, Biosecurity Queensland and councils have the power to issue biosecurity orders where a person fails to meet their general biosecurity obligation. For example, they may issue an order that compels a person to remove an invasive plant from their property.

Biosecurity Queensland has issued 13 biosecurity orders for invasive species (excluding the 54 orders issued for fire ants between 2017–21) since the Act came into effect in 2014. Two of its 5 regions, central and south regions, have issued no biosecurity orders. We heard from several biosecurity officers that it was not their role to issue orders, even though they have the requisite powers.

Most councils are also reluctant to issue biosecurity orders. For example, one of the largest councils in South East Queensland has not issued any orders and another has only issued 2. Some councils preferred to educate landholders, rather than issue biosecurity orders.

In contrast, some councils, like Bundaberg Regional Council, are proactively regulating biosecurity risk in their area. It uses a range of compliance options, including issuing warning letters to individuals failing to meet their general biosecurity obligation. It recommends what the individual needs to do and, for those that fail to act, it issues a biosecurity order. Bundaberg Regional Council has issued more than 1,500 biosecurity orders since the Act was enacted.

Recommendation 6

We recommend the Department of Agriculture and Fisheries provides greater education and awareness to local councils about how they can use the powers of the *Biosecurity Act 2014* to regulate the risk of invasive species. This should include:

- educating local councils on when and why they should issue biosecurity orders
- sharing better practice learnings about how local councils are regulating the risk of invasive species and the outcomes.



5. Eradicating fire ants

Fire ants are one of the worst invasive species in the world. They originated from South America and have spread to many countries, including the United States, China, Taiwan, and Japan. Fire ants are highly aggressive, inflicting painful bites on people, pets, and livestock. The United States estimates that fire ants alone cost its economy about \$5–7 billion a year.

Fire ants can have devastating impacts on Queensland’s agriculture and tourism industries, and severely impact our lifestyle. Biosecurity Queensland is leading a national effort to eradicate fire ants from South East Queensland.

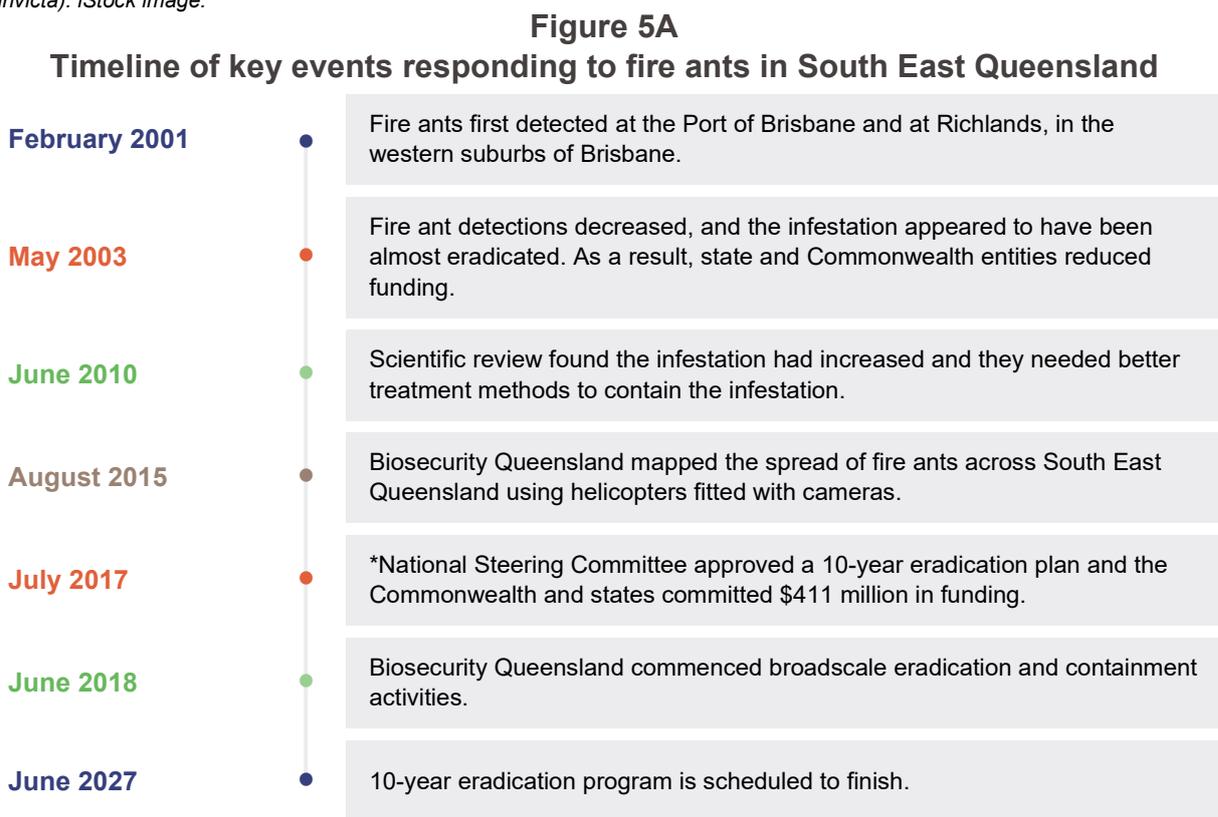
This chapter details our audit findings and conclusions about Queensland’s response to fire ants. We look at how Queensland is responding to fire ants, its progress in eradicating them, and its planned future action.

How is Queensland responding to fire ants?



Fire ant (*Solenopsis invicta*). iStock image.

Fire ants were first detected in South East Queensland in 2001. Figure 5A shows a timeline of events since fire ants were first detected.



Note: *The National Steering Committee was established in July 2017 to provide guidance and support to the program’s operational team on all aspects of the program’s delivery to ensure that it has the best chance of achieving its objectives.

Source: Queensland Audit Office using information provided by Biosecurity Queensland.

National Red Imported Fire Ant Eradication Program

The National Red Imported Fire Ant Eradication Program commenced in 2017. The program focuses on finding, containing, and eradicating fire ants from South East Queensland. Biosecurity Queensland is leading and coordinating this national program. It reports to a National Steering Committee that provides strategic oversight, leadership, and guidance. We did not audit the committee.

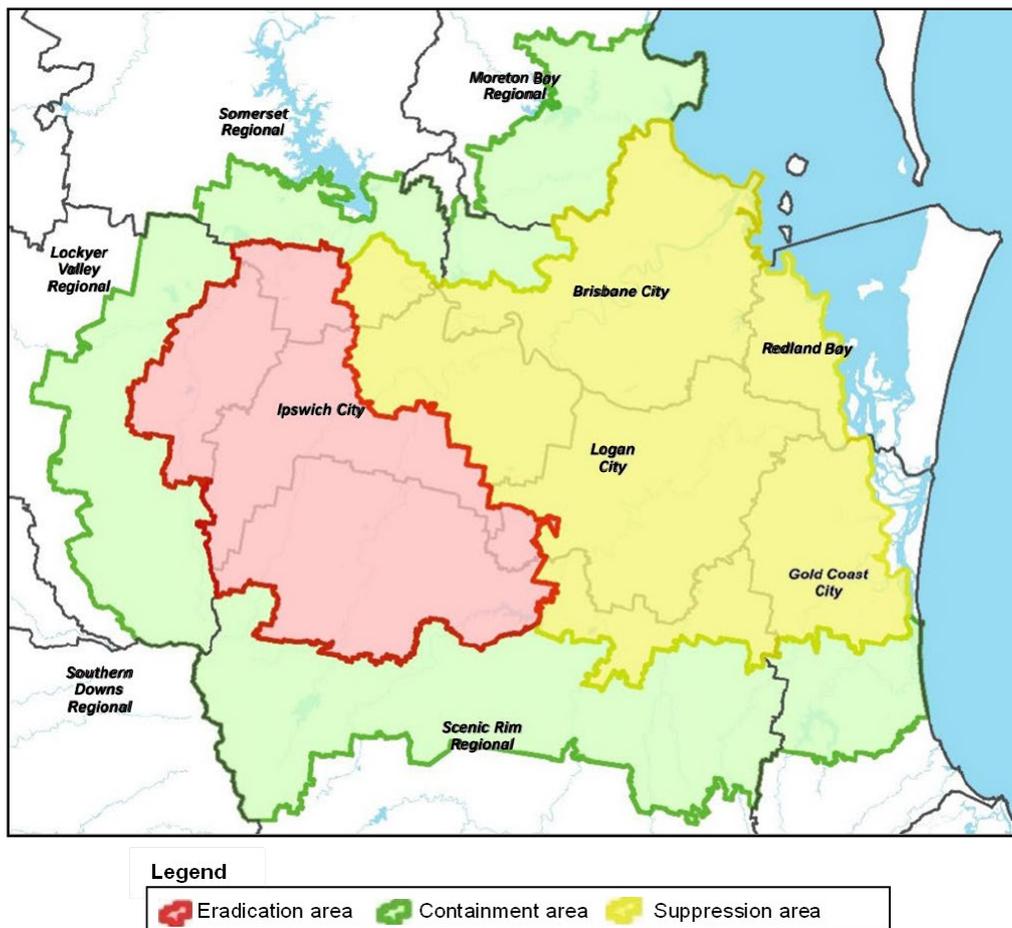
The Australian Government and all Australian states and territories share the cost of the program. The Commonwealth provides approximately 50 per cent of the funding, and states and territories the remaining 50 per cent. Since 2001, Biosecurity Queensland has spent \$644 million trying to eradicate fire ants from South East Queensland. It expects that it will exhaust all funding by June 2023.

