NATIONAL
Fire Ant
Eradication
PROGRAM

South East Queensland

Annual Performance Report 2020–21

This publication has been compiled by the National Fire Ant Eradication Program delivered by Biosecurity Queensland.

Acknowledgements: The State of Queensland—Department of Agriculture and Fisheries 2022.

Cover: Utility terrain vehicles equipped with bait spreaders enable the program to distribute bait more quickly and efficiently. Bait is also spread by a ground crew using hand spreaders and via air using helicopters.

The National Fire Ant Eradication Program is a nationally cost-shared program funded by all Australian state and territory governments and the federal government. The program is governed strategically and operationally by a national Steering Committee and an independent chair, who work with Biosecurity Queensland to deliver the program on behalf of the other jurisdictions.

Australian Government

Queensland Government

Government of South Australia
Primary Industries and Regions SA

Tasmanian Government

AGRICULTURE VICTORIA

NORTHERN TERRITORY GOVERNMENT

NSW GOVERNMENT Department of Primary Industries

GOVERNMENT OF WESTERN AUSTRALIA Department of Primary Industries and Regional Development

ACT Government

National Fire Ant Eradication Program
South East Queensland

Above: Red imported fire ant *(Solenopsis invicta)*.

About the program

The National Fire Ant Eradication Program is Australia's largest biosecurity eradication initiative and is committed to ridding the nation of one of the world's most invasive pests.

Red imported fire ants (fire ants) are rightly considered one of the most invasive and destructive pests globally. They cause high long-term environmental, economic, agricultural and public health costs—including extinctions of species—in countries they invade. In Australia, an incursion in South East Queensland (SEQ), found in 2001, has been under attempted eradication.

From 2001 until 2017, all Australian governments invested a total of $367 million. In 2017, a cost-shared 10-year Eradication Plan, approved by all Australian governments, allocated $411.4 million for the Queensland Government to eradicate fire ants from SEQ by 2027.

The ensuing National Fire Ant Eradication Program (the program) is governed by a National Steering Committee of representatives from the program's cost-sharing partners led by an independent Chair. The Committee advises the program on fire ant eradication strategy and supplies oversight of program performance and risk.

When in high densities and abundance, fire ants have major impacts on all areas of human interest, including public health, recreation, and tourism, agriculture, infrastructure and biodiversity. If left uncontrolled, the estimated social, environmental, and economic impact of fire ants would surpass the combined effects of rabbits, foxes, feral pigs, camels, wild dogs, feral cats, carp and cane toads costing billions of dollars annually[1,2].

The program has confined fire ants to a small part of SEQ, although some spread in SEQ has occurred.

The program aims to rid Queensland of this invasive pest and protect our way of life in partnership with the Australian community.

While eradication remains the primary focus of the program, containment through the suppression of the existing infestation in areas awaiting eradication treatment and preventing further spread remains a high priority. This includes prioritising detections of importance at or near the operational boundaries, work with high-risk material industries to ensure compliance and vigilance to prevent spread through the human-assisted movement of fire ants and working with the community to suppress the pest in areas with a heavy fire ant population.

Landowners and residents in SEQ also play a critical role in suppressing the pest by treating properties or land they own or manage. This helps reduce the size and scope of the eradication task and degrades the genetic integrity of fire ant colonies.

In 2021, the Steering Committee commissioned an independent review of the program to provide advice on its future.

> Scientists estimate that without the interventions undertaken by the program, fire ants would have spread as far north as Bowen, west to Longreach and south to Canberra by now (Figure 1).

[1] F. Ross Wylie, Sharon Janssen-May 2016, Red Imported Fire Ant in Australia: What if we lose the war? Ecological Management & Restoration, Vol.18. Issue 1, January 2017, viewed 19 November 2020 at https://doi.org/10.1111/emr.12238›. [2] McLeod, R. (2004) Counting the Cost: Impact of Invasive Animals in Australia 2004. Cooperative Research Centre for Pest Animal Control. Canberra.

Our mission

To protect our lifestyle, environment and economy by eliminating fire ants from South East Queensland.

Our objective

Objective 1:
Reduce infestation until fire ants are no longer present in South East Queensland and ensure areas remain free from fire ants through the implementation of eradication measures as outlined in the 10-year Eradication Plan.

Objective 2:
Prevent the spread of fire ants to non-infested areas by using a combination of treatment, monitoring of compliance with movement restrictions pertaining to fire ant carriers and public education/ engagement.

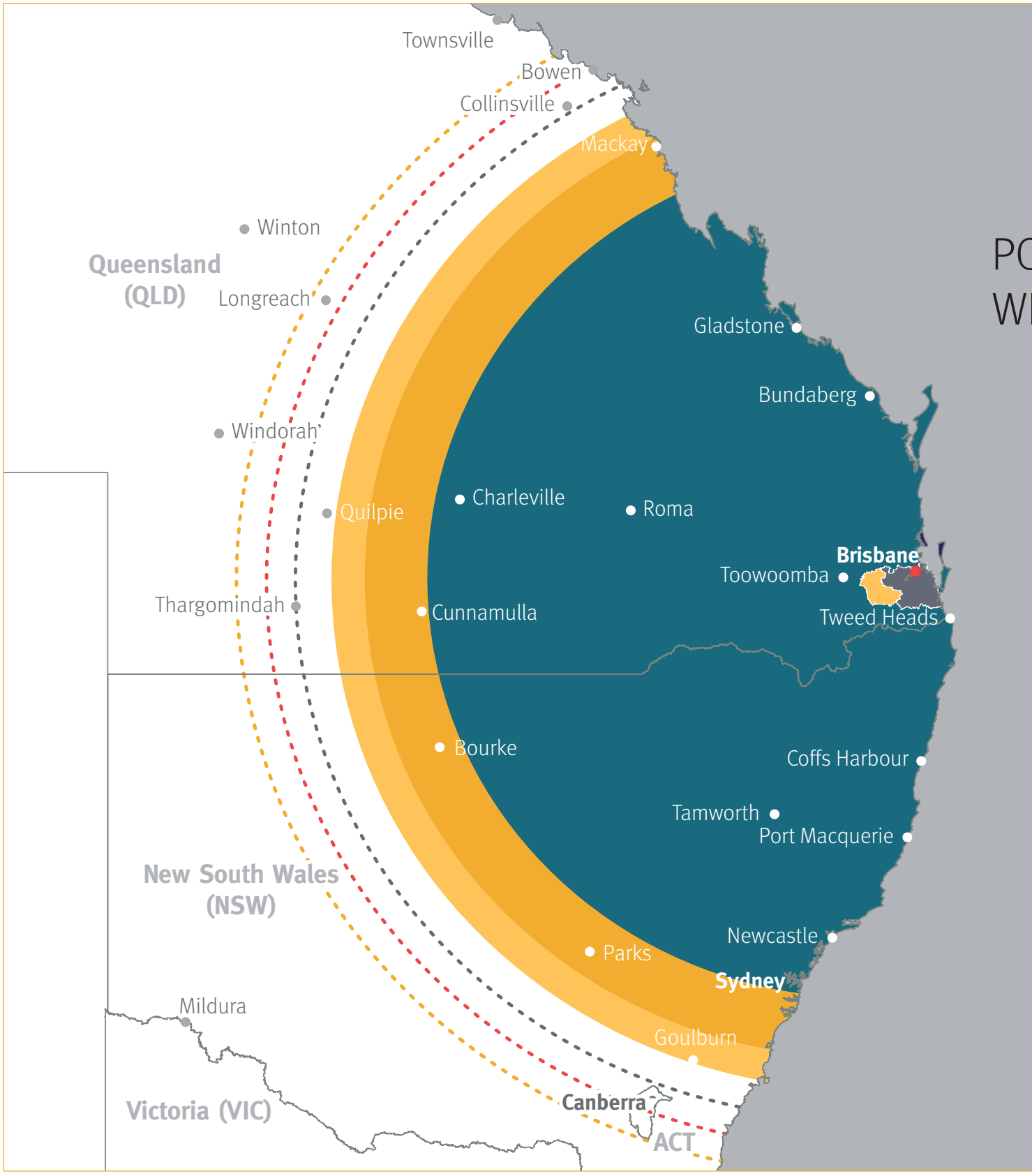
Objective 3:
Provide evidence to demonstrate freedom from fire ant infestation in the South East Queensland region (following the process to declare proof of freedom described in the 10-year Eradication Plan).

Objective 4:
Help prevent the establishment of new incursions of invasive ant species Australia-wide by building capability in and provision of invasive ant response and eradication expertise.

Our operating principles

- **Customer focused**—enable and support a safe, healthy and successful South East Queensland community through transparent and strategic engagement.
- **Science driven**—integrate scientific expertise, risk-based analysis and current empirical evidence to design program activity.
- **Collaborative**—partner with government agencies, industry and the South East Queensland community to amplify the program's treatment objectives.
- **Efficient and effective**—invest in contemporary technologies and practices to continuously improve our operations and maximise the program's benefit to the public.
- **Flexible**—adapt to the dynamics of our environment and improvise in order to overcome the challenges we encounter.
- **Empowered**—invest in staff training and development to nurture a culture of high performance and responsibility.

Figure 1: Potential spread of fire ants without an eradication program up to 2022



POTENTIAL AREA OF FIRE ANT SPREAD WITHOUT AN ERADICATION PROGRAM

Brisbane (first detection)

South East Queensland fire ant biosecurity zones as at 2020

Potential area of spread by 2016 without an eradication program

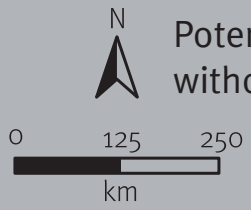
Potential area of spread by 2018 without an eradication program

Potential area of spread by 2019 without an eradication program

Potential area of spread by 2020 without an eradication program

Potential area of spread by 2021 without an eradication program

Potential area of spread by 2022 without an eradication program



Scope of report

The program's 10-year Eradication Plan began in July 2017 and is focused on finding, containing and eradicating fire ants in South East Queensland (SEQ).

The 10-year Eradication Plan's underpinning strategy is subject to verifiable eradication. It includes five phases and three checkpoints before proof of freedom from fire ants is declared (Table 1).

Using a staged, rolling treatment strategy from west to east South East Queensland, the aim is to contain the extent of the fire ant infestation and reduce its size until eradication is achieved.

The total operational area of the program is 645 105 hectares (ha). It has been divided into four priority areas for focused eradication activity over successive stages of the 10-year Eradication plan (Figure 2).

Figure 2: National Fire Ant Eradication Program 10-year Eradication Plan area map 2020–21

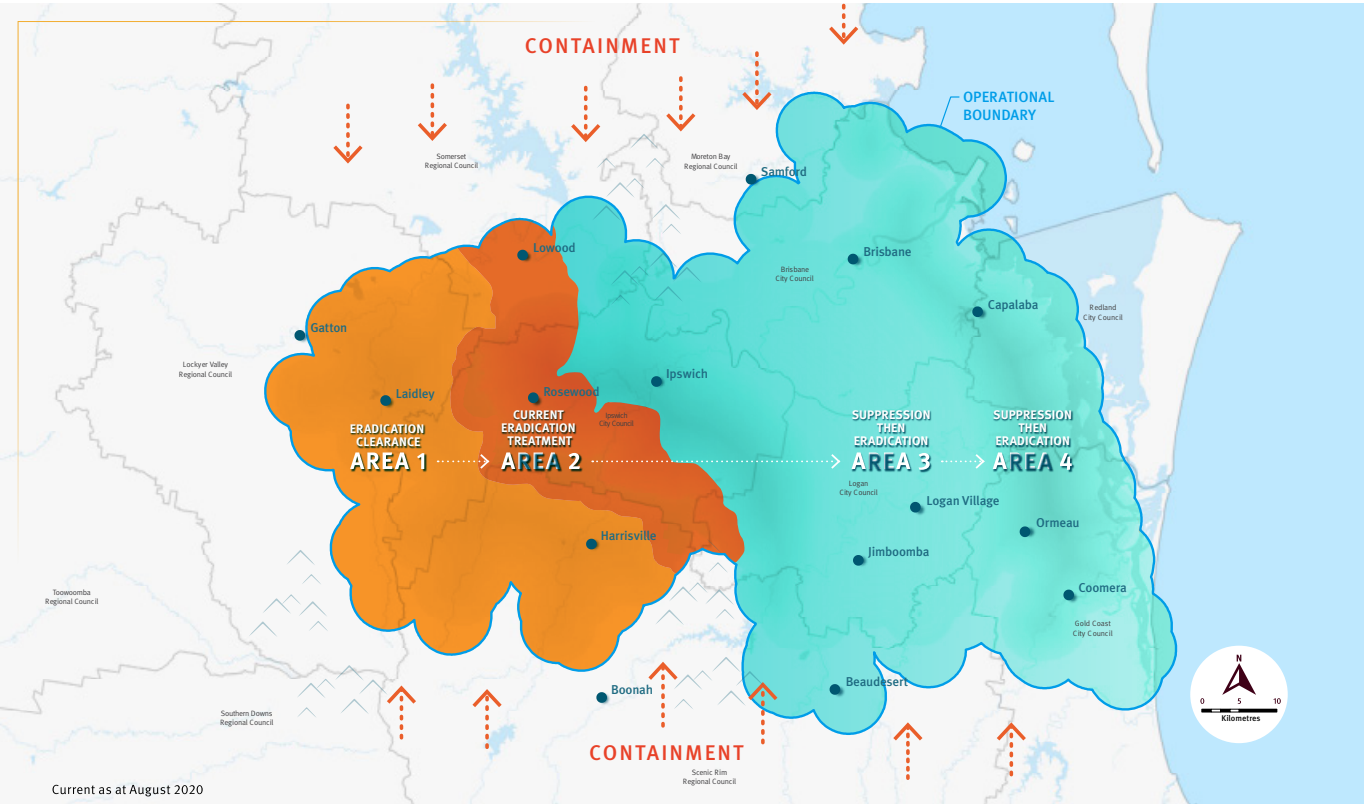


Table 1: Overview of fire ant management strategy

Phase	What?	How long?
Phase 1: Containment	Establishing and containing fire ant infestation boundaries	Until the area moves to Phase 2: Eradication in line with the program's 10-year Eradication Plan
Phase 2: Eradication (treatment)	Treatment of large, targeted eradication areas	Over 1–3 years depending on the eradication treatment approach
Checkpoint 1: Evaluation of eradication treatment completion to check the success of treatment		
Phase 3: Clearance	Search eradication areas and treat any residual fire ants	Minimum 2 years
Phase 4: Clearance zone freedom	Conduct further surveillance in Clearance Zones to be confident no fire ants remain	Until the risk of ceasing surveillance is acceptably low (1–5 years)
Phase 5: (Area) Freedom	Respond to any detections reported with active surveillance discontinued	When there is overall probability all of South East Queensland is free from fire ants (5+ years)
All clearance zones declared free = **Proof of Freedom declared of South East Queensland infestation**		

This report outlines progress in delivering the 10-year Eradication Plan for the 2020–21 financial year.