The program is supported by a 10-year eradication plan. The plan outlines the priority areas and the key phases. The first 2 phases involve searching for and treating fire ants. The final phase involves searching treated sites and confirming if the area is free of fire ants.

Biosecurity Queensland has been working from west to east, prioritising eradication efforts in suburbs in Ipswich, Lockyer Valley, Scenic Rim, and Somerset. These areas presented the greatest risk because of their habitat, and the potential for fire ants to spread quickly and have a significant impact. At the same time, Biosecurity Queensland has sought to suppress fire ants in the eastern suburbs of Brisbane and contain them from moving further north or south.

Figure 5B shows the fire ant eradication, containment, and suppression areas for 2022–23.

Figure 5B
Fire ant eradication, containment, and suppression areas for 2022–23



Note: The eradication, containment, and suppression areas have changed over time as new fire ants have been detected.

Source: *The National Fire Ant Eradication Program website with slight modification by Queensland Audit Office.*

Can Queensland eradicate fire ants?

Eradicating any invasive species can be challenging, particularly invasive ant species like fire ants. Entities need to continue assessing their progress and decide if it remains both feasible and economical to do so. This is a requirement under *Australia's National Environmental Biosecurity Response Agreement*, which took effect in November 2021. To be eligible for Commonwealth funding, an eradication program must satisfy these requirements. The fire ant program commenced before this agreement took effect. Nevertheless, Biosecurity Queensland needs to be able to answer these questions.

At present, expert views vary on whether it is still feasible to eradicate fire ants from Queensland. Despite significant effort and funding, they have continued to spread across South East Queensland. In January 2023 fire ants were found on North Stradbroke Island, and in June 2023 were discovered near Toowoomba – both outside the containment area.

Biosecurity Queensland appears to have slowed the spread of fire ants – since 2001, they have spread approximately 3–5 kilometres per year. This rate of spread is much lower than what has occurred in other countries. International research indicates that fire ants have spread approximately 48 kilometres per year in the United States and 80 kilometres per year in China. Nevertheless, they have still spread.

Fire ants are difficult to eradicate. A single colony can have thousands of fire ants and multiple queens. Biosecurity Queensland eradicated 5 separate infestations: at Yarwun, Port of Gladstone, Brisbane Airport, and 2 at the Port of Brisbane. The largest of these was 8,300 hectares at the Port of Brisbane. The remaining infestation, first detected in 2001 at Richlands in South East Queensland, has now grown to more than 700,000 hectares.

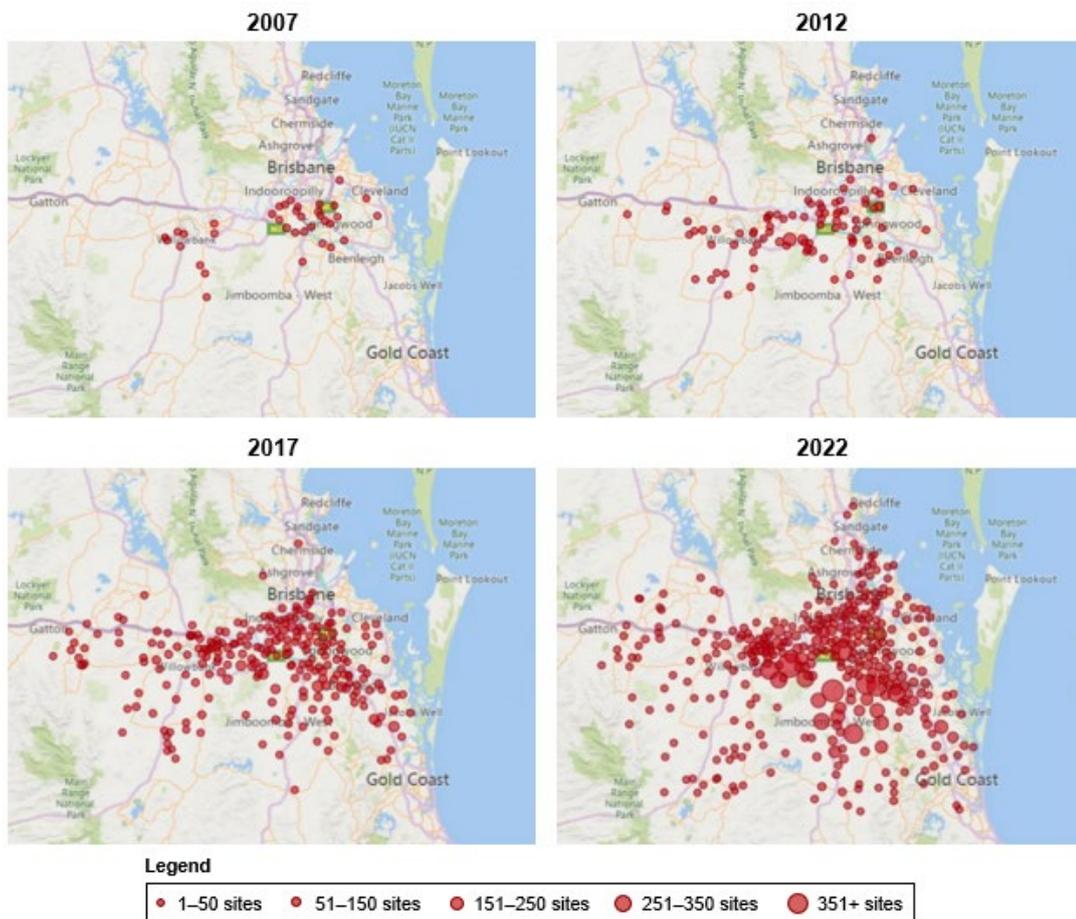
Fire ant detections are increasing

Biosecurity Queensland detects fire ants through its surveillance activities. It uses helicopters, sniffer dogs, on-ground inspections, and electronic monitoring of sites near the boundary of the containment area. It also receives reports of fire ants from the public. Since 2007, the number of sites where fire ants have been detected has increased significantly from 116 to 12,388 in 2022.

Figure 5C shows the number of sites where fire ants have been detected in South East Queensland in 2007, 2012, 2017, and 2022. The size of the bubbles represents the number of sites at that suburb.



Figure 5C
Fire ant detections in South East Queensland from 2007 to 2022



Source: Queensland Audit Office using data provided by Biosecurity Queensland.

The increasing number of fire ant detections cannot solely be attributed to the spread of fire ants. Greater community awareness and education is likely to have contributed to the number of detections. Improved technology, including more sophisticated cameras, may have also contributed. It can be difficult to quantify the extent to which these factors have increased the number of detections. Biosecurity Queensland does not do this analysis.

[Appendix B](#) shows, by suburb, where 50 or more sites of fire ants have been detected between 2007 and 2022.