Our history

Our fire ant story begins in 2001, although they likely first arrived in Australia in the 1990s.

Increased globalisation has meant greater risk to our shores. Fire ants have been intercepted at every capital city port in Australia, except in Hobart (Tasmania) where fire ants have not been discovered. Despite increased vigilance in protecting Australia, genetic analysis shows nine distinct incursions (where fire ants have established an infestation) and three post-quarantine detections (where fire ants have made it past the port but not established an infestation) have occurred.

As of 30 June 2021, all three of the post-quarantine detections and six out of the nine incursions have been eradicated. One of those—the 2001 Port of Brisbane incursion at 8300 ha—is the largest known ant eradication in the world.

2001
- Two separate incursions from the United States found in South East Queensland at the Port of Brisbane and Richlands in western Brisbane.
- National Red Imported Fire Ant Eradication Program is launched as an emergency response to fire ants.

2002
- Scientific review of the program finds remarkable progress in one year and recommends funding to eradicate until 2004. If not eradicated suggests changing the treatment focus to containment.

2004
- Senate enquiry on the regulation, control and management of invasive species supports a robust strategic approach to managing significant invasive species.
- Scientific review of the program finds dramatic reductions in fire ant populations in treated areas and supports the continuation of the program for two years.
- Post-quarantine eradication at Port of Brisbane, Queensland.

2006
- New incursion of fire ants from Argentina found in Yarwun near Gladstone in central Queensland.
- Quarantine eradication in Melbourne, Victoria.
- Scientific review of the program concludes the eradication campaign has delayed fire ant spread by 10–12 years, has greatly reduced polygyne colonies cutting the impact of the fire ants by 50–70 per cent and that fire ants could potentially still be eradicated.

2007
- Quarantine eradication in Darwin, Northern Territory.

2009

- Quarantine eradications at Port of Brisbane, Queensland and South Australia.
- Post-quarantine eradication at Lytton, Brisbane.

2010

- Roush Review (national program review) recommends the program focus on containment of the current infestation for 18–24 months. Resources diverted to remote sensing surveillance.
- Yarwun 2006 **fire ant incursion declared eradicated**.

2011

- Quarantine eradication in Western Australia.
- Post-quarantine eradication at Roma, Queensland.

2012

- Port of Brisbane 2001 **fire ant incursion declared eradicated**.

2013

- New incursion from the United States found at Port of Gladstone, Queensland.

2014

- Quarantine eradication in Brisbane, Queensland.
- New incursion from Argentina found in Port Botany, New South Wales.

2015

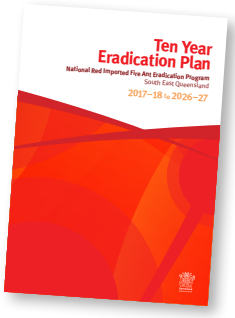
- New incursion from the United States found at Brisbane Airport, Queensland.
- Quarantine eradication in Melbourne, Victoria.
- Program remote sensing technology accurately determines full extent/area boundary of infestation in South East Queensland.

2016

- Port of Gladstone 2013 **fire ant incursion declared eradicated**.
- New incursion from Argentina found at Port of Brisbane, Queensland.
- Independent Review of the National Program finds there is a small window to eradicate the ants and recommends unified long-term national action to fund the eradication program in South East Queensland.
- Port Botany 2014 **fire ant incursion declared eradicated**.

2017

- Quarantine eradication in Adelaide, South Australia.
- The National Red Imported Fire Ant Eradication Program supported by governments nationally begins operations under new 10–year Plan on 1 July.



2019

- Brisbane Airport 2015 and Port of Brisbane 2016 **fire ant incursions declared eradicated**.
- New incursion from China found at Freemantle, Western Australia.
- A 5 km strip is added to the west boundary of the eradication area in South East Queensland in response to fire ants found in 2017-18.
- Biennial independent Efficiency and Effectiveness Review of the program makes recommendations to enhance program activities.

2020

- First field trials with new generation remote sensing surveillance cameras take place.
- Final report of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) review of the program's movement controls for organic materials supports the scientific principles behind these controls.

2021

- New incursion of fire ants from the United States found at the Port of Brisbane, Queensland.
- New independent review of the National Fire Ant Program was commissioned by the program's Steering Committee.

Message from the Chair

I am pleased to present the annual performance report for the National Fire Ant Eradication Program under its 10-year Eradication Plan 2017–18 to 2026–27 (the plan).

Impact of COVID-19

As fire ants are considered a category 1 restricted matter under the *Biosecurity Act 2014* (Qld), the program is an essential service that operated at full steam despite the worldwide coronavirus pandemic (COVID-19). The health and wellbeing of our staff and the community remained the highest priority. Office staff were able to work from home and rigorous hygiene initiatives, extra vehicles and other strategies were implemented for those who continued to work in the field. Other impacts included limited access to laboratory supplies needed by our science team and delays to research projects due to travel limitations and lockdowns. However, despite these challenges staff remained vigilant and focused on the program's mission, achieving great results.

Treatment this year

The program moved eradication treatment from Area 1 further east to Area 2 in June 2020. This financial year 180 505 ha received planned eradication treatment in parts of greater Ipswich and western Logan (Area 2), achieving 97% of planned eradication treatment. Planned and responsive treatment to contain fire ant populations before eradication took place over 125 086 ha, achieving 91% of the treatment target.

Whole-of-community response

We know we cannot eradicate fire ants without a whole-of-community response.

In addition to the legal obligation for any person in Queensland to report suspected fire ants to the program, we continue to encourage those not in eradication areas to help suppress the pest by self-treating their properties. This is an important part of helping to manage fire ants until the program can undertake eradication treatment in those areas. More than 2800 residential properties were treated as part of self-treatment activities this year.

This year the program surveyed both residents and businesses to better understand stakeholder knowledge of fire ants and their commitment to eradicating the pest. It was encouraging to learn that awareness of fire ants was high (76 to 92%) with 93% of those surveyed willing to follow recommendations that would assist fire ant eradication. We will continue to survey the community twice per year to gain behavioural insights to inform public communication and engagement activities, and collaborations.

Trialling new ways of doing things

Innovations to improve the efficiency and effectiveness of what we do are always high on the list of program priorities. This year final testing of the next-generation remote sensing surveillance technology (RSS) was completed. Aerial surveillance using RSS will enable larger areas of SEQ to be surveyed offering a more cost-effective method of achieving more surveillance. RSS will begin operationally in August 2021.

The program also used different treatment regimens in select areas to determine which combination of products will eradicate fire ants the fastest to aid future planning.

Research on treatment options in collaboration with The University of Queensland also continued with the scope of the project expanded from one to two different rain-stable bait possibilities. Bait viability when wet would increase treatment efficiency. This work is continuing.

A 'no more gaps' project was also launched to determine viable solutions to closing gaps in eradication treatment. These gaps are caused by concerns about the impact of bait on food crops, the inability to access difficult terrain, and refusals by landowners to access properties. Addressing these gaps is crucial to the success of our eradication efforts.

Biosecurity zone changes

Ten new suburbs in the Scenic Rim and Somerset Regional Councils were added to biosecurity zones under the Biosecurity Regulation 2016. Regular changes to the zones are important to help us control the spread of fire ants across and outside zones, particularly through the human-assisted movement of materials that can carry fire ants.

Program review

The program and the Steering Committee knew from the outset that treatment adjustments would be needed as we learn and adapt to one of the most challenging pests on this planet. After three years of the current eradication plan, we learned a great deal and it is clear the nationally-cost shared budget and schedule need to be revised if we are to achieve our objective by the original 2027 deadline.

The Steering Committee will engage independent experts to help us review our program based on our learnings. A review will help shape a revised response to the pest.

Budget

The Steering Committee approved an overspend of $1.4 million in 2020–21 to be recovered from the 2021–22 budget. This amount was required to fund unplanned additions to the 2020–21 treatment plan including significant detections, a substantial increase in the volume of responsive treatment, and a greater than forecast volume of surveillance activity directly related to this volume. The Queensland Government funded the final program actual overspend amount of $800 000 which resulted in a balanced budget position for 2020–21.

Our team

I would like to acknowledge the dedicated Steering Committee members, our program staff and the community who have chosen to join the fight against fire ants. I thank all for their continued hard work and vigilance, particularly during COVID-19 which brought new challenges for our staff both professionally and personally.

Striving for excellence, adapting to the unpredictability of fire ant activity, and trying new things are essential to the success of the program.

The task ahead cannot be achieved without you as we continue to work with the community to rid Australia of this invasive pest.

Wendy Craik AM
Steering Committee Chair
National Fire Ant Eradication Program
South East Queensland

2020–21 Key insights

Fire ants are highly invasive, adaptive and mobile. In 2020–21 we continued to deliver against the 10-year Eradication Plan, responding directly to challenges and adapting to emergent issues informed by science-based research and technical expertise.

Eradication treatment

Planned eradication treatment moved east into Area 2, which includes parts of greater Ipswich and western Logan, while activities in Area 1 and the Western Boundary moved to Phase 3: Clearance.

180 505 hectares treated
as part of planned baiting of eradication areas

97% of target
for 2020–21

Containment activities

Fire ant surveillance
33 679 hectares surveyed
as part of fire ant containment including clearance activities

128% of target
for 2019–20

Community reports
15 416 reports
of suspect fire ants

48% increase
for 2019–20

Containment treatment
125 086 hectares treated
as part of planned baiting of suppression areas[2]

91% of target
for 2020–21

Compliance checks
991 checks
of industries dealing with materials that can carry fire ants, for 2020–21 including soil, hay and other organic products

58% of target
for 2020–21

Significant detections
11 detections
of fire ants identified outside the program's operational area

175% increase
for 2020–21

Behavioural insights

A survey of key stakeholders this year showed:

Residents

76%
were aware of fire ants

61%
knew about the National Fire Ant Eradication Program

35%
had checked their yard for fire ants in the last 12 months

66%
of those who received treatment by the program were satisfied with the treatment

Businesses

92%
had a very high awareness of fire ants

83%
knew about the National Fire Ant Eradication Program

52%
had checked their workplace for fire ants in the last 12 months

79%
who received treatment by the program were satisfied with the treatment

See page 36 for more stakeholder insights.

Above: Businesses have a very high awareness of fire ants and know about the program.

Map of key activities 2020–21

This map provides the location of key fire ant management activities referenced in this report.

Activities included eradication and containment treatment, community self-treatment projects in areas currently not undergoing eradication treatment, and the trial of different treatment options aimed at determining which treatments will destroy fire ant populations the fastest.