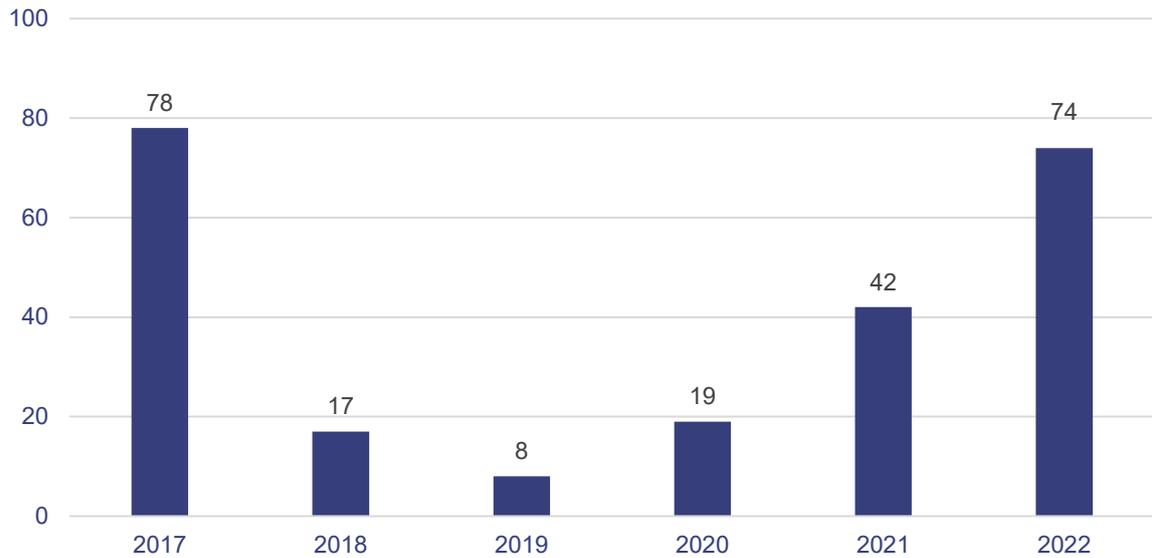
Detections in the eradication area

Biosecurity Queensland has prioritised treating fire ants in the eradication area west and southwest of Ipswich. Measuring the number of detections in this area is an important indicator of the program’s performance. We analysed fire ant detections in 20 suburbs that were in the eradication area since July 2017. Between 2017 and 2019, the number of detections decreased substantially. However, this number has almost doubled each year since 2019. In 2022, the number of detections were similar to those observed when the 10-year program commenced.

Figure 5D shows the number of sites with fire ants in the 20 suburbs within the eradication area from 2017 to 2022.



Figure 5D
Sites with fire ants, in 20 suburbs within the eradication area (2017–2022)



Source: Queensland Audit Office using data provided by Biosecurity Queensland.

Feasibility of eradicating fire ants

The National Steering Committee has commissioned regular reviews and evaluations of the program. Some of these have assessed whether it is technically feasible to eradicate fire ants from South East Queensland. Independent reviews in 2015 and 2016 concluded that it was still technically feasible and economical to do so.

In 2019–20, the National Steering Committee engaged a university to determine the geographic boundary (size and location) of the fire ant infestation. The university concluded that it could no longer determine the boundary. This is an important aspect of determining whether it was still feasible to eradicate fire ants.

In August 2021, the National Steering Committee commissioned a strategic review to examine the program's effectiveness and whether it was still feasible to eradicate fire ants from South East Queensland. It concluded that it was unclear whether it was technically feasible to eradicate fire ants. On page 47, the National Red Imported Fire Ant Eradication Program Strategic Review August 2021 report states:

Based on previous successes, the containment of polygyne infestations and the elimination of RIFA [red imported fire ants] from significant portions of SEQ [South East Queensland], it is still considered biologically feasible to eradicate the ants. However, due to the scale of the infestation at this point, and outstanding uncertainty regarding the effectiveness and strategic use of RSS [remote sensing surveillance] in routine operations, the technical feasibility of eradication is unclear at this time.

In view of Program outcomes to date and current risks of spread, a major change of strategy is needed for any possibility of long term eradication and even for continued mitigation of a build-up of infestation with consequent serious problems. Gains made to date must be preserved if possible, while a new strategy is put in place. In the longer term, eradication may eventually be feasible, but only with major changes in program scope, strategy, budget and governance, and possibly with new technologies.

We spoke with national and international subject matter experts about the feasibility of eradicating fire ants in South East Queensland given the size of the infestation. Some of these experts contrasted the size of the current infestation (approximately 700,000 hectares) to the size of the largest infestation ever successfully eradicated globally (8,300 hectares at the Port of Brisbane) and expressed uncertainty about the feasibility of eradicating fire ants in South East Queensland.

Cost benefits of eradicating fire ants

An eradication program must provide benefits larger than costs. In September 2021, Biosecurity Queensland engaged a university to assess if it was still economical to eradicate fire ants from South East Queensland. It was not engaged to assess if it was still feasible to eradicate fire ants. It analysed the cost benefits of the eradication program based on it costing \$300 million each year for 10 years and fire ants spreading 5km per year in scenario 1 and 48km per year in scenario 2. For scenario 1 it estimated a negative net loss of \$303 million over 15 years. For scenario 2 it estimated the net benefit would be at least \$430 million over 15 years. Both scenarios demonstrate positive net benefits by year 16. This analysis assumes but does not scientifically conclude that it is feasible to eradicate the fire ants. It does not consider the risk of the program failing to eradicate fire ants.

Helping other jurisdictions eradicate fire ants

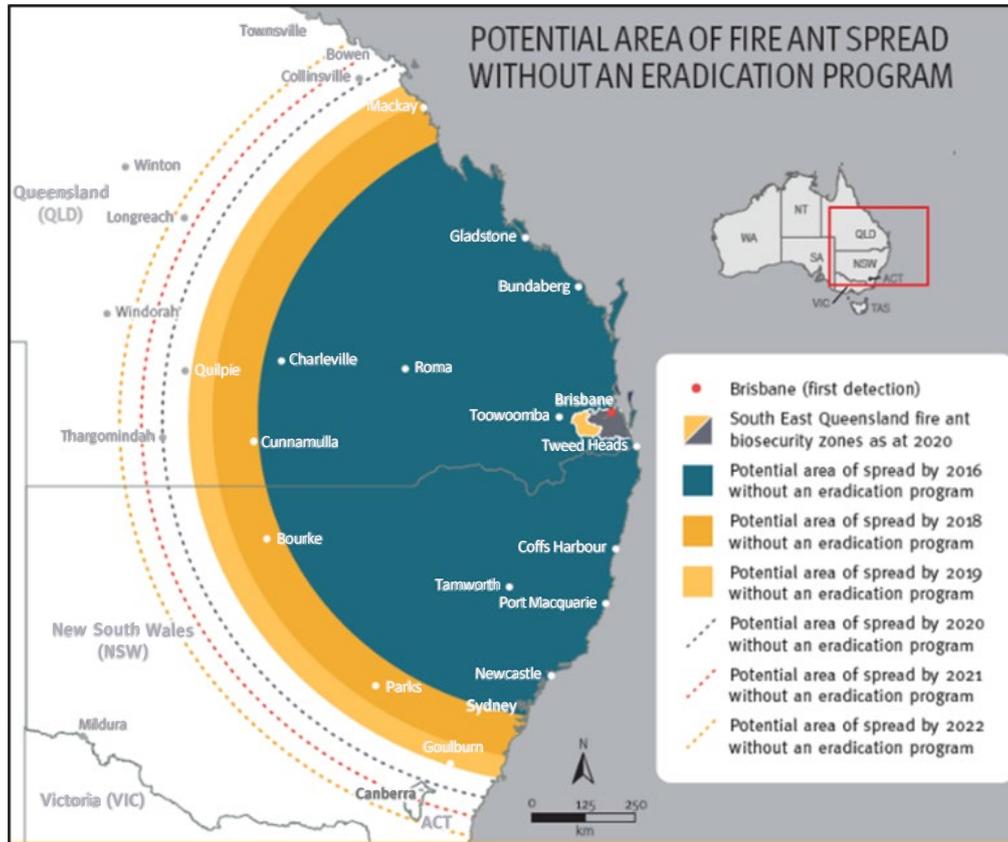
Biosecurity Queensland continues to help other jurisdictions eradicate invasive ants. To date, it has helped eradicate small, isolated fire ant infestations from New South Wales, Victoria, Northern Territory, South Australia, and Western Australia. It sent its biosecurity officers and detection dogs to help eradicate these infestations.

More transparency is needed about outcomes

It is difficult to determine how Queensland is progressing with eradicating fire ants from South East Queensland based on publicly available information. Biosecurity Queensland has many performance metrics and reports regularly and publicly on its activities. However, it does not clearly highlight the outcomes of the program. For example, in its annual performance report 2020–21, it reported the potential spread of fire ants without an eradication program, but not the actual spread. Figure 5E shows this.



Figure 5E
Potential spread of fire ants without an eradication program, as reported by Biosecurity Queensland



Source: National Fire Ant Eradication Program Annual Performance Report 2020–21.

It calculated the spread in Queensland based on the rate that occurred in the United States (48 kilometres per year). It mapped the linear spread of fire ants from the Port of Brisbane from 2001. It is unlikely that fire ants would spread at the same rate in all directions. It is more likely that they would spread along the main transport corridors, and in areas where the habitat is most suitable. This includes the main highways north, south, and west of Brisbane where fire ants can spread through the transport of earth and plant materials, like soil and mulch, as well as through the movement of machinery.

Biosecurity Queensland has developed many key performance indicators to measure performance. Some of these are valuable. For example, it measures and reports the number of significant detections outside the containment area. This is an important metric, because Biosecurity Queensland must act quickly to identify and treat fire ants outside the containment area. It may also need to expand the containment area if there are high numbers of significant detections. It could enhance this measure by including how quickly it treats significant detections. However, many of its metrics focus on outputs, not outcomes. For example, it reports the number of hectares that it surveys and treats for fire ants, but not the outcome of that work. In addition to this, a lack of consistent metrics has made it difficult to compare performance year on year.

Biosecurity Queensland needs to report its progress more transparently, including the challenges it is facing. The community, industries, local businesses, and councils need to better understand:

- the current size of the infestation
- the impact of fire ants and the risk of them spreading further
- what they can do to manage them.

They need clear and consistent messaging. This is particularly important given Biosecurity Queensland is seeking to mobilise the community, industries, and other entities to treat fire ants more actively on their land.

What is Queensland planning to do next?

The strategic review performed in August 2021 concluded that the current program could not eradicate or contain fire ants within the scope and budget of the 10-year plan. It highlighted delays in planning and commencing broadscale treatment had allowed fire ants to spread. It presented 3 options:

1. Contain, suppress, and eradicate fire ants by 2032
2. Contain and suppress fire ants
3. Wind down the program and transition to each state managing fire ants.

In November 2021, the National Steering Committee met and discussed the proposed options. In January 2022, it recommended to the agriculture ministers to continue with eradication, including:

- undertaking more surveillance outside the containment area to ensure fire ants do not move beyond the boundary
- greater focus on suppressing fire ants that have become increasingly entrenched in urban areas east of the current eradication area. This includes mobilising councils, communities, and all land managers to take a more active role suppressing fire ants on their land
- stronger compliance of industries that create habitat that is attractive to fire ants.

Biosecurity Queensland reported the cost of continuing with eradication is estimated to be approximately \$593 million over 4 years from 2023–27. A decision about approving the additional funding is yet to be made.

Recommendation 7

We recommend the Department of Agriculture and Fisheries strengthens its approach for assessing the progress and outcomes of the National Fire Ant Eradication Program. Decisions about what to do next should be guided by independent assessments grounded by scientific data and modelling. This should include periodically assessing whether it is technically feasible to eradicate fire ants from Queensland.

Recommendation 8

We recommend the Department of Agriculture and Fisheries reports its progress in eradicating fire ants from Queensland and the outcomes of its activities. This should include developing and reporting regularly on performance measures that show how well the program is achieving its outcomes, such as the size of the fire ant infestation over time.



Appendices

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B.	Fire ant detections by suburb	44
C.	Audit scope and methods	47



A. Entity responses

As mandated in section 64 of the *Auditor-General Act 2009*, the Queensland Audit Office gave a copy of this report with a request for comments to the Department of Agriculture and Fisheries. We also provided a copy to the Department of Environment and Science and all 77 councils and gave them the option of providing a response.

This appendix contains the detailed responses we received.

Following the response from the Department of Agriculture of Fisheries, the Queensland Audit Office prepared, and has included in this report, further correspondence to the department.

The heads of these entities are responsible for the accuracy, fairness, and balance of their comments.

Entity response	Page
Sunshine Coast Council	<u>28</u>
Department of Environment and Science	<u>30</u>
Department of Agriculture and Fisheries, response 26 June 2023	<u>31</u>
Department of Agriculture and Fisheries, response 22 June 2023	<u>38</u>
Correspondence with Director-General, Department of Agriculture and Fisheries	<u>42</u>



Comments received from Chief Executive Officer, Sunshine Coast Regional Council



23 June 2023

Queensland Audit Office
53 Albert Street
BRISBANE QLD 4000

Email: [REDACTED]

Re: Comments on proposed report - *Managing invasive species*

I refer to the email from the Auditor-General dated 2 June 2023 inviting feedback on the proposed report *Managing invasive species*, which the Auditor-General is proposing to finalise and table in the Legislative Assembly in late June / early July 2023.

Generally, Council is supportive of the report findings and recommendations and encourages active and well-planned coordination and investment in invasive pest management by Biosecurity Queensland. The recommendations for a risk and data driven approach to invasive pest management are also welcomed.

As you would be aware, all councils have an obligation under the *Biosecurity Act 2014* to regulate biosecurity risks and provide appropriate controls and processes. The *Sunshine Coast Council Local Government Area Biosecurity Plan 2017* – which can be accessed at <https://assets-us-01.kc-usercontent.com/c631baf8-1b46-001f-580c-d0001b68b4a8/7cdb8de1-4732-4bb2-bc19-71bca0ac3c5b/024C058D-5769-42F4-AFB9-FFBE4230B9B2> - provides a detailed action plan supporting Council's ongoing commitment to meet Councils obligations under the Act.

The proposed report has a strong focus on the overall performance of the biosecurity system in relation to the management of invasive species, within the context of:

- Leadership and coordination
- Assessing and mitigating Risk
- Data usage – informing decision making
- Regulating risk

Many of the findings and recommendations in the proposed report represent improvements to the biosecurity management system, including opportunities to enhance the support provided by the Department of Agriculture and Fisheries (DAF) to local governments in discharging their responsibilities, setting strategic priorities and prioritising funding. Our Council recognises and supports the intent to enhance leadership and coordination of biosecurity planning, management and delivery in the management of invasive species. Equally, our Council welcomes a more visible and focussed role for DAF in stakeholder

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54 First Avenue Maroochydore Qld 4558
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Sunshine Coast Regional Council ABN 37 876 973 913

1 of 2

leadership, engagement, awareness, coordination, funding support and training between Biosecurity Queensland and the Department with councils and other stakeholder groups

It is in this context, that Council would like to put forward for the consideration of the Queensland Audit Office, the potential to strengthen and clarify proposed Recommendation 5, to also include:

- the expansion of DAF's advisory services to local governments to specifically include advice on retaining the contemporary nature of local government biosecurity plans and
- mechanisms to enhance the timeliness of DAF's review of local government biosecurity plans.

Thank you for the opportunity to provide feedback on the proposed report and should your office require any further information or clarification of the matters outlined above, please do not hesitate to contact

Yours sincerely



Emma Thomas
Chief Executive Officer



Comments received from Director-General, Department of Environment and Science



Department of
Environment and Science

Our Ref: CTS 10227/23

22 June 2023

Mr Brendan Worrall
Auditor-General
Queensland Audit Office
PO Box 15396
CITY EAST QLD 4002

Dear Mr Worrall

Thank you for your email of 2 June 2023 regarding the Managing Invasive Species proposed report (the Report), developed by the Queensland Audit Office (QAO).

I understand that representatives from both of our organisations worked together throughout the drafting of the Report. I would like to thank QAO for their engagement throughout the process and for the inclusion of the case study that showcases the important work that the Department of Environment and Science (DES) is doing to protect endangered species at Astrebla Downs National Park and Taunton National Park (Scientific) in the management of feral cats.

DES recognises that pest management is a shared responsibility of all landowners and partners. As the Department of Agriculture and Fisheries (DAF) is the primary state department responsible for managing biosecurity and invasive species in Queensland, DES is committed to working with DAF in the implementation of the recommendations of the Report where there are shared interests between DES and DAF.

DES has no specific comment on the Report and recommendations and will continue to prioritise pest management in our work programs.