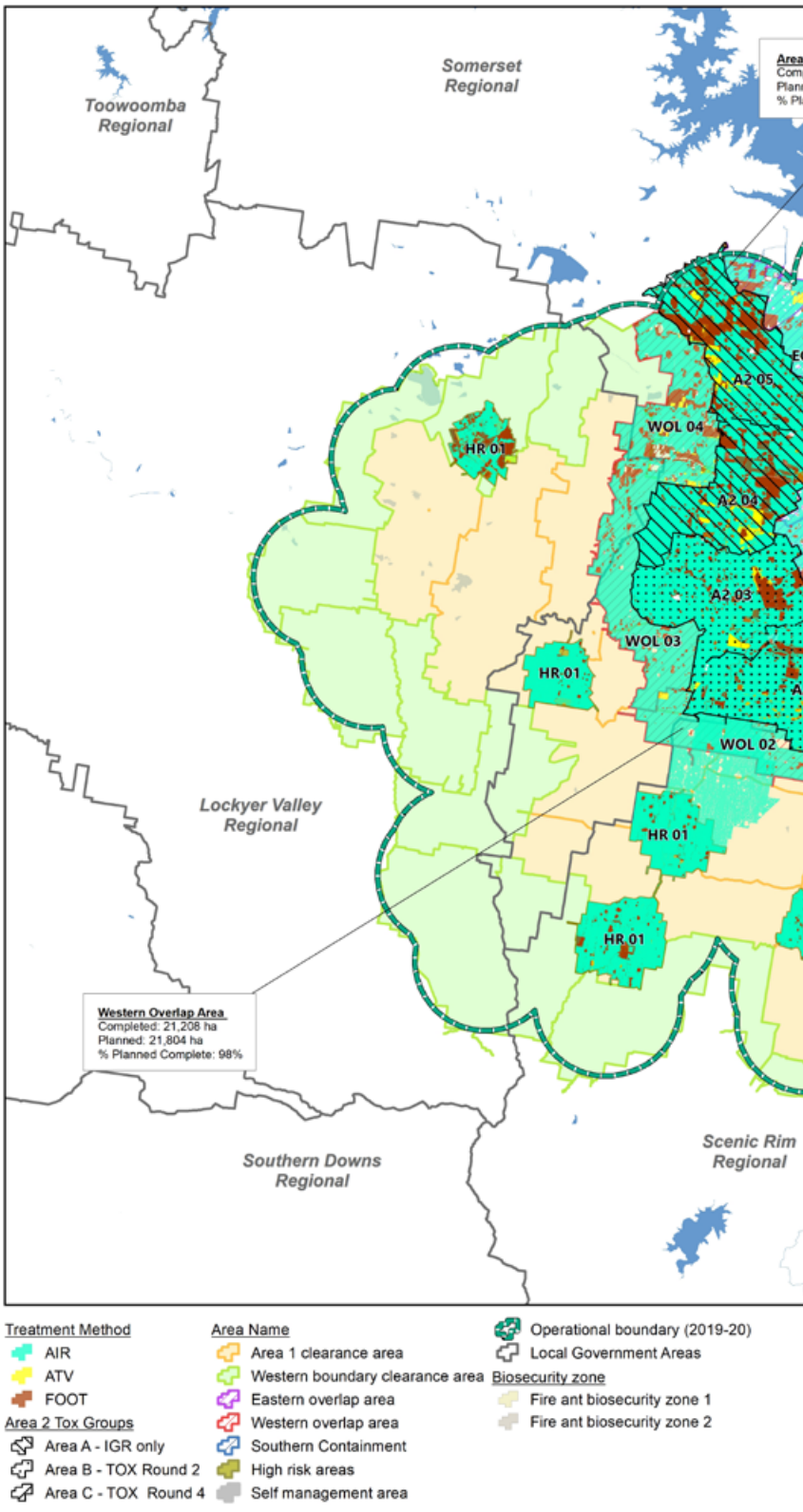
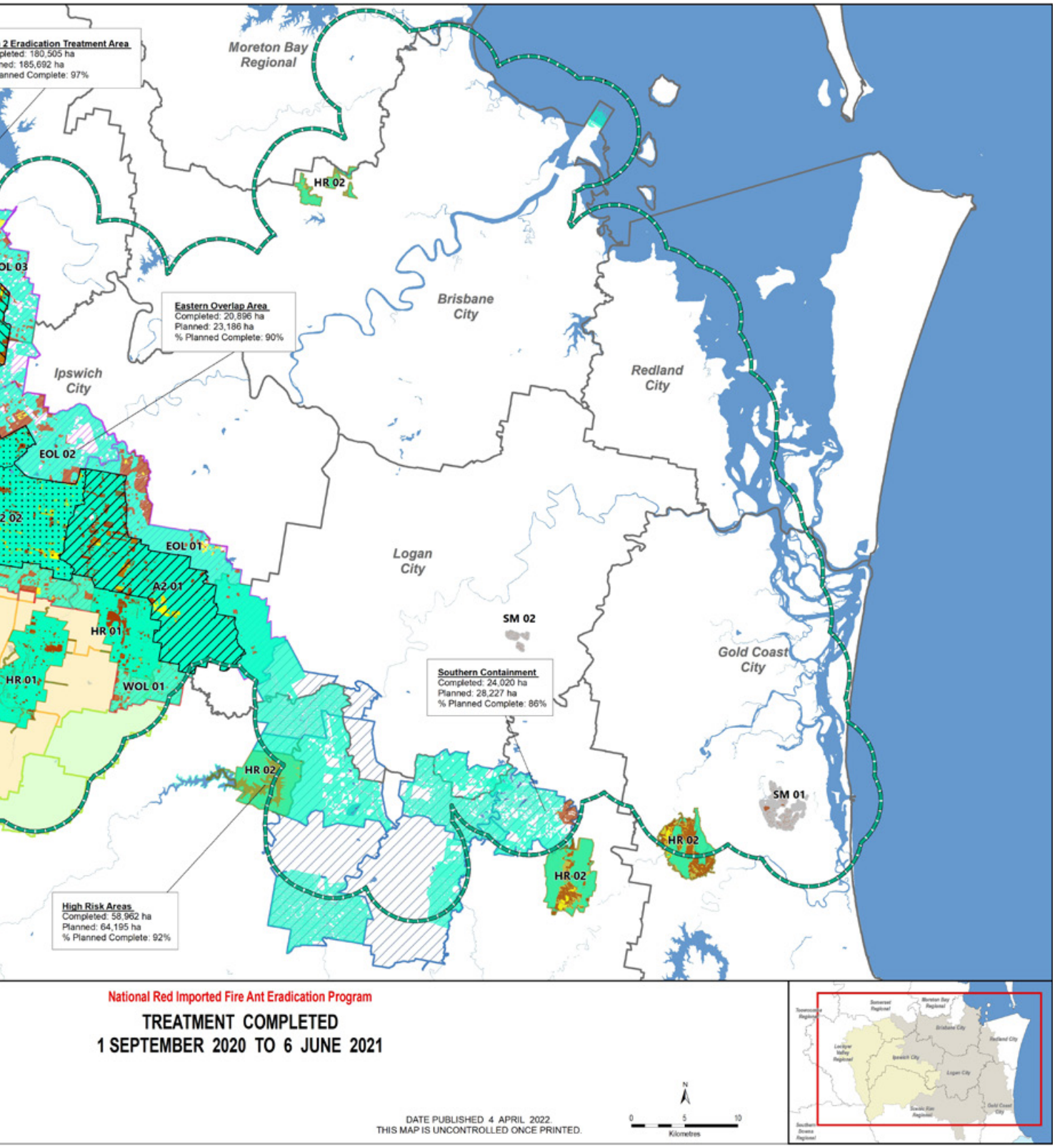


Figure 3: Map of key activities 2020–21



Eradication

In the 2020–21 financial year, planned eradication reached an important milestone for the program by moving from the Lockyer Valley, Scenic Rim and parts of Ipswich (Area 1 and the Western Boundary), east to new parts of greater Ipswich and western Logan (Area 2).

Planned treatment progress

In line with the program's 10-year Eradication Plan, planned eradication treatment moved eastwards into Area 2 (Figures 2 and 3), which includes parts of greater Ipswich and western Logan, while activities in Area 1 and the Western Boundary moved to Phase 3: Clearance.

With multiple rounds of treatment included, the program delivered planned eradication treatment across 180 505 ha out of a planned 185 692 ha in 2020–21, achieving 97% of the planned eradication treatment target from September 2020 to June 2021.

To achieve eradication all identified areas need to receive eradication treatment. Activities such as the 'no more gaps' initiative where the program works with the community to find solutions to treating gaps in treatment are crucial to this goal.

Table 2: Planned eradication treatment 2020–21

Round 1	Number of hectares			Round 2	Number of hectares		
Location	Planned year total	Actual	%	Location	Planned year total	Actual	%
Area 2	46 423	45 227	97	Area 2	46 423	44 681	97
Round 3	**Number of hectares**			**Round 4**	**Number of hectares**		
Location	Planned year total	Actual	%	Location	Planned year total	Actual	%
Area 2	46 423	45 314	98	Area 2	46 423	45 283	98

New treatment regimen trialled

An alternative treatment strategy was used for Area 2 to explore options that could expedite the eradication of fire ants under the program's 10-year Eradication Plan. Area 2 received four rounds of intensive treatment in one year in contrast to the two to three rounds of treatment per year for two to three years used to treat Area 1 and the Western Boundary.

Area 2 was also divided into three distinct treatment areas (Figure 3 Area 2 Tox Groups) with different treatment regimens used to identify the most effective and fastest way to eradicate fire ants.

Area A—received four rounds of insect growth regulator (IGR) bait, which is intended to make the fire ant queen infertile, and the nest die out due to starvation.

Area B—received IGR bait for three rounds initially (targeting the queen), with a fast-acting insecticide bait used to target worker ants in the fourth round to expedite worker death and nest starvation.

Area C—received IGR bait initially, to make the queen sterile, followed by a fast-acting insecticide bait in the second round to kill the worker ants, and then a further two rounds of IGR to maintain the queen's sterility if she has survived.

Monitoring nests were visited monthly and assessed for the level of fire ant activity. By the end of June 2021, only Area A (4 x IGR) showed activity, with live fire ants observed at 6% of the 322 monitoring nests. Due to delayed effects of IGR treatments, these nests may yet succumb to this treatment. None of these nests were highly active.

Continued monitoring over the remainder of the 2021 winter season will assess if the strategies of applying four bait treatment rounds in a single season (with some including a fast-acting insecticide bait) have achieved the objective of eradication in a single treatment season or if further rounds will be required.

No more gaps

Not undertaking fire ant treatment of food crops due to Australian Pesticides and Veterinary Medicines Authority (APVMA) permit conditions and/or grower concerns is the primary cause of treatment gaps in Area 1 and the Western Boundary (Table 3).

Other gaps are due to landholder refusal of entry, the inability to access difficult terrain and insufficient resourcing of ground teams.

This year, the program investigated the feasibility of economic approaches to dealing with crop-related gaps and the use of drones to access difficult terrain. A proof of concept for drones began to investigate the validity of their use for bait application in inaccessible areas and aerial buffering activities.

Work with the APVMA to vary permit conditions associated with treating food crops also continued. Trials testing the impact of bait applications on maximum residue levels in crops will begin in August 2021, to support APVMA permit changes to ensure that no planned treatments are missed due to cropping.

A specific allocation was also included in this year's program budget to address the resourcing of ground teams.

What treatments are used?

Fire ant bait is made up of small pieces of corn grit (about 1–3 mm in size) soaked in soybean oil with an active ingredient. The bait is not harmful to humans, pets or livestock.

The types used depends on the location of the nest:

- **Fast-acting insecticide bait**—contains indoxacarb or a combination of hydramethylnon and pyriproxyfen, active ingredients commonly found in cockroach baits or flea collars
- **Insect growth regulation bait (IGR)**—containing S-methoprene or pyriproxyfen, which are widely used in mosquito control programs or dog and cat flea collars (pictured).

Bait is distributed with a hand-held spreader, a utility-terrain vehicle or a helicopter depending on the size of the property. The maximum effect is achieved if baited ground remains undisturbed and is not watered, or rained on, for at least 24 hours.

Direct nest injection (DNI) involves flooding the fire ant nest and ant tunnels with a registered insecticide known as fipronil. Fipronil is effective at very low application rates and is often used in termite control programs. After DNI, the maximum effect is achieved if a one-metre area around each mound remains undisturbed for at least seven days.

Above: IGR bait is soybean oil and an active ingredient mixed with corn grit.

Other treatment innovation

BioClay and gene silencing

A collaboration with the Queensland Alliance for Agriculture and Food Innovation (QAAFI) at The University of Queensland (UQ) was established in early 2019, on the potential for BioClay nanoparticles to be used in the control of fire ants. Specifically, the project plan during 2019–2020 was to investigate if nanoparticles, as a platform for delivering double-stranded RNA (dsRNA)–mediated gene silencing technology, caused mortality in fire ants. However, the project was significantly impacted by shutdowns (since March 2020) due to COVID-19, with the key experiments delayed as UQ moved to work from home with critical maintenance only onsite.

This year, a variation and extension were agreed between UQ and the Department of Agriculture and Fisheries (Qld) for the bait and gene silencing project due to the impacts of COVID-19. This included an extension in time (from July 2020 to July 2021), variation in scope (to include two different rain-stable bait options instead of one) and funding (an additional $50 000 over the extra 12 months).

Challenges this season

While ground treatment commenced on time, aerial treatment started two weeks later than usual due to the development of an updated aerial safety plan in consultation with the Department of Agriculture and Fisheries Aviation Committee. Unfavourable climatic conditions, such as wet weather that makes bait treatment less effective, also resulted in 92.5 lost treatment days during the year.

Treatment delivery was rescheduled to accommodate delays and enable the program to achieve treatment targets by the end of the season. This included incorporating a 40% contingency planning to account for lost time during the season and a nine-day fortnight for aerial treatment on weekends where needed.

Gaps in the treatment—small sub areas (properties or parts of properties) that could not be treated—remained an issue in 2020–2021. This year they accounted for 2–5% of the treatment area (Table 3). Each gap increases the chance that fire ants persist in the area, and over time the spread of fire ants from gaps will compromise the fire ant-free status of nearby areas.

Although challenging, the program is actively addressing the underlying causes of these situations by:

- seeking changes to APVMA permits, particularly for cropping properties
- enforcement with police escorts when access is unreasonably refused
- customising ground-based treatment and assigning additional resources toward resolving gaps
- closer monitoring of environmental conditions to optimise treatment times.

Despite these efforts, challenges such as the treatment of fire ants on organic farms and treating certain crops remain an issue. Further scientific research and operational developments are underway to resolve these (see p17).

Table 3: Treatment gaps in 2020–21 and reasons for gaps

Treatment gap category	Cause of treatment gap	Total gaps in Area 1/WB (ha)*	Total gaps in Area 2 (ha)
Not visited	Rain/low temperatures prevents effective treatment as planned and/or insufficient staff to complete within the time available.	111	2195
Refusal/safety/ access issues	Landholders refuse treatment. Safety issues such as dogs, locked gates, extremely long grass, or tenants threatening staff with violence prevent treatment, or sites are partially completed.	340	883
Poultry	Poultry must be separated from fire ant baits as per APVMA permits. Some free-range chickens were not penned in time for planned treatment, and/or treatment may not be comprehensive.	21	88
Cropping	Unable to treat certain crops under APVMA permits.	971	451
Horses and livestock	Aerial treatment can spook horses and livestock - causing them to injure themselves. Some landholders refuse all or partial treatment.	60	97
Unsuitable habitat	Land that was unpassable, i.e., flooded, road parcels.	326	922
Other	Slivers left from incomplete aerial treatment, sites reserved for science experiments, gaps left from ground treatment before (rather than after) aerial treatment.	140	553
Total		**1969**	**5190**
% of the total planned area		**4.5%**	**2.8%**

* Western Boundary

Containing the spread

The program has succeeded in keeping fire ants contained to South East Queensland, but this requires constant vigilance. Tactics include strict monitoring of operational boundaries, stamping out detections of importance, planned suppression treatment, and working alongside the community to manage the risk of fire ant movement.