Should your officers require any further information, they may contact [REDACTED]

Yours sincerely

Jamie Merrick
Director-General

cc [REDACTED]

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Telephone + 61 7 3338 9304
Website www.des.qld.gov.au
ABN 46 640 294 485

Comments received from Director-General, Department of Agriculture and Fisheries on 26 June 2023



Department of
Agriculture and Fisheries

Our ref. CTS 11653/23

26/06/2023

Mr Brendan Worrall
Auditor-General
Queensland Audit Office
qao@qao.qld.gov.au

Dear Mr Worrall

Thank you for your email of 23 June 23 requesting an update to my response to the proposed QAO report "*Managing Invasive Species*" sent to your office on 22 June 2023.

I note an additional recommendation has been added to the proposed report in relation to reviewing the *Biosecurity Act 2014* (the Act). Let me reiterate my comments in my letter of 22 June 2023 with some amendments and add some additional comments about the recommended review of the *Biosecurity Act 2014*.

As noted in my previous letter, the proposed report takes a narrow view of biosecurity as just managing weeds, feral animals and tramp ants in Queensland without taking a holistic consideration of the bigger picture of the National Biosecurity System across all of the exotic pests and diseases that threaten agricultural industries and the environment.

I also noted in my previous letter that the Queensland Biosecurity System does not exist in isolation and even within Queensland, the management of invasive species, involves a number of Government entities along with Local Governments and the broader community. The Intergovernmental Agreement on Biosecurity between the Federal, State and Territory Governments aimed to strengthen the national biosecurity system. It defines the roles and responsibilities of governments and outlines the priority areas for collaboration to minimise the impact of pests and diseases on Australia's economy, environment and community.

The proposed QAO report espouses a model of leadership which is inconsistent with the modern biosecurity system approach that looks for the creation of an authorising environment and collaborative partnerships.

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In relation to the additional recommendation, the Act was comprehensively reviewed in 2019 (2019 Act Review) in consultation with key industry stakeholders including Local Government and the Local Government Association of Queensland. The 2019 Act Review was undertaken within three years of the Act's commencement as required by s501 of the Act.

The 2019 Act Review and its recommendations are published at <https://www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/review-of-the-biosecurity-act-2014>.

Some 2019 Act Review recommendations were actioned in the *Agriculture and Other Legislation Amendment Act 2020*. Certain other recommendations, not requiring a Regulatory Impact Statement (RIS), are currently progressing through normal legislative amendment processes.

The outstanding recommendations from the 2019 Act Review require further consideration and/or public consultation prior to a final decision being made by Government on whether those recommendations will be progressed.

DAF will progress this recommendation in conjunction with the next review cycle for the Biosecurity Regulation 2016 currently scheduled for 2026.

My specific responses to the eight recommendations are provided in the attached Appendix 1 on the QAO template provided.

In closing, and as stated in my earlier letter to you, we appreciate the work undertaken by the QAO to improve the performance of the department in relation to the management of invasive species. In that spirit of improvement, I suggest that future performance audits on this topic may be strengthened by inclusion of independent subject matter expertise with biosecurity experience to complement the audit teams.

If you require any further information, please contact [REDACTED]

Yours sincerely



Dr Chris Sarra
Director-General
Department of Agriculture and Fisheries

Enc. Appendix 1: Revised DAF response to QAO report "Managing Invasive Species".

Responses to recommendations



Department of Agriculture and Fisheries

Managing invasive species

Response to recommendations provided by Dr Chris Sarra, Director-General, Department of Agriculture and Fisheries on 26 June 2023.

Recommendation	Agree/ Disagree	Timeframe for implementation (Quarter and financial year)	Additional comments
<p>Strengthening biosecurity system leadership and coordination</p> <p>We recommend the Department of Agriculture and Fisheries:</p> <ol style="list-style-type: none"> strengthen its leadership and coordination role for the biosecurity system by setting strategic priorities, prioritising funding, and coordinating and overseeing activities across Queensland (Chapter 4). 	Agree	<p>Q2 2023/24 (Revision of Queensland Biosecurity Strategy for Premier's consideration)</p> <p>Q3 2023/24 (Review of DAF's leadership, consultation and partnership arrangements)</p>	<p>DAF is currently working with key stakeholders to revise the Queensland Biosecurity Strategy. A major tenet of the Australian and Queensland biosecurity system is "biosecurity is a shared responsibility". A stakeholder writing team is currently drafting and will develop action plans in coming months.</p> <p>DAF will review its leadership, consultation and partnership arrangements and structures including the Terms of Reference (TOR) and DAF's role in stakeholder committees within the Biosecurity System. These committees and arrangements include the State Land Pest Management Committee (SLPMC), State Oversight Group, Queensland Invasive Plants and Animals Committee (QIPAC) and the Queensland Dog Offensive Group (QDOG).</p>
<p>Strengthening biosecurity system leadership and coordination</p> <p>We recommend the Department of Agriculture and Fisheries:</p> <ol style="list-style-type: none"> reviews the <i>Biosecurity Act 2014</i> in consultation with stakeholders, to ensure it has the necessary clarity, authority and responsibility to effectively and efficiently lead, coordinate and enforce Queensland's biosecurity system (Chapter 4). 	Agree	<p>Q3 2024/25 (Progression of outstanding recommendations from the 2019 Act Review that require further consideration and/or public consultation)</p> <p>Q1 2025/26 Further review of <i>Biosecurity Act 2014</i></p>	<p>The <i>Biosecurity Act 2014</i> was comprehensively reviewed with key industry stakeholders including Local Government and the Local Government Association of Queensland in 2019. That review was undertaken within three years of its commencement of the Act, as required by s501 of the <i>Biosecurity Act 2014</i>.</p> <p>The 2019 Act Review and recommendations are published at: https://www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/review-of-the-biosecurity-act-2014.</p> <p>Some necessary recommendations were actioned in the <i>Agriculture and Other Legislation Amendment Act 2020</i>.</p> <p>Certain other recommendations, not requiring a Regulatory Impact Statement (RIS) are currently progressing through the normal legislative amendment processes.</p>

Recommendation	Agree/ Disagree	Timeframe for implementation (Quarter and financial year)	Additional comments
			<p>The outstanding recommendations from the 2019 Act Review require further consideration and/or public consultation prior to a final decision being made by Government on whether they will be progressed.</p> <p>DAF will progress this recommendation in conjunction with the next review cycle for the Biosecurity Regulation 2016 currently scheduled for 2026.</p>
<p>Designing an effective strategy</p> <p>We recommend the Department of Agriculture and Fisheries:</p> <p>3. review, update and implement the <i>Queensland Invasive Plants and Animals Strategy 2019-24</i> (Chapter 4). The strategy should:</p> <ul style="list-style-type: none"> • identify the current and future challenges and priorities facing Queensland’s biosecurity system and provide practical solutions to address these challenges • clearly define Biosecurity Queensland’s role in relation to leading the biosecurity system, including co-ordinating and working with councils and stakeholders responsible for managing established invasive species • include indicators of success to measure performance across the biosecurity system – these measures should be cascaded to all key stakeholders including councils • better align to the Department of Environment and Science’s Biodiversity Conservation Strategy. 	<p>Agree</p>	<p>Q2 2023/24 (Sep – Dec 2023 review of current IPAS)</p> <p>Q4 2023/24 (Mar – June 2024 public consultation of revised QIPAS)</p> <p>Q2 2023/24 (July – Sep 2024 adoption of revised QIPAS strategy)</p>	<p>The Queensland Biosecurity Strategy is currently under revision with expected release in Q3 2023/24.</p> <p>A review of the Queensland Invasive Plants and Animals Strategy 2019-24 will commence once the Queensland Biosecurity Strategy is finalised.</p> <p>DAF will renew the Queensland Invasive Plants and Animals Strategy for release during 2025 to include key performance indicators (KPI) in line with the Queensland Biosecurity Strategy and the “Conserving Nature – A Biodiversity Conservation Strategy for Queensland 2022”.</p> <p>DAF will work with DES to develop KPIs for invasive species management consistent with the performance measures for biodiversity conservation.</p> <p>DAF will investigate whether certain other arrangements are necessary to give effect to a cascade of performance measures to other stakeholders and local governments such as amendments to the <i>Biosecurity Act 2014</i> to</p> <ul style="list-style-type: none"> • establish a mandatory requirement for local government biosecurity plans to contain KPI for each local strategy to manage invasive plants and invasive animals and/or • establish a mandatory annual reporting relationship from local governments to DAF for state or local government determined performance measures or KPIs.

Recommendation	Agree/ Disagree	Timeframe for implementation (Quarter and financial year)	Additional comments
<p>Using data to inform decision making</p> <p>We recommend that the Department of Agriculture and Fisheries:</p> <p>4. improve the accuracy and level of detail it records about invasive species, their risk, and the activities it does to manage them (Chapter 4). This should include:</p> <ul style="list-style-type: none"> • determining if the Biosecurity Online Resources and Information System has the required functionality • regularly auditing and reporting on the quality, completeness, and accuracy of data in the Biosecurity Online Resources and Information System • developing processes and measures for analysing its data for trends • using its data in making decisions about how best to manage invasive species. 	<p>Agree</p>	<p>Q1 2023/24 (Rolling program of enhancements to BORIS as need identified)</p>	<p>DAF will implement the identified priority activities in the updated Queensland Invasive Plants and Animals Strategy subject to normal budgetary constraints.</p> <p>Biosecurity Online Resources and Information System (BORIS) is an internal system to aid Biosecurity Queensland administer aspects of its regulatory functions under its legislation portfolio, it is not a specific invasive species management tool or data repository or data analysis tool and is used across all biosecurity Queensland programs.</p> <p>Biosecurity Queensland has a rolling program to make functionality enhancements to BORIS and its various modules. Changes to functionality can be scoped and delivered at the request of any Biosecurity Queensland program area which identifies a need for an enhancement.</p> <p>BORIS is just one of the information systems and analytical tools used to support evidence-based decision-making. Biosecurity Queensland also uses nationally agreed applications such as CLIMATCH as part of risk profiling and decision-making using data held in national and global data invasive species data repositories.</p> <p>The Atlas of Living Australia (ALA) and the Global Biodiversity Information Facility (GBIF) are the national and global repositories for invasive species distribution data.</p> <p>DAF, other government agencies and citizen scientists provide invasive species locational data to those data repositories. DAF does not seek to duplicate those data repositories within BORIS.</p> <p>DAF curates a number of spatial data sets associated with pest species distribution and abundance. These data sets are made available through Whole of Government Open data policies and the Department has also created dashboards for external parties to support pest prioritisation and evaluation of management effort.</p>



Recommendation	Agree/ Disagree	Timeframe for implementation (Quarter and financial year)	Additional comments
<p>Assessing and mitigating the risk of invasive species</p> <p>We recommend the Department of Agriculture and Fisheries:</p> <p>5. develop and implement a framework for assessing and mitigating the risk of new and established invasive species (Chapter 4). The framework should include:</p> <ul style="list-style-type: none"> • an approach for regularly assessing, prioritising, and mitigating the risk of invasive species • protocols for communicating the risk of invasive species and any changes in approach to managing those risks, to relevant stakeholders. 	<p>Agree</p>	<p>Q4 2023/24 (scoping of developing and implementing of framework)</p> <p>Q4 2024/25 (Publishing documentation and tools)</p>	<p>DAF will refine the risk assessment and prioritisation processes and tools developed by DAF and previously made available to Queensland local governments in partnership with the Local Government Association of Queensland (LGAQ). These documents and tools will be published on the DAF website once redrafted to meet current web access publishing guidelines.</p> <p>DAF will use the same risk assessment and prioritisation tools, as provided to local government, to provide regular revisions of the risk profiles of the invasive biosecurity matter which are a local government responsibility.</p> <p>DAF will develop protocols for communicating changes in risk profiles to all relevant stakeholders including local governments.</p> <p>DAF notes that there are more than 1000 invasive plants and invasive animals, and about the same number of species of noxious fish or invasive ornamental fish. DAF has not yet scoped the resources and timelines required. However, it may take some considerable time and extra resources to affect a full review of all required risk profiles.</p> <p>DAF will also undertake a review of all invasive plants and invasive animals (including noxious fish) currently listed as restricted matter or prohibited matter in the <i>Biosecurity Act 2014</i> to determine whether the risk profiles and mitigation measures continue to require a legislative listing.</p> <p>The Queensland Government is partnering with other stakeholders in the development of Biosecurity Commons, a platform that host a suite of tools that will deliver a cloud-based decision-support platform for modelling and analysing biosecurity risk and response of invasive plants and animals.</p>

Recommendation	Agree/ Disagree	Timeframe for implementation (Quarter and financial year)	Additional comments
<p>Regulating the risk of invasive species</p> <p>We recommend the Department of Agriculture and Fisheries:</p> <p>6. provide greater education and awareness to local councils about how they can use the powers of the <i>Biosecurity Act 2014</i> to regulate the risk of invasive species (Chapter 4). This should include:</p> <ul style="list-style-type: none"> educating local councils on when and why they should issue biosecurity orders sharing better practice learnings about how local councils are regulating the risk of invasive species and the outcomes. 	Agree	<p>Q4 2023/24</p> <p>Develop and deliver a dedicated education and awareness package for elected councillors.</p> <p>Q4 2023/24</p> <p>Develop and deliver dedicated training package focusing on Local Government Chief Executive Officer powers, roles and responsibilities.</p> <p>Q1 2023/24</p> <p>Continue to deliver training to local government appointed "authorised persons" on powers, roles and responsibilities.</p>	<p>DAF intends to continue to partner with LGAQ on how to best provide training packages for Biosecurity Best Practice Regulation to local government elected members, senior management and staff.</p> <p>DAF has commenced "master classes" for local government "authorised persons" to support local government compliance with the general biosecurity obligation (GBO) when managing invasive grasses.</p> <p>The learning process for Local Government authorised persons is ongoing. DAF will continue to provide training to Local Government authorised persons during 2023/24 and beyond.</p>
<p>Responding to fire ants</p> <p>We recommend the Department of Agriculture and Fisheries:</p> <p>7. strengthen its approach for assessing the progress and outcomes of the National Fire Ant Eradication program (Chapter 5). Decisions about what to do next should be guided by independent assessments grounded by scientific data and modelling. This should include periodically assessing whether it is technically feasible to eradicate fire ants from Queensland.</p> <p>8. report its progress in eradicating fire ants from Queensland (Chapter 5) and the outcomes of its activities. This should include developing and reporting regularly on performance measures that show how well the program is achieving its outcomes, such as the size of the fire ant infestation over time.</p>	Agree	<p>Q1 2023/24</p> <p>(subject to acceptance of revised national response plan)</p>	

Comments received from Director-General, Department of Agriculture and Fisheries on 22 June 2023



Department of
Agriculture and Fisheries

Our ref: CTS 10320/23

22/06/2023

Mr Brendan Worrall
Auditor-General
Queensland Audit Office

Dear Mr Worrall

Thank you for your letter of 2 June 2023 inviting my response to the recommendations contained in the Queensland Audit Office (QAO) proposed report "*Managing Invasive Species*". As always, my department embraces the opportunities for improvement presented by these processes. I would like to take this opportunity to respectfully provide feedback on the report along with our response to the recommendations.

The proposed report appears to take a narrow view of biosecurity as managing weeds, feral animals and tramp ants in Queensland without taking into consideration the bigger picture of the National Biosecurity System. The Queensland Biosecurity System does not exist in isolation and even within Queensland, the management of invasive species, involves a number of Government entities along with Local Governments and the broader community. The Intergovernmental Agreement on Biosecurity between the Federal, State and Territory Governments aimed to strengthen the national biosecurity system. It defines the roles and responsibilities of governments and outlines the priority areas for collaboration to minimise the impact of pests and diseases on Australia's economy, environment and community.

In 2017, an independent report, "*Priorities for Australia's biosecurity system*" provided at the Agriculture Ministers' Forum, made recommendations for strengthening Australia's national biosecurity system including the development of a National Priority List of Exotic Environmental Pests, Weeds and Diseases (EEPL) to strengthen environmental biosecurity and to develop a national approach to address biosecurity risks to Australia's environment. The EEPL was released in November 2020. The Department of Agriculture and Fisheries (DAF) was involved in nominating invasive plants and invasive animals previously assessed as posing threats to Queensland's environment. The final national priority lists for weeds, invertebrate (insects) and vertebrate pests (feral animals) are dominated by invasive plants and animals already included in the *Biosecurity Act 2014* as either restricted matter or prohibited matter. The lists in the *Biosecurity Act 2014* are Queensland's priority invasive plants and invasive animals including tramp ants.

DAF, through Biosecurity Queensland, leads and delivers four nationally cost-shared eradication programs for Red Imported Fire Ant (RIFA), Red Witchweed, Tropical Weeds and Electric Ants. The finding that “Biosecurity Queensland’s primary focus is invasive species that have an economic impact” is therefore somewhat surprising given that three of the four current national programs are considered to have far greater environmental and social amenity impacts.