Fire ant surveillance

The surveillance season commenced in late June 2020 and concluded at the end of August 2020. A total of 33 679 ha was surveyed including both planned and responsive surveillance throughout the year. In most cases planned surveillance targets were exceeded, with the exception of clearance areas—Area 1 and the Western Boundary—where surveillance was suspended to focus on treatment targets.

Clearance surveillance using new generation remote sensing cameras mounted in helicopters will begin operationally in the 2021–22 surveillance season.

Figure 7 shows all surveillance done this year.

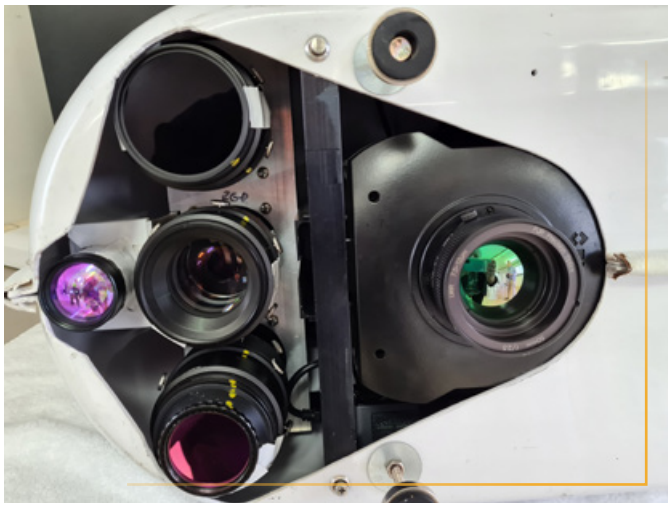
Table 4: Surveillance progress—planned and responsive—2020–21

Surveillance task*	Completed area (ha)	Planned area (ha)
Sentinel	1 624	1 570
Clearance	8 986	13 250
Targeted	3 753	2 630
Responsive	19 316	8 960**
Total	**33 679**	**26 410**

Remote sensing surveillance project

Remote sensing surveillance (RSS) enables the detection of fire ant nests over large areas by using helicopters equipped with a purpose-built camera, including a thermal infrared band, and self-learning algorithms.

This year, the RSS project largely involved final testing and activities to ready the technology for operational use. This included contract negotiations with the imagery provider and preparation of the Aerial Remote Sensing Surveillance Specific Task Analysis and Risk Assessment (STARA) specifying the safety precautions required for aerial imagery capture. It also included the selection of flight regions and the development of standard operating procedures for field validation processes.



Above: Remote sensing surveillance device.

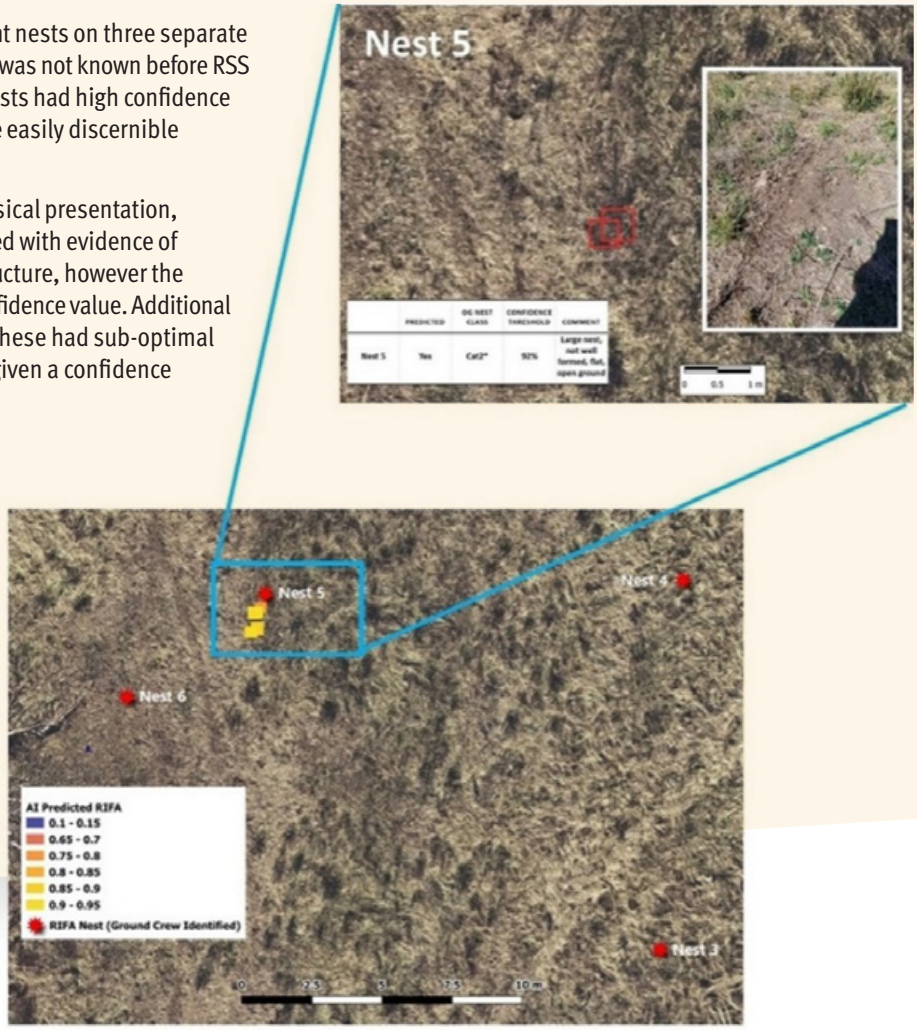
*Sentinel surveillance—planned surveillance on sites outside and just inside the operational boundary; Clearance surveillance—planned surveillance on sites within previous eradication treatment areas: Area 1 and Western Boundary; Targeted surveillance—planned surveillance on sites within 5 km of the operational boundary which had the previous infestation; **This refers to a notional allocation for responsive surveillance around new detections based on previous years, for planning purposes only.

Coulson remote sensing surveillance test

Remote sensing surveillance (RSS) was used around the Coulson detection of importance site to test the accuracy of response protocols and the technology as a delimitation tool. This data was then used to direct field crews for surveillance.

The test correctly predicted three fire ant nests on three separate sites where the existence of these nests was not known before RSS surveillance. The correctly predicted nests had high confidence scores (greater than 80%) having large easily discernible mound structures.

A single nest had a 'sub-optimal' physical presentation, described as large but not well-formed with evidence of previous disturbance to the nest structure, however the algorithm awarded it with a high confidence value. Additional nests were located by field crews. These had sub-optimal identifying features and were not given a confidence score by RSS.



Right: Remote sensing surveillance images.

eDNA analytical tools

The use of environmental DNA (eDNA) analytical tools in monitoring and surveillance activities is being developed in consultation with James Cook University, the University of Canberra and the Australian Government's Department of Agriculture, Water and the Environment Biosecurity Innovations Team.

An analytical method is being developed for detecting the presence of target-specific DNA from several invasive ant species. This includes fire ants in soil and/or water samples taken from previously infested habitat, habitat vulnerable to invasion or water bodies adjacent to potentially infested farmland. The program will assist in proof-of-concept research for the real-world application of a previously developed fire ant-specific eDNA assay. If successful, this technology may be a beneficial addition to existing surveillance methods and tools.

Right: Public reports of fire ants are often treated using fast acting insecticide via direct nest injection.

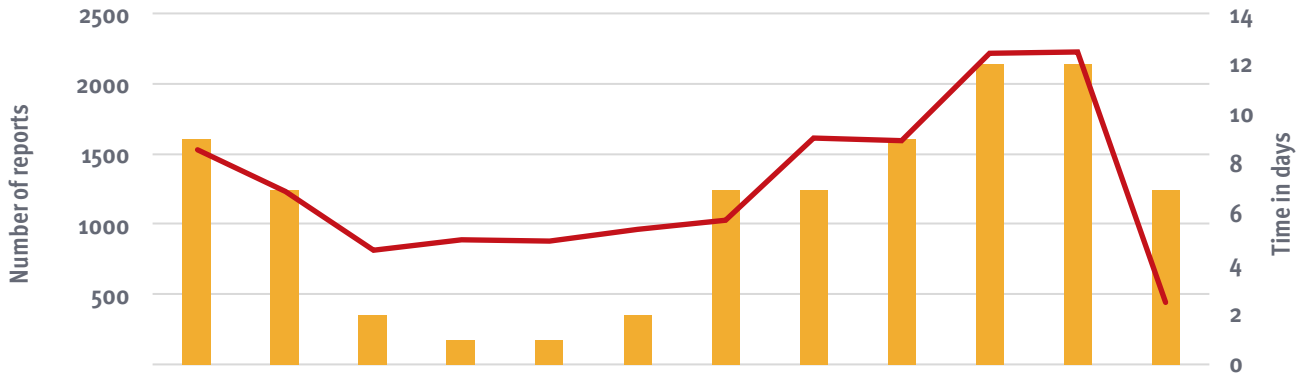
Responsive treatment

The community continues to be a vital information source for the program by identifying suspected fire ant nests in their backyards and neighbourhoods. This year there were 15 416 suspect fire ant reports. The maximum days to treatment was 12.

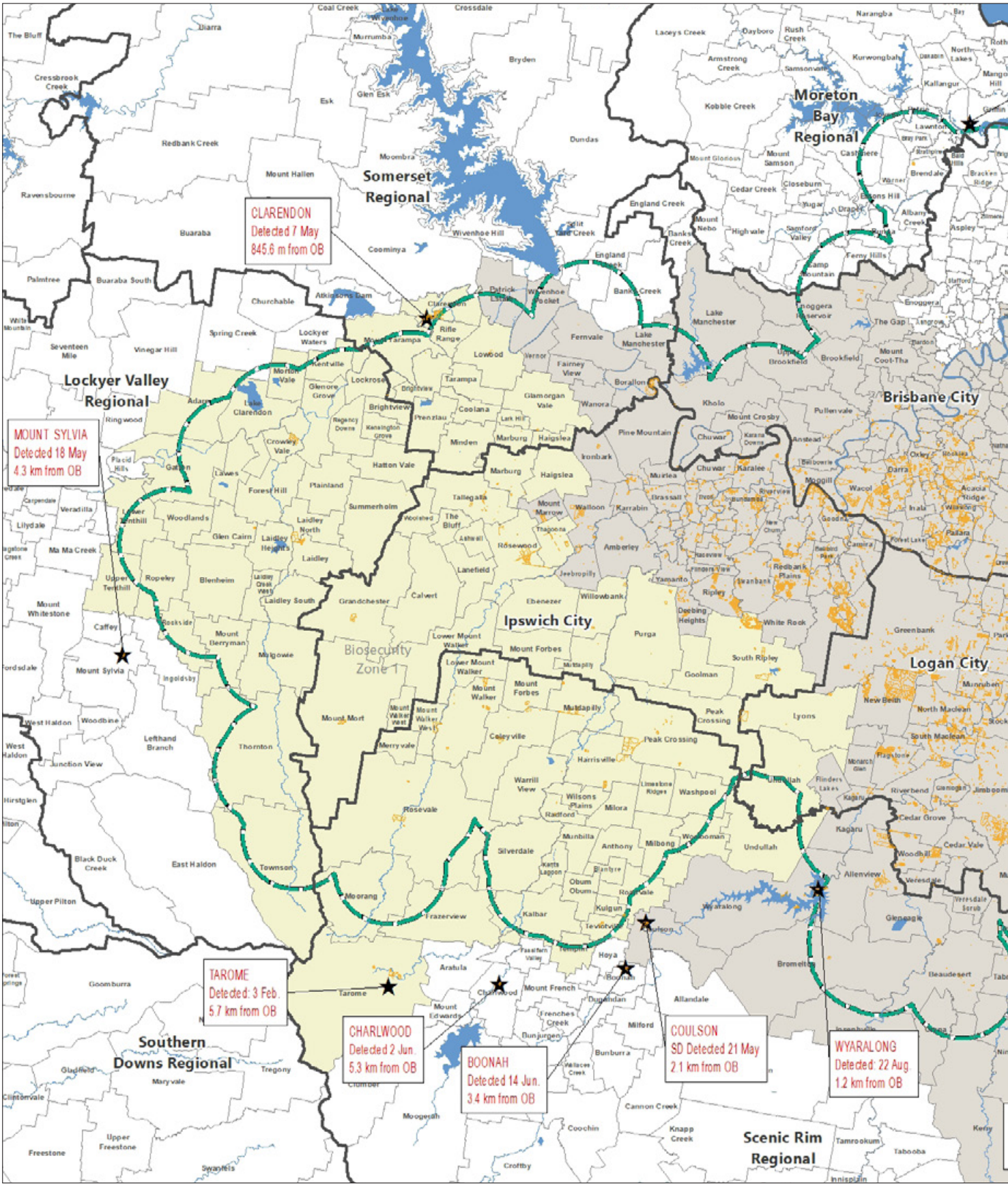
Responsive treatment is prioritised according to the level of risk. Detections presenting a high risk to public safety (such as those in schools, parks and sporting grounds) are given the highest priority along with fire ant finds outside or near the program's operational boundary (see Detections of importance on p26 and Figure 5).