The National Red Imported Fire Ant Eradication Program (NRIPAEP), chosen as a case study for this audit, is unlike any other program attempted in the history of biosecurity in Australia. Accordingly, it has been reviewed a number of times in its 20+ year history. In 2021, the RIFA Steering Committee commissioned an independent strategic review of the Program with the aim of examining the Program’s effectiveness, the feasibility of achieving fire ant eradication and alternative strategies for achieving the eradication objectives. On 3 September 2021, the Independent Review Panel delivered its report, the *‘National Red Imported Fire Ant Eradication Program Strategic Review August 2021’*. The review was undertaken by an independent panel comprising of Dr Helen Scott-Orr, Dr Monica Gruber and Mr Will Zacharin. Dr Scott-Orr, the Chair of the review panel, was formerly the Australian Inspector-General of Biosecurity.

The review found that eradication remains technically feasible if changes in the program’s scope, strategy, budget and governance are initiated. A new response plan and a request for ongoing funding has been developed and endorsed by the Steering Committee and is progressing to Agriculture Ministers for their consideration. The QAO is silent on the role of Fire Ant Suppression Team (FAST) in assisting landowners to self-treat fire ants on properties in the core infested area. As part of the report, I question the use of some of the tables, including raw numbers on reports of fire ants in particular suburbs as there is not sufficient scope to provide context on how these numbers should be assessed and suggest a failure of the program.

The proposed QAO report espouses a hierarchical or “leader-follower” model of leadership, which is questionable in today’s society and modern biosecurity system that looks for the creation of an authorising environment and partnerships. The proposed QAO recommendation that Biosecurity Queensland “strengthen leadership and coordination role” in the management of invasive plants and animals is a reversal from a central tenant of the National Biosecurity System that “biosecurity is a shared responsibility”. The department has put considerable effort into bringing together its various key stakeholders, including Local Government, to work collaboratively across sectional interests which vary significantly across the State. This central shared responsibility will continue during the revision of the Queensland Biosecurity Strategy which is currently underway.

I note the findings related to the Invasive Plants and Animals Strategy 2019-2024, including the unsurprising finding that the earlier document does not refer to the Biodiversity Conservation Strategy published three years later in 2022. I commit my department to work with the Department of Environment and Science and other stakeholders to develop suitable performance measures for managing invasive species that align with the performance measures in the Biodiversity Conservation Strategy. I also note Mr Jamie Merrick, Director-General of the Department of Environment and Science's response of 17 February 2023 to the QAO performance audit report 9:2022-23 "*Protecting our threatened animals and plants*" which also identifies other DAF strategies and programs for alignment with the Biodiversity Conservation Strategy.

The proposed QAO report makes findings that appear to suggest that DAF has over prioritised funding for cluster fencing as compared to funding the control of feral cats. The proposed report fails to recognise the rounds of the Queensland Feral Pest Initiative (QFPI) which were devoted solely to cluster fencing. These grants served a dual purpose as a biosecurity measure to mitigate predation of livestock by wild dogs and as an industry economic development and support role to provide employment and place the sheep and wool industry on the road to recovery after years of drought.

The department has received additional funding towards biosecurity preparedness for animal diseases, including \$3.47 million to improve coordination of feral pig suppression in the event of an exotic animal disease incursion. This helps shift Biosecurity Queensland's posture to proactively meet emerging threats and empower the collective responsibility of the community and industry to face biosecurity threats posed by established pests. The department plans to continue to deliver Queensland Government commitments such as providing funding to local communities through industry groups, Local Governments and Natural Resource Management Groups to manage invasive plants and invasive animals in further rounds of the Queensland Feral Pest Initiative to allow participants in the Queensland Biosecurity System to be leaders in their areas of responsibility.

The proposed QAO report makes findings about deficiencies in the content of Local Government biosecurity plans or a lack of performance measures. The report makes no recommendations as to how this could be effectively addressed by Local Government, as part of the biosecurity system, or for appropriate levers that the department may use to improve the preparation, review and implementation of these biosecurity plans by Local Government. I note that regulatory measures in relation to the preparation of Local Government biosecurity plans requiring approvals from the State were removed during preparation of the Biosecurity Bill 2013 as part of "red-tape reduction".

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The exercise of regulatory powers under the *Biosecurity Act 2014*, such as issuing biosecurity orders to a person for failing to discharge a General Biosecurity Obligation (GBO), rests with an authorised person appointed by the Chief Executive Officer of a Local Government and not with the Local Government Senior Management or the elected Councillors. The Council approved Local Government biosecurity plan should give guidance both to a person to understand how to discharge their GBO in the local context of biosecurity risks posed to local industry and local environment and also guidance to the authorised officer to enforce, when necessary, with a biosecurity order. It should also be noted that the use of a Biosecurity Order under the Act is but one regulatory approach to achieve compliance with the legislation and in many circumstances is viewed as a last resort. On this basis, it is not an effective metric to determine a level of compliance or enforcement effort undertaken by an authorised officer.

The department recognises that there has been considerable turnover in senior management of Local Governments since the commencement of the *Biosecurity Act 2014* in July 2016 and that a dedicated education and awareness program for elected Councillors and training packages for Local Government Senior Management is now necessary to dispel some misconceptions about roles and responsibilities of Local Government under the *Biosecurity Act 2014*. The learning process for Local Government appointed authorised persons is ongoing with Biosecurity Queensland Officers having provided Biosecurity Act training or retraining to 103 Local Government officers from 16 Local Governments in South East Queensland over six training sessions during 2022/23. This training program is also being provided in other regions with training sessions for 30 officers from 10 Local Governments at Rockhampton and Longreach.

My specific responses to the seven recommendations are provided in the attached Appendix 1 on the QAO template provided.

I appreciate the work undertaken by the QAO to improve the performance of the department in relation to the management of invasive species. In that spirit of improvement, I suggest that future performance audits on this topic may be strengthened by inclusion of independent subject matter expertise with biosecurity experience to complement the audit teams.

If you require any further information, please contact [REDACTED]

Yours sincerely



Dr Chris Sarra
Director-General
Department of Agriculture and Fisheries

Att: DAF response to recommendations proposed QAO report "*Managing invasive species*"

Department of Agriculture and Fisheries



Correspondence with Director-General, Department of Agriculture and Fisheries



Your ref: CTS 10320/23 & 11653/23
Our ref: PRJ03579

SENSITIVE

28 June 2023

Dr C Sarra
Director-General
Department of Agriculture and Fisheries
1 William Street
BRISBANE QLD 4000

Dear Chris

Performance audit of Managing Invasive Species

Thank you for your letters dated 22 and 26 June 2023, in which you provide your comments on my proposed report for the performance audit of *Managing Invasive Species*.

I note that you have agreed to all the recommendations in my report and provide information on your plans to implement the recommendations.

I appreciate your comments in your letter regarding that conduct of the audit and suggestions that may enhance the Queensland Audits Office (QAO) approach to such audits in the future. As always, my staff will consider your suggestions and, where appropriate, we will make changes to enhance our audit engagement and processes. There are a few of your comments, however, that, for sake of clarity and accuracy, need to be directly addressed.

Feasibility of the eradication of fire ants

You comment that the National Red Imported Fire Ant Eradication Program Strategic Review August 2021 report (the report) found 'that eradication remains technically feasible if changes in the program's scope, strategy, budget and governance are initiated'. The view that eradication remains technically feasible overstates what the report and the subject matter experts actually said. Page 47 of the report states that 'technical feasibility of eradication is unclear at this time' and further states that eradication 'may eventually be feasible' (not remains feasible) with major changes in the program. The full extract from page 47 of the report is reproduced below:

"Based on previous successes, the containment of polygyne infestations and the elimination of RIFA from significant portions of SEQ, it is still considered biologically feasible to eradicate the ants. However, due to the scale of the infestation at this point, and outstanding uncertainty regarding the effectiveness and strategic use of RSS in routine operations, the technical feasibility of eradication is unclear at this time.

In view of Program outcomes to date and current risks of spread, a major change of strategy is needed for any possibility of long term eradication and even for continued mitigation of a build-up of infestation with consequent serious problems. Gains made to date must be preserved if possible, while a new strategy is put in place. In the longer term, eradication may eventually be feasible, but only with major changes in program scope, strategy, budget and governance, and possibly with new technologies."
(Underlining added).