In May 2021, the Queensland Ombudsman released a report on the program's response times to public reports of fire ants. It identified the average time to complete treatment improved significantly throughout 2020. In the 12-months (September 2018 to September 2019), the monthly average time to treat fire ants was greater than 40 days for nine months. However, the time to complete treatment dropped significantly from late 2019 and in 2020 with the average time to complete treatment consistently less than 10 days. This was despite a surge in reports received in February and June 2020. The improved timeframes were due to a series of innovations including changes to the treatment regimen, adjusting the structure of the fire ant response teams and digital enhancements.

Figure 4: Public reports and maximum days to direct nest injection (DNI) treatment 2020–21



	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21
Max, days to DNI	9	7	2	1	1	2	7	7	9	12	12	7
Total reports	1531	1227	809	889	876	961	1029	1613	1592	2219	2227	443


CLARENDON
Detected 7 May
845.6 m from OB
MOUNT SYLVIA
Detected 18 May
4.3 km from OB
TAROME
Detected: 3 Feb.
5.7 km from OB
CHARLWOOD
Detected 2 Jun.
5.3 km from OB
BOONAH
Detected 14 Jun.
3.4 km from OB
COULSON
SD Detected 21 May
2.1 km from OB
WYARALONG
Detected: 22 Aug.
1.2 km from OB
Biosecurity Zone 1
Somerset Regional
Moreton Bay Regional
Lockyer Valley Regional
Brisbane City
Ipswich City
Logan City
Southern Downs Regional
Scenic Rim Regional

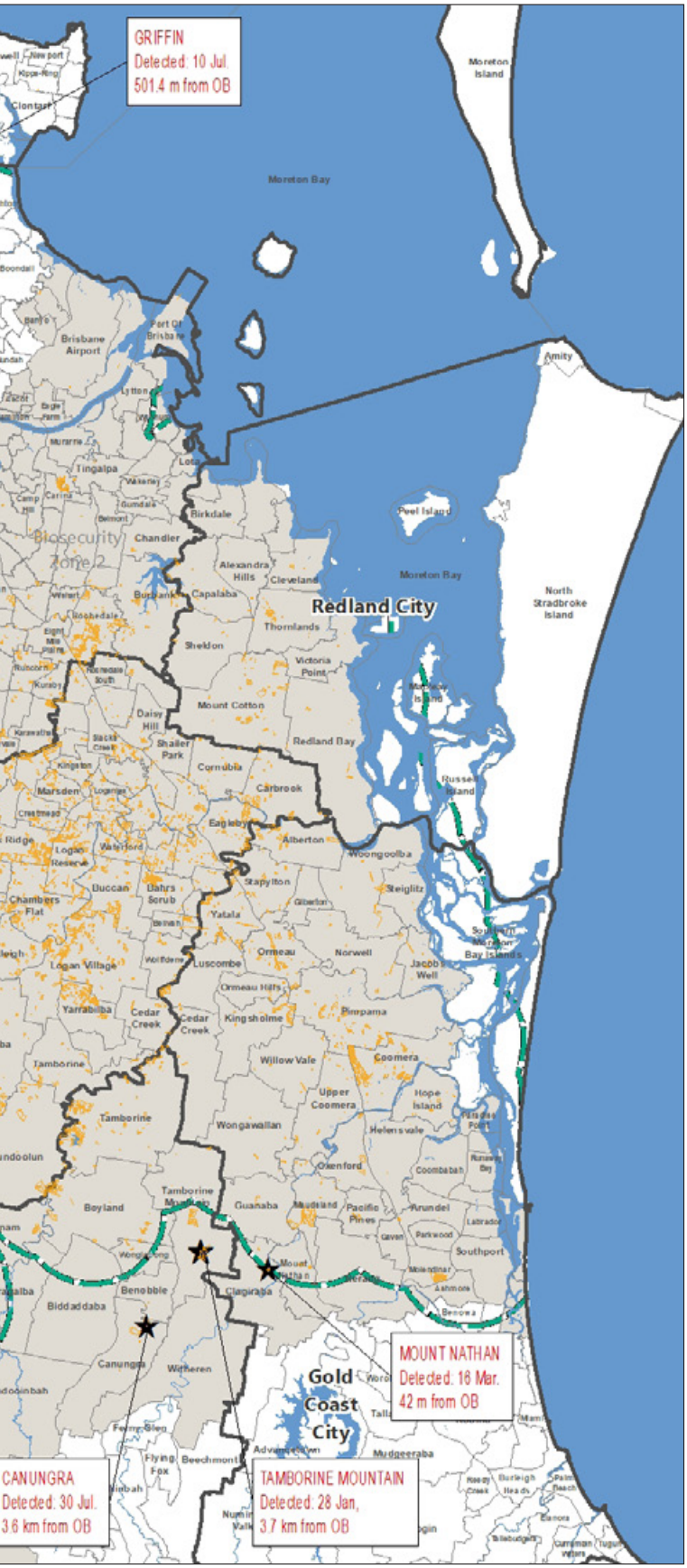


Figure 5: Significant detections and responsive treatment 2020–21

Detections of importance

Fire ant detections of importance pose a heightened risk to the achievement of the program objectives and immediate action is taken to destroy nests to reduce the risk of fire ants establishing and spreading. This can also include initiating ongoing surveillance around these sites. Detections of importance are detections found outside the operational boundary (significant), detections up to five kilometres inside the operational boundary (boundary) and detections located within areas that are currently undergoing clearance and freedom activities (clearance area).

The program alerts industry and residents in the areas with significant detections via direct notifications, roadside signage, and targeted social media campaigns. Each new significant detection is also reported to the program's cost-shared partners and the Queensland Minister for Agricultural Industry Development and Fisheries.

Genetic testing of these detections this year confirmed they were related to the existing South East Queensland infestation and not new fire ant incursions into Australia.

The high number of significant detections in 2020– 2021 is of concern (Figure 5 and Table 5). Although investigations are ongoing, it is suspected that most of these detections were due to the human-assisted movement of fire ants. This suggests that existing controls for the movement of fire ants may not adequately restrict movement.

It may also indicate the fire ants have already been established beyond the known limits of fire ants in South East Queensland, however, further investigation is required to determine the true impact of these detections.

Table 5: Fire ant detections of importance 2020–21

Type*	No.	Location/s
Significant	11	Griffin (1), Canungra (1), Wyaralong (1), Tamborine Mountain (1), Tarome (1), Mount Nathan (1), Clarendon (1), Mount Sylvia (1), Coulson (1), Charlwood (1) and Boonah (1)
Boundary	108	Allenview (7), Arundel (1), Beaudesert (7), Birnam (5), Boyland (16), Bracken Ridge (1), Brightview (1), Bromelton (2), Cryna (2), Gleneagle (2), Guanaba (3), Josephville (1), Kagaru (1), Kholo (6), Lawnton (1), Lowood (2), Lyons (1), Maudsland (3), Mount Nathan (6), Mundoolun (9), Pine Mountain (1), Tamborine Mountain (4), Undullah (2), Upper Kedron (2), Wongawallan (3), Wonglepong (5), Brendale (2), Veresdale Scrub (1), Clarendon (2), Flinders Lakes (2), Rifle Range (1), Tabragalba (1), Tamborine (2) and Teviotville (3)
Clearance area	73	Lockrose (2), Crowley Vale (6), Rosevale (12), Radford (1), Mount Walker (11), Mount Walker West (2), Harrisville (8), Peak Crossing (5), Laidley (1), Coleyville (9), Brightview (1), Grandchester (2), Mutdapilly (2), Warrill View (1), Wilsons Plains (1), Thornton (1), Kulgun (1), Glen Cairn (1), Mount Forbes (1), Mount Mort (2), Peak Crossing (1) and Teviotville (2)

*Significant = A new detection found outside the program's Operational Area boundary. Boundary = A new detection found up to 5 km inside the program's Operational Area boundary. Clearance area = Former eradication area undergoing surveillance and residue ant search and destroy activities.

Containment treatment

Containment treatment is used to help contain the spread and establishment of fire ants beyond the current South East Queensland infestation. This may be in the form of planned containment (rounds of IGR bait treatment) or responsive treatment. In 2020–21, Areas 2–4 received planned containment treatment in areas overlapping Area 1 and the Western Boundary, along the southern operational boundary, and areas with high risk and high density fire ant infestation.

After the treatment season, 89% of round 1 planned containment treatment was achieved, 97% of round 2, 97% of round 3, and 86% of round 4. Overall, 91% of the planned containment treatment was completed. The ability to complete planned containment treatment was impacted by the prioritisation of the eradication treatment not done as scheduled in Area 2. This was mostly due to inclement weather conditions having preventing planned treatment.

Responsive treatment was completed in response to reports of fire ants from the public and fire ant detections of importance (see Responsive treatment on p23 and Detections of importance p26).

Table 6: Planned containment (suppression) treatment progress at 30 June 2021

Round 1	Number of hectares			Round 2	Number of hectares		
Location	**Planned year total**	**YTD Actual**	**%**	**Location**	**Planned year total[1]**	**YTD Actual**	**%**
Western Overlap	21 804	21 208	98	Western Overlap	NA	NA	NA
Eastern Overlap	20 030	17 772	91	Eastern Overlap	3 156	3 124	99
Southern Suppression	28 227	24 020	86	Southern Suppression	NA	NA	NA
High Risk	23 737	20 079	82	High Risk	17 628	16 993	97
Total	**93 798**	**83 079**	**88**	**Total**	**20 784**	**20 117**	**97**
Round 3	**Number of hectares**			**Round 4**	**Number of hectares**		
Location	**Planned year total**	**YTD Actual**	**%**	**Location**	**Planned year total[1]**	**YTD Actual**	**%**
High Risk	17 628	17 053	97	High Risk	5 202	4 837	86
Total	**17 628**	**17 053**	**97**	**Total**	**5 202**	**4 837**	**97**

Preventing human-assisted movement

A crucial part of containing fire ant infestations and preventing reinfestation is reducing the risk of the human-assisted movement through high-risk organic materials. These include soil, hay, mulch, manure, quarry products, potted plants and turf.

Fire ants are considered a category 1 restricted matter under the *Biosecurity Act 2014* (Qld) with the movement of high-risk material regulated under the Act. Fire ant biosecurity zones are set up to provide the foundation for controlling the movement of these materials within and across these zones.

Biosecurity zone changes

On 7 June 2021, 10 new suburbs in the Scenic Rim and Somerset Regional Council local government areas were added to fire ant biosecurity zones under the Biosecurity Regulation 2016.

The boundaries of South East Queensland's fire ant biosecurity zones are regularly updated as a key part of our 10-year Eradication Plan to help prevent the spread of fire ants into areas that have already received eradication treatment, out the fire ant eradication boundary and to reflect where fire ants have recently been found (Appendix C).

CSIRO supports movement controls

In November 2020, a Commonwealth Scientific and Industrial Research Organisation (CSIRO) independent review of the program's movement controls for materials that can carry fire ants supported the scientific principles behind these controls. The scientific principles are used to develop risk mitigation strategies to ensure that the risk of moving materials with a viable fire ant colony is acceptably low. This informs the program's movement controls to prevent the human-assisted spread of fire ants.

Reducing risk through compliance

The *Biosecurity Act 2014* (Qld) outlines compliance requirements for the management of materials that can carry fire ants including the storage, treatment and movement within and across fire ant biosecurity zones. Due to the high number of businesses and individuals moving materials in, between, and outside the zones, compliance activities are prioritised based on risk, resulting in the different industries being targeted each quarter based on a range of factors.

These businesses fall into several broad industry types including landscaping services, hay producers, poultry farms, earthmovers, waste facilities, civil construction, builders, developers and quarries. The total number of operators within these industries totals approximately 7000. The program completed 991 compliance audits across 14 industry types in 2020–21.

> Of businesses audited, most (866) were compliant with 12% (126) non-complaint. A total of 18 Biosecurity Orders and 6 Penalty Infringement Notices were issued.

These results suggest gaps in industry compliance need to be addressed. Some industries, such as building/construction, consistently showed high compliance despite the large number of audits. However, other industries—such as nurseries and hay producers—showed compliance levels are much lower. The program is engaging with relevant industry bodies to understand barriers to compliance and make the necessary communications and/or regulatory changes required to help prevent fire ants from being moved by these industries.

Table 7: Compliance activities 2020–21

Industry	No. audits	No. Non-compliant	Industry	No. audits	No. Non-compliant
Nursery	253	56	**Quarry**	14	1
Hay producer	182	41	**Pool builder**	5	1
Earthmoving	293	10	**Produce agent**	4	1
Landscaping supplier	72	9	**Plumber**	14	0
Building/construction	177	3	**Poultry**	13	0
Turf	24	3	**Waste management**	11	0
Tree services	51	2	**Housing development**	5	0

Confirming treatment efficacy for nurseries

Conversations regarding movement controls for nursery products resulted in several questions from interstate stakeholders regarding the efficacy of the application rate of cyfluthrin recommended in APVMA PER12073. The availability of this product was increasingly restricted due to the advent of new generation alternatives; therefore, a new permit application was submitted for beta-cyfluthrin to ensure an alternative product was available. In response to the questions regarding the efficacy of the original product, a short laboratory bioassay was run to confirm the application rate of beta-cyfluthrin, and the permit application was amended to allow a higher application rate. This will provide greater assurance of total queen mortality in treated nursery stock.

Improving industry options for treatment

Discussions are underway with the industry about the use of a single application of bifenthrin, with a substantially reduced embargo period, to improve fire ant control for commercial turf farms. A trial conducted to assess this treatment approach indicated it will provide high-level protection against fire ants and better align with industry practices. A full report, detailing the outcomes of all other chemical options, is in development.

Above: The program works with industry to reduce the risk of human-assisted movement through high-risk organic materials.

Population genetics monitoring

The genetics of the fire ant population are key indicators as to whether the program's eradication and containment activities are working.

A reduction in genetic diversity puts a strain on the survival of fire ants and reduced diversity and fragmentation of populations indicates the program's efforts are effective. In contrast, increases in genetic diversity suggest changes in eradication tactics may be needed. The program monitors:

- if fire ants found are part of an existing infestation source or a new one
- whether the populations are showing genetic bottlenecks, which demonstrates the 'health' of the infestation.
- what social form (polygyne or monogyne) a particular nest takes, which guides what fire ant treatment is required, and
- how nests may relate to each other and other spread patterns.

Table 8 identifies the number of ant samples analysed and the proportion of polygyne sites for each quarter of 2020–21.

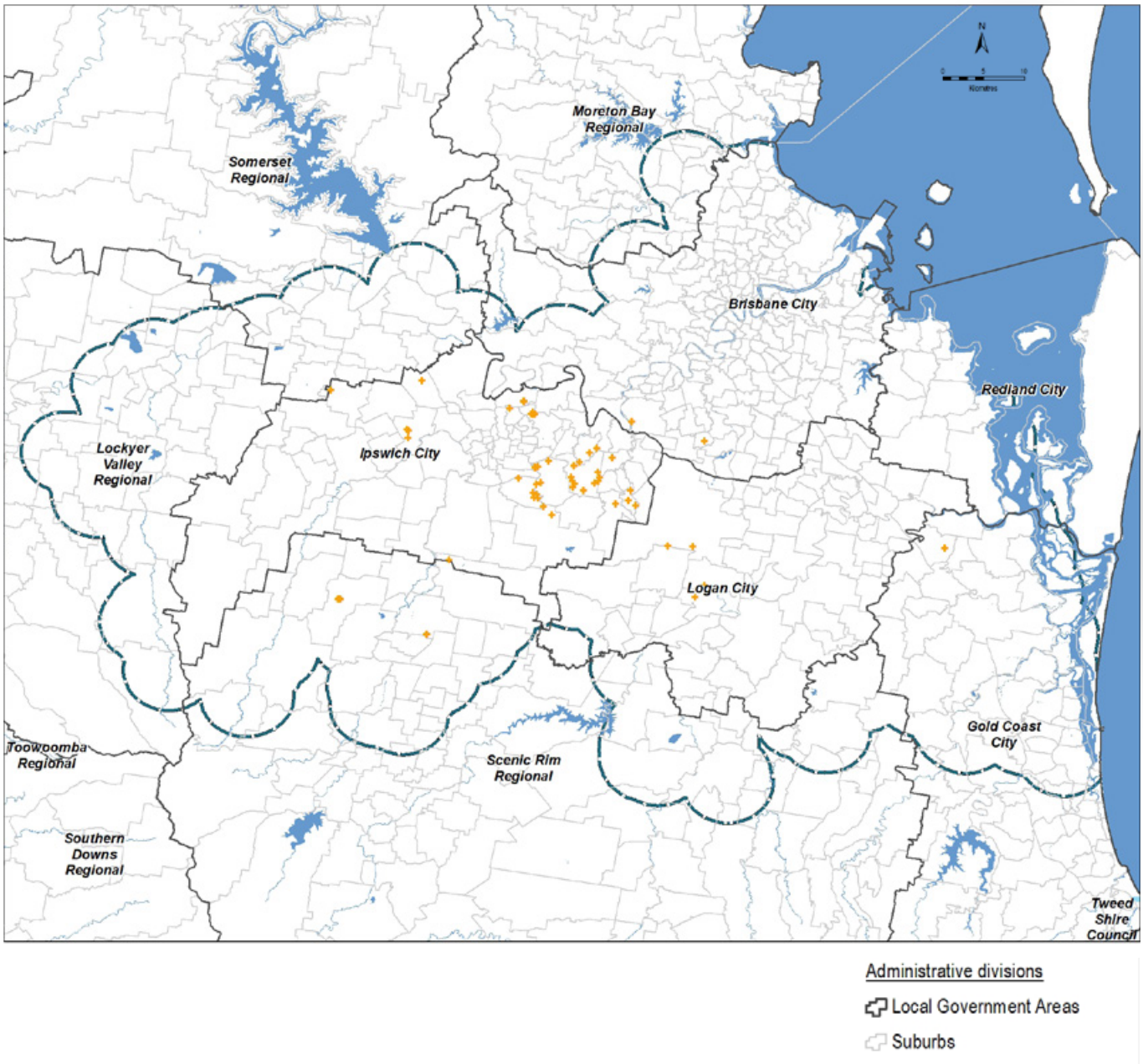
On average, 0.96% were polygyne (Figure 6). A backlog of 3172 samples was still to be analysed as of 30 June 2021 due to the difficulty in sourcing required laboratory consumables during the COVID-19 pandemic.

Table 8: Ant samples analysed in 2020–21

Quarter	No. ant samples for analysis	Proportion polygyne sites
2020–21 Quarterly average	911	1.25%*
1	1622	1.19%*
2	2929†	1.1%*
3	3418†	0%
4	177	3

*Q1 and Q2 values have been updated as of the end of July 2021 as further samples in the backlog have been tested since previous reports. ^Excludes samples found to have <15 ants, which are not suitable for analysis. †The number of ant samples to be analysed may increase as there is a backlog currently being decontaminated/processed; thus, exact numbers are not available at this time.

Figure 6: Polygyne infestation locations in 2020–21



Polygyne treatment trial

A trial conducted in 2020 looked at ways to eradicate localised polygyne infestations within a single treatment season. Three treatment regimens were selected for further evaluation and field application within the 2020–21 treatment season against known polygyne infestations in Area 2. The treatments were:

- Amdro 2.5 kg/ha + Distance 2 kg/ha blend
- Advion 1.7 kg/ha + Distance 2 kg/ha blend
- Advion 1.7 kg/ha only.

Commencing January 2021, all known polygyne sites in Area 2 (17 sites, approximately 650 ha total) started to receive targeted bait treatments with one of the above regimens. This was in addition to any broadscale bait treatment rounds already scheduled as part of the eradication activities in Area 2.

The plan was to apply these additional bait treatments every 4–8 weeks up to a total of 3–4 times before the end of the treatment season in June 2021. Of these 17 sites, three already showed no ant activity by January 2020 and, to date, it appears that the standard baiting regime may have been effective at all sites.

Of the remaining 14 sites where additional polygyne bait treatments were applied, all received at least two additional rounds of bait, and all but four received the full complement of 3–4 additional rounds. For those sites treated by ground-based methods (foot/UTV), over half of these (93 ha total area) received the maximum of four additional treatment rounds. One large site (550 ha) requiring aerial treatment could only receive additional polygyne treatments twice due to scheduling challenges related to the completion of the main baiting rounds over Area 2.

To confirm if polygyne ants have been eradicated from all these 17 sites in Area 2, targeted surveillance and monitoring will continue over the 2021 winter.

Above: Polygyne treatment trial at Ebenezer, Queensland.

Clearance and freedom

The 2020–21 year saw the program move to Phase 3 search and clear (clearance) activities in Area 1 and Western Boundary; to locate and destroy any residual ants in these former eradication treatment areas. Intensive eradication treatment will then progress east into parts of greater Ipswich and western Logan (Area 2) in 2021–22.

> A total of 8 986 ha of a planned 13 250 ha of clearance surveillance or 68% of the target was achieved this year. The target was not reached due to the decision to focus on completing treatment targets.

Clearance surveillance activities are prioritised based on a risk map that was developed from biological and operational criteria. Specifically, the map combines a spatial and mathematical model to determine which areas within Area 1 and Western Boundary eradication areas have the highest probability of infestation.

In February 2021, an evaluation of current clearance surveillance conducted in Area 1 and Western Boundary could not conclude these areas were free from fire ants. However, results indicated the clearance goal was still achievable with continued surveillance and appropriate responses to detections. More surveillance was conducted in Area 1 and Western Boundary.

Further clearance surveillance was focused on areas adjacent to or near previously searched priority areas. This continued into the third quarter, where the assessment of the summer surveillance results helped to inform the prioritisation of areas for the 2022 winter clearance surveillance period.

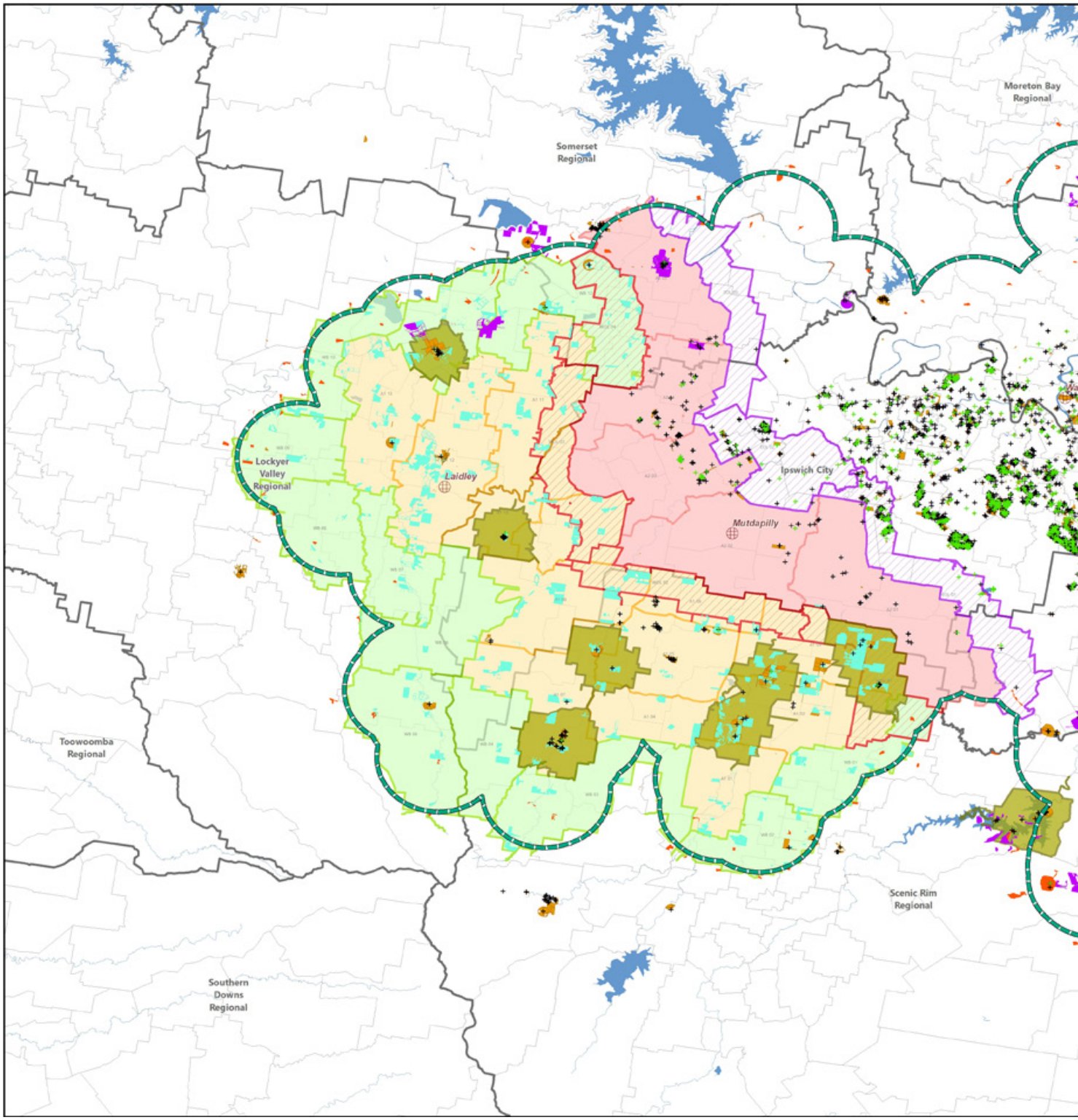
Clearance areas still to be done are those identified in the clearance priority heat map as 'risky' and not in the top 20% riskiest clearance areas.