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Leadership of the state's biosecurity system

Your comment that my report 'espouses a hierarchical or leader-follower model of leadership' is not accurate. My report acknowledges that all Queenslanders, land owners and levels of government have both specific and general responsibilities for biosecurity. However, given the limited information, expertise and resources available, statewide leadership is needed to coordinate and prioritise effort in the state and national interest.

Independent subject matter expertise

Finally, and importantly my staff engaged with a wide range of national and international experts on biosecurity and, specifically, on fire ants. This included members of the National Fire Ant Independent Review Panel. This is made clear throughout my audit report and specifically in Appendix C, which under the heading subject matter experts states:

"We interviewed subject matter experts. This included entomologists – to understand the biology of fire ants and their impact and spread. We also discussed approaches to containing and eradicating fire ants in Australia and other countries, like the United States."

In addition, on page 23 of the report we state that:

"We spoke with national and international subject matter experts about the feasibility of eradicating fire ants in South East Queensland given the size of the infestation."

In closing, I would again like to thank you for your comments. As always, your response letters to the report will be published in Appendix A of my report when it is tabled in parliament. In the interests of accuracy, I intend to also publish this letter in the appendix of the report.

In the meantime, please do not hesitate to contact me should you have any questions. If you would like further detail on the audit, please do not hesitate to have your staff contact [redacted]

Yours sincerely



Brendan Worrall
Auditor-General

SENSITIVE

2



B. Fire ant detections by suburb

The table below shows the number of sites in each suburb where 50 or more sites of fire ants were detected in total across the 4 years: 2007, 2012, 2017, and 2022. It excludes those suburbs that had less than 50 fire ant detections.

Suburb	2007	2012	2017	2022	Total
Acacia Ridge	1	11	25	85	122
Alberton	–	–	44	48	92
Algester	1	–	15	34	50
Archerfield	1	–	16	38	55
Augustine Heights	–	84	77	91	252
Bahrs Scrub	–	–	8	293	301
Beenleigh	–	–	9	58	67
Bellbird Park	–	–	25	173	198
Berrinba	–	7	28	72	107
Bethania	–	–	21	43	64
Brassall	–	–	16	74	90
Brookwater	–	1	67	52	120
Buccan	–	1	9	73	83
Bundamba	–	5	32	131	168
Cedar Grove	–	–	2	54	56
Chambers Flat	–	–	38	147	185
Churwar	–	–	13	58	71
Collingwood Park	–	–	20	177	197
Coomera	–	–	9	104	113
Crestmead	–	–	40	41	81
Darra	1	11	28	121	161
Deebing Heights	–	18	10	26	54
Doolandella	–	24	40	76	140
Eagleby	–	1	16	57	74
Eight Mile Plains	21	1	14	28	64
Flagstone	–	–	23	274	297
Greenbank	–	7	65	466	538
Heathwood	16	3	29	65	113
Holmview	–	–	45	140	185
Jimboomba	–	–	12	369	381

Suburb	2007	2012	2017	2022	Total
Karalee	–	–	17	154	171
Kingsholme	–	–	8	50	58
Leichhardt	–	–	38	21	59
Logan Reserve	–	5	59	397	461
Logan Village	–	1	44	225	270
Loganholme	–	1	10	68	79
Loganlea	–	5	11	66	82
Marsden	2	1	37	58	98
Moggill	–	2	11	60	73
Munruben	–	2	10	75	87
New Beith	–	–	20	230	250
North Ipswich	–	–	2	48	50
North Maclean	–	1	9	132	142
Ormeau	–	–	6	67	73
Ormeau Hills	–	–	76	17	93
Oxley	4	2	49	99	154
Pallara	–	2	20	419	441
Park Ridge	–	10	129	398	537
Park Ridge South	1	–	20	49	70
Peak Crossing	1	7	24	18	50
Pimpama	–	–	96	195	291
Redbank	–	–	17	76	93
Redbank Plains	–	180	86	521	787
Richlands	1	16	47	55	119
Ripley	–	–	27	353	380
Riverbend	–	–	17	78	95
Rochedale	4	60	45	180	289
Rocklea	4	1	78	45	128
Rosewood	1	17	35	17	70
Runcorn	3	–	12	36	51
South Maclean	–	–	17	208	225
South Ripley	–	–	63	278	341
Spring Mountain	–	4	4	292	300
Springfield	–	1	7	57	65
Springfield Central	–	26	32	50	108
Springfield Lakes	–	61	91	55	207
Stapylton	–	–	13	47	60
Stockleigh	–	–	15	105	120

Suburb	2007	2012	2017	2022	Total
Swanbank	–	32	11	35	78
Tamborine	–	–	7	153	160
Thornlands	–	–	15	49	64
Underwood	1	–	17	42	60
Wacol	–	8	42	76	126
Walloon	–	–	17	97	114
Waterford	–	–	93	50	143
Waterford West	1	2	20	76	99
Willawong	–	6	7	61	74
Woodhill	–	–	1	148	149
Woongoolba	–	–	30	35	65
Yarrabilba	–	–	35	213	248
Yatala	–	–	4	85	89
Grand total	64	627	2,397	9,887	12,975

Source: Queensland Audit Office using data provided by Biosecurity Queensland.



C. Audit scope and methods

Performance engagement

This audit has been performed in accordance with the *Auditor-General Auditing Standards*, incorporating, where relevant, the standards on assurance engagements issued by the Auditing and Assurance Standards Board. This includes the Standard on Assurance Engagements ASAE 3500 *Performance Engagements*. This standard establishes mandatory requirements, and provides explanatory guidance, for undertaking and reporting on performance engagements.

Audit objective and scope

The objective of the audit is to assess how effectively state and local government entities are managing invasive species.

The audit addressed the objective through the following sub-objectives and criteria:

Sub-objective 1: The responsible entities act effectively to prevent, eradicate, contain, and manage invasive species	
Criteria 1.1	Entities identify and assess invasive species risk
Criteria 1.2	Entities plan effectively to manage invasive species
Criteria 1.3	Entities take action to manage invasive species
Sub-objective 2: The responsible entities effectively monitor and report on invasive species to demonstrate achievement of outcomes	
Criteria 2.1	Entities monitor and report on the effectiveness of their biosecurity activities both individually and at a whole-of-government level

The entities we audited

- Department of Agriculture and Fisheries – responsible for leading the biosecurity system and mitigating the risk of invasive plants and animals across the state
- Department of Environment and Science – responsible for managing invasive species in parks and forests across the state and protecting species that are at risk of extinction
- local councils – responsible for having a biosecurity plan and managing invasive species in their local government area.

Scope exclusions

We included all invasive plants and animals in Queensland in the scope of this audit, including red imported fire ants. Biosecurity Queensland is leading the National Red Imported Fire Ant Eradication Program (the program). The program is overseen by a National Steering Committee. We did not audit the committee or any other commonwealth agency in relation to the program.

We did not examine how entities manage biosecurity incidents for major disease outbreaks, such as foot and mouth disease.



Method

Field interviews and site visits

We conducted interviews with key people, staff, and stakeholders from across the biosecurity system, including regional areas of Queensland. This included but was not limited to:

- Department of Agriculture and Fisheries
- Department of Environment and Science
- National Red Imported Fire Ant Program and the National Steering Committee
- local councils
- regional organisations of councils
- Local Government Association of Queensland
- AgForce
- Invasive Species Council
- National Feral Pig Action Plan.

The Auditor-General and the audit team conducted a site visit of the National Fire Ant Eradication Program at Berrinba.

Survey

We distributed a survey to all 77 local councils in Queensland. The survey included questions about local councils' biosecurity plans and approaches to managing invasive species. Sixty-one local councils responded.

Document review

We obtained and reviewed relevant documents from the entities involved in the audit. This included legislation, strategic plans, operational plans, guidelines, correspondence, performance reports, reviews, evaluations, and modelling. We also considered research from other jurisdictions and academia.

Data analysis

We analysed data from the Department of Agriculture and Fisheries:

- Biosecurity orders (2017–2021)
- Fire ant detections (2001–2022)
- Queensland Feral Pest Initiative grant funding (2016–2021).

We validated our data methods and analysis progressively with the relevant entities.

Subject matter experts

We interviewed subject matter experts. This included entomologists – to understand the biology of fire ants and their impact and spread. We also discussed approaches to containing and eradicating fire ants in Australia and other countries, like the United States.





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