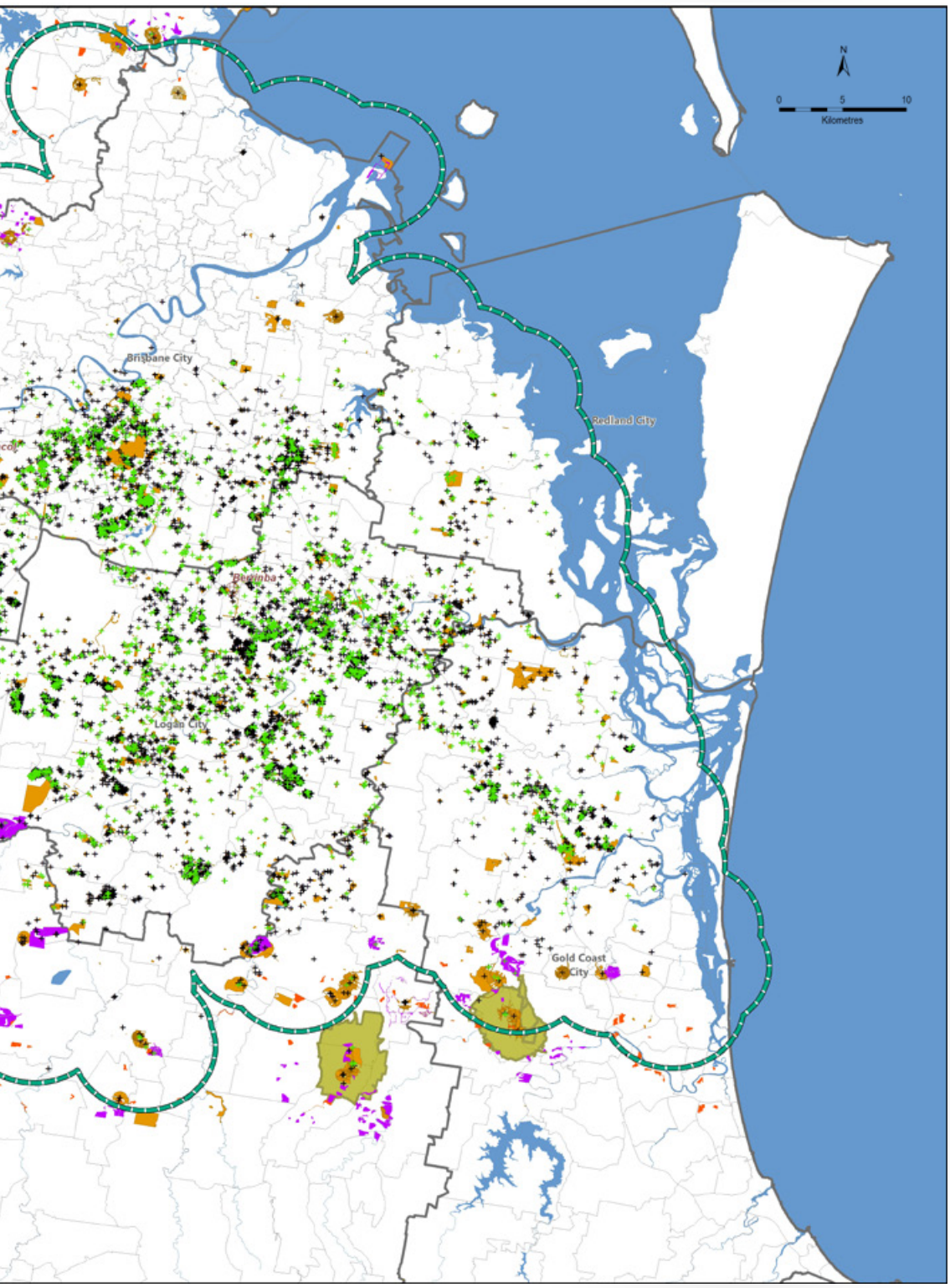
Under the proposed Clearance and Proof of Freedom Strategy, clearance zones must have two consecutive years of clearance surveillance without any observed living fire ants before they can be declared 'clear'. As of 30 June 2021, the second year of clearance surveillance is ongoing in Area 1 and Western Boundary, and the first year is beginning in Area 2.

Future clearance surveillance in Area 1 and Western Boundary will predominantly be done using remote sensing surveillance (RSS). This will require ongoing development work to fully integrate RSS with other clearance surveillance and treatment activities already used by the program.

Figure 7 shows clearance areas and all surveillance done this year, including clearance surveillance.

Figure 7: Surveillance in 2020–21





Without samples
With samples
Work sites
Responsive suveillance progress

Planned surveillance
Clearance
Sentinel
Targeted

AreaName
Area 1 clearance area
Western boundary clearance area
Area 2 eradication area
Eastern overlap area
Western overlap area
High risk areas

Boundaries
Operational boundary (2019-20)
Local Government Areas
Suburbs

Biosecurity zone
Fire ant biosecurity zone 1
Fire ant biosecurity zone 2

Whole-of-community response

Eradication success requires a whole-of-community response to locate and treat areas of infestation, prevent reinfestation, and ensure the management of fire ants is achieved with the least disruption to our way of life.

Behavioural insights

Research to determine stakeholder (residents and businesses) awareness, attitudes and beliefs, and motivation towards behaviours supporting fire ant eradication, underpins our engagement strategy.

Results from our behavioural insights research this year highlighted that awareness of fire ants (76– 92%) and their impacts is high, and people are willing to follow recommendations that would assist in fire ant eradication (93%).

Businesses appear to have a higher level of awareness and understanding of fire ants, compared with residents. However, both stakeholder groups agree that everyone can make a difference in fighting fire ants.

The high level of community support for fire ant eradication has led to more than half (52%) of businesses and more than a third (35%) of residents actively checking their properties for fire ants.

The research identified low awareness around fire ant self-management options—particularly when it comes to buying bait and applying it themselves. This is to be expected given the program had previously not encouraged self-treatment.

Table 9 below provides a summary of the findings. See **Appendices A and B** for a more detailed snapshot of outcomes.

Table 9: Stakeholder research summary—February 2021

Topic	Residents	Businesses
Awareness	• High levels of awareness of fire ants (76%) • More than half know about the program (61%) • Only 39% were aware they can engage a licensed pest manager to treat and 13% were aware they can self-treat by buying bait and applying it	• Very high awareness of fire ants (92%) • Most have knowledge of the program (83%) • 60% were aware they can engage a licensed pest manager to treat and 38% were aware they can self-treat by buying bait and applying it
Participation	• 35% had checked their yard for fire ants in the last 12 months however, those in eradication areas were higher (Area 1 at 67% and Area 2 at 71%) • Of those who had had treatment 66% were satisfied with the treatment	• 52% had checked their workplace for fire ants in the last 12 months. This was higher for those with eradication treatment in Area 1 at 74% but only marginally higher for Area 2 at 54% • Of those who had had treatment 79% were satisfied with the treatment
Attitudes	• Keen to follow recommendations (93%) • Believe everyone can help make a difference (91%) • More than half see fire ants as a large problem but 10% do not see it as a problem for their area and 5% not a problem for their household	• Keen to follow recommendations (93%) • Believe everyone can help make a different (92%) • More people think that fire ants are a problem in their area compared with residents but still low (29%) and more think it is a bigger problem for South East Queensland than themselves (64%)
Advertising recall	• 37% recalled information/advertising however, those with eradication treatment had a very high awareness (Area 1 at 82% and Area 2 at 88%)	• 60% recalled information/advertising with those with eradication treatment a much higher awareness (Area 1 at 76% and Area 2 at 96%)

The data was collected through phone interviews with 559 residents and 250 businesses in fire ant areas between 12 January to 2 February 2021.

The research survey will be undertaken every six months to continue to monitor stakeholder views and behaviours regarding fire ant management.

Building awareness

The program ran two marketing campaigns in 2020–21.

A new approach to campaign delivery was introduced which enabled the program to streamline the Queensland Government's Advertising and Communication Committee approval process and plan campaigns in advance.

The two campaigns were designed to encourage community and industry stakeholders in South East Queensland to work with the program in the fight against fire ants by:

- looking for and reporting fire ants
- giving fire ant field teams access to their properties so they can treat for fire ants
- understanding and following the rules surrounding fire ant biosecurity zones and movement controls
- participating in self-treatment projects and treating their properties.

The operational campaign focused on communicating the program's operational activities including eradication, suppression and containment treatment, as well as compliance audits and changes to the Biosecurity Regulation 2016 and fire ant biosecurity zones.

The lifestyle campaign focused on communicating the need for Queenslanders to treat their properties for fire ants, either as part of a self-treatment pilot or by choice.

A range of marketing and communication channels were used during these campaigns to ensure the program could communicate effectively and influence behaviour change with the target audiences. Channels included brochures, posters, radio, print and social media advertising, electronic notifications, letters, third-party communication packs, and news media engagement (Table 10).

Table 10: Stakeholder general awareness activities—2020–2021

Activity	Description	No. of contacts
Events and training	Direct contact e.g. interactive displays, training, community talks etc	4 636
	Indirect contact e.g. static displays, signage	98 278
Direct mail	Brochures and flyers to residents and businesses in treatment and surveillance areas about upcoming operations, fire ant detections in the area, general education and awareness	168 649
Newsletters and notifications	103 e-newsletters (general information) and e-notifications (topic specific e.g. significant detections	176 462
Social media	Paid post reach	965 719
	Organic (non-paid) reach	784 321
TOTAL		**2 198 065**

Far Left: Direct mail education piece – Area 1 and Western Boundary.

Left: Direct mail education piece —Area 2

Self-management initiative

Encouraging governments, industry, landowners and residents to report, treat and contain fire ants (pending planned eradication treatment) is an essential part of the 10-year Eradication Plan and a priority of the program's self-management initiative.

These stakeholders are in a unique position to fight fire ants in a way the program cannot—they can act as the first line of defence by proactively treating properties under their control as they do for any other pest. This could include purchasing bait and treating the ants themselves or hiring a pest manager.

This treatment will not replace the program's rolling eradication treatment. Instead, it is complementary to it, aiding in the suppression and containment of fire ants until the program's eradication treatment can be applied.

In 2020-21, community self-treatment projects were completed in targeted areas in Yarrabilba, Tamborine Mountain and the Gold Coast (Figure 3).

The cane growers self-treatment pilot was also extended after a positive evaluation and requests from stakeholders to continue.

Farmers in Coomera received enough bait to conduct three additional rounds of treatment (adding to the first two) over the remainder of 2021. The primary producers' pilot was extended to not only include the eradication treatment area but the southern suppression area. Farmers are treating buffer zones to avoid gaps in treatment due to cropping.

Others engaged in self-treatment projects included local councils, schools and sporting facilities.

Engagement with local city councils was also a central focus, as the program looks to encourage local governments to manage fire ant risks on their land. This augmented other engagement with local city councils around program treatment activities and fire ant detections of importance.

Overall, these projects demonstrated people want to keep their community free of fire ants with community sentiment positive and supporting the continued treatment of fire ants. See Table 11 for more information.

Table 11: Engagement in self-treatment activities—2020–21

Type	Number
Number of residential properties	2842
Number of schools	6
Number of sporting facilities	21
Cane farmers	24
Council land	2 in Logan City Council and Gold Coast City Council
Community groups	2 Tamborine Mountain Botanic Gardens and Landcare
Active engagement	door knocking (130 houses), letterbox drops (4000 properties) and local meetings

New name, new logo and new website

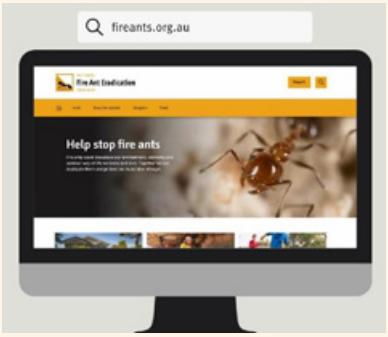
The program unveiled a new name, logo and website in 2020–21.

Dropping 'red imported' from the program name and unveiling a new look-and-feel was key to giving the National Fire Ant Eradication Program a fresh and recognisable identity.

The new brand was also applied to the program's new website fireants.org.au. The website provides a one-stop-shop for all fire ant-related information making it easier for the community, industry and program staff to access what they need to know.

The website's responsive design makes it easy to access on any device, whether it is mobile, desktop or tablet.

As part of this project, the yellow, white and black colour palette was rolled out across all marketing material and in-house documents, and will continue to be used going forward.



Working with industry and primary producers

In addition to self-treatment projects, engagement with industry and primary producers also included targeted activities such as those outlined in Table 12. Communication focused on notifications about fire ant detections of importance found in industrial and farmland areas, and specialised engagement on biosecurity zone changes and other information aimed at preventing the human-assisted movement of materials that may include fire ants.

Table 12: Industry and primary producer engagement summary—2020–21

Project	Type of engagement	No. of participants
Fire ant biosecurity changes	Webinars (7)	164
	Face to face meetings (5)	40
	Phone calls	84 businesses
	eHub	30 131 users
	Mail out	113
	Survey phone calls	27
Hay industry engagement	Hay forum	21
	Hay Day	25
	Tarome Community Conversation	40
Chemical supplier forum	Email notifications	2400
	Phone calls	20
CSIRO review of scientific principles	Webinar	85
	Phone calls	27
	eHub	2774 users
Bifenthrin update—turf industry	Phone calls	10
	Face to face meetings (2)	5
Compliance engagement	Phone calls	15
Fire ant compliance tool	Website	2000 users in July 2020

Industry 'Hay Day'

In May 2021, the program hosted a 'Hay Day' in Kents Lagoon (pictured) in the Scenic Rim Regional Council area. Twenty-four hay farmers and dealers participated in the practical showcase on movement controls involving hay.

Program science and compliance staff spoke about the importance of correctly storing and moving baled hay as fire ant spread through hay is a significant concern for Queenslanders.

The feedback was very positive, with four similar events planned for 2021–22.

Governance

The National Fire Ant Eradication Program Steering Committee was established by the Agriculture Ministers' Forum in July 2017 to provide strategic oversight of the program.

The program is governed strategically and operationally by a National Steering Committee who work with Biosecurity Queensland to deliver the program on behalf of its funding partners.

The Steering Committee's most important role is providing strategic guidance to the program to ensure it achieves its four objectives. The committee provides independent leadership and guidance to the program team and is responsible for monitoring the efficiency, finances and progress towards eradication.

An independent chair is appointed by the National Biosecurity Committee and members are made up of representatives from Australian and state and territory government funding partners with expertise in areas relevant to the program.

Meeting at least quarterly, the Steering Committee also engages with critical stakeholders to provide updates, answer questions and, receive advice and feedback from industry, environmental and community groups.

The Steering Committee's work this year included approving the program's 2020–21 Work Plan, the bringing forward of funding and the revised scope of work for 2020–21. This included options for maintaining the current level of response effort to fully test the response model and to maintain effectiveness pending a review of the program.

In April 2021, the Steering Committee reviewed the Terms of Reference and agreed on panel members for the 2021 Strategic Review of the program.

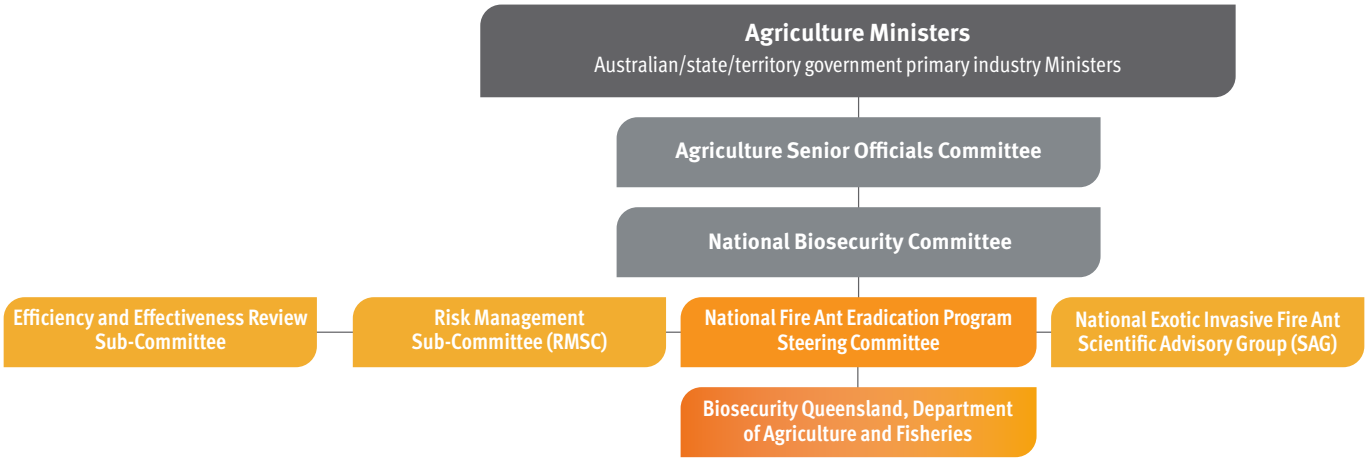
The Steering Committee is advised by its sub-committees—the **National Exotic Invasive Fire Ant Scientific Advisory Group (SAG), the Risk Management Sub-Committee (RMSC), and the Efficiency and Effectiveness Review Sub-Committee (E&E)**. Each committee also meets at least quarterly.

The SAG provides specialist scientific advice from national and international invasive ant experts to the Steering Committee. This includes matters such as the scientific basis of the tools, techniques, products and strategies used by the program. Matters SAG reviewed this year included Area 2 monitoring methodology of bait treatment efficacy; the CSIRO report and recommendations relating to scientific principles, the shift to a monogyne population; scientific rationale for how surveillance and treatment activities are conducted; progress of clearance and proof of freedom activities; strategy for southern containment treatment options.

The management of risk is essential to ensuring the program's success and continuous improvement in risk mitigation practices. The RMSC is made up of the Steering Committee Chair and selected committee members as well as two independent external risk specialists, one of whom chairs the sub-committee.

The E&E Sub-Committee supports the implementation of the recommendations of the Efficiency and Effectiveness Review completed this year. The sub-committee is chaired by the Steering Committee's Chair and includes the Australian Government, New South Wales and Queensland Steering Committee members, along with key program personnel.

Figure 8: National Fire Ant Eradication Program governance



Above: Steering Committee Chair Dr Wendy Craig, Financial Consultant Mike Reynolds and National Fire Ant Eradication Program Director of Operations Brett Turville inspect fire ant nests in Brisbane.

Steering Committee

Wendy Craik AM

BSc (Hons), GradDipMgt, PhD
Independent Chair
Member, Risk Management Committee
Chair, Efficiency and Effectiveness Committee

Appointed 2017

Wendy is recognised as one of Australia's leading independent public policy advisors, particularly on issues related to natural resource and invasive species management. Her wide-ranging experience includes her roles as Board member of the Reserve Bank of Australia, Chair of the Climate Change Authority, Chair of the Australian Rural Leadership Foundation, Deputy Chancellor for the University of South Australia, Chair of the New South Wales Marine Estate Management Authority and Member Advisory Board for the Centre for Strategy and Governance. Wendy was appointed a Member of the Order of Australia (AM) in 2007 for her service to the natural resource sector and for her contributions to policies affecting rural and regional Australia.

Nigel Ainsworth

BSc (Hons), PhD

Appointed 2020

After an early career in air pollution research Nigel has worked in the Victorian Government for 24 years, firstly in research and later in policy and scientific advisory roles. He has had a longstanding involvement with invasive ant management, beginning with membership of the former Tramp Ant Consultative Committee. His experience includes reviewing national eradication programs for Tropical Weeds and Electric Ants. He was also closely involved in the five-year review of the National Environmental Biosecurity Response Agreement (NEBRA) through membership of a group established by the National Biosecurity Committee to coordinate the process. He represents Victoria on the national Environment and Invasives Committee. His current position is Deputy Director Invasive Species Science.

Scott Charlton

BSc

Appointed 2020

Scott Charlton is the Director of Invasive Species Biosecurity with the New South Wales Department of Primary industries. Scott joined the Department in 2007 during the Equine Influenza response in New South Wales and has worked in the invasive species field for 13 years. Before joining the department, he worked at the Sydney Royal Botanic Garden where he was awarded the prestigious Friends of the Botanic Gardens scholarship travelling to the United States of America, France and the Republic of South Africa.

During his time in the department, Scott led significant invasive species management reforms and had a key role in the introduction of contemporary Biosecurity Legislation in 2015. Scott has a keen interest in risk management and behavioural sciences and how they can be applied for beneficial biosecurity outcomes. He has worked on many emergency responses and in 2014 oversaw the successful eradication of red imported fire ants from Port Botany and the eradication of yellow crazy ant from the New South Wales north coast in 2019. The latter program was awarded the National Biosecurity Award in 2020 in recognition of its many innovative approaches and great community engagement initiatives.

Josephine Laduzko

BEc (Hons) MMgtEc
Member, Risk Management Sub-Committee

Appointed 2017

Josephine Laduzko is the Head of the Biosecurity Response and Reform, within the Department of Agriculture, Water and the Environment. Her responsibilities include national response policy across the various emergency response deeds, operational preparedness policy, the conduct of National Biosecurity Committee and National Management Group meetings, and strategic biosecurity system reform. Before this, Jo was most recently responsible for Australian government state relations within the Department of the Prime Minister and Cabinet. She was a member of the steering committee for the inter-jurisdictional Report on Government Services Provision. Previous experience covers tax and superannuation policy, determination of proposals before the Foreign Investment Review Board, and competition policy agendas with the Australian Government Department of the Treasury.

Rae Burrows

BA (Hons), Adv Dip Leadership & Management, MBA, GAICD

Appointed 2021

Rae has been acting in the role of General Manager of Biosecurity Tasmania – responsible for managing Tasmania's Biosecurity, Animal Welfare and Primary Produce Safety systems. She has overseen a range of biosecurity incursions in both WA and Tasmania, and during the COVID pandemic has been a leader in Tasmania's response to this major health biosecurity matter. Rae took over as Tasmania's representative in the National Biosecurity Committee and NMG.

Lloyd Klumpp

BVSc, GradDipPsySt, GradDipProjMgt

Appointed 2018 to February 2021

Lloyd holds the position of General Manager of Biosecurity Tasmania, which is responsible for managing Tasmania's Biosecurity, Animal Welfare and Primary Produce Safety systems. He has overseen Tasmania's responses to biosecurity incursions such as Little Cherry Virus 2, Blueberry Rust, Myrtle Rust, Pacific Oyster Mortality Syndrome and most recently Queensland Fruit Fly. In an operational capacity, Lloyd undertook the role of Director State Disease Control Headquarters for the Equine Influenza response for Victoria as well as numerous other roles in Agricultural emergencies. Lloyd represents Tasmania at the National Biosecurity Committee and National Management Group. National Red Imported Fire Ant Eradication Program South East Queensland.

John Robertson

BSc, MSc, PhD, MBus
Member, Risk Management Sub-Committee

Appointed 2017

John is the General Manager of Invasive Plants and Animals for Biosecurity Queensland covering policy, stakeholder engagement, research, and state-wide operations including national eradication programs. Having led the invasive species area in Queensland for some time, John leads the development of new technologies including a strong presence in biocontrol. He has extensive experience in leading programs with large multidisciplinary teams. He has also led research and innovation programs in government and private industry settings. John is well versed in biosecurity response practices and performance, and has played a crucial role in the management of the fire ant program.

John Van Schagen

BAppSc (Biology), GradDip (Natural Resources), MAppSc (Natural Resources)

Appointed 2018

John has worked at the Western Australian (WA) Department of Primary Industries and Regional Development in several roles including as an entomologist working on the control of several tramp ant species including the Argentine ant. John then took up the role of Quarantine Entomologist and Manager of Quarantine Western Australia. His current role is Manager, Invertebrate Pests. John was the WA representative on the Domestic Quarantine and Market Access Working Group. He then managed the European house borer response in WA, before being appointed as Chief Plant Biosecurity Officer, including membership on the Plant Health Committee and Tramp Ant Consultative Committee.

Anne Walters

BAqua, MBA, PhD

Appointed 2020

Over the past 13 years, Anne held senior roles in the Northern Territory Government across a range of portfolios and sectors. Ongoing success in these roles required an ability to understand and respond sensitively to the complex relationships between government, community and business. Anne is the Chief Plant Health Officer for the Northern Territory with the Department of Industry, Tourism and Trade. In this role, Anne has been instrumental in implementing eradication programs for citrus canker and browsing ant. Anne has also recently been appointed as Deputy Chair of the Plant Health Committee.

Anne has a keen interest in building professional capacity and capability and a passion for promoting and supporting women to achieve their career aspirations.

National Exotic Invasive Fire Ant Scientific Advisory Group (SAG)

Bill Magee

BSc (ANU), Audit Assessor, approved by the Assessor Registration Board (UK) and National Association of Testing Authorities, Australia (NATA)
Chair, Scientific Advisory Group

Appointed 2018

Bill is the Director of Magee Consultancy Services Pty Ltd, specialising in plant biosecurity and market access negotiations. Between 2009 and 2014 he was Assistant Secretary, Plant Biosecurity, in the Australian Government's Department of Agriculture. Other appointments include: Project Leader, Pacific Plant Biosecurity Partnership, 2017 to present. Chair, IPPC Expert Working Group on the International Movement of Grain, Melbourne, 19–23 September 2016; Project Leader, Plant Biosecurity Cooperative Research Centre, 2014— December 2017; Chair, Independent Review of the National Red Imported Fire Ant Eradication Program 2015–2016; Member, IPPC Expert Working Group for the Development of a Commodity Standard, Edinburgh, June 2015; Australian delegation leader to the OECD Working Group on pesticides 2006–2009 and Australian delegation leader to the Codex Committee on General Principles 2006–2009.

David H. Oi

BSc, MSc, PhD

Appointed 2018

David is a research entomologist/lead scientist in the Imported Fire Ant and Household Insects Unit of the United States of America Department of Agriculture (USDA), Agricultural Research Service, in Gainesville, Florida. Since 1990, his research has focused on the development of integrated pest management strategies for the control of imported fire ants and other invasive ants. This includes research on ant baits, the biological control of fire ants using pathogens and the biology and control of tawny crazy ants. He has served as the acting National Program Leader of the USDA Agricultural Research Service's Veterinary, Medical and Urban Entomology National Program. Other positions held include entomologist for the Mauna Loa Macadamia Nut Corporation in Hawaii, research associate at the University of Florida and affiliate faculty at Auburn University, Alabama.

Monica Gruber

BSc (Hons First Class), PhD, GradCertLaw

Appointed 2018

Monica initiated and leads the Pacific Biosecurity initiative of Victoria University of Wellington (New Zealand) whose goal is to build resilience to biosecurity threats from invasive ants throughout the Pacific. Primarily working with regional agencies, the Secretariat of the Pacific Regional Environment Program (SPREP) and the Pacific Community (SPC), a major focus is on the prevention of the spread of red imported fire ants to Pacific Island countries and territories. Pacific Biosecurity is a founding partner of the Pacific Regional Invasive Species Management Support Service (PRISMSS). Monica's experience includes over 10 years in ecological research, primarily on invasive species and more than 20 years in project and program management.

Lori Lach

BA, MPH, PhD

Appointed 2018

Lori is a community ecologist with over 20 years' experience researching ant invasions in various parts of the globe. She has authored dozens of scientific articles, book chapters and popular articles on invasive species. She led the national review of impacts on biodiversity of the six nationally funded tramp ant management programs in 2012. She provided evidence on the effects of invasive ants and their management to the 2014 Senate Enquiry into Environmental Biosecurity. She has provided scientific advice and research support to the Yellow Crazy Ant Eradication Program run by the Wet Tropics Management Authority since its inception in 2013.

Marc Widmer

CAppSc

Appointed 2019

Marc has worked for the Department of Primary Industries (entomology) for 41 years and is the department's myrmecologist and social insect specialist, working on pests of agricultural, economic and biosecurity significance. He represents WA as a subject matter expert on biosecurity pests such as European house borer, subterranean and drywood termites, exotic snails, Macao paper wasp, keyhole wasp and many ants including electric ants, fire ants and browsing ants. Marc was responsible for several successful social insect pest eradications across Australia including drywood termites, European wasp, Argentine ants, tropical fire ants and browsing ant.

Ben Hoffmann

BSc (Hons First Class), PhD

Appointed 2018

Ben is an ecologist with an international reputation in invasive ant biology and management. Ben's research model is predominantly to embed strategic science within eradication programs to influence management practices in real-time and improve on-ground outcomes. He is engaged with every ant eradication program within Australia ranging from committee oversight to coordination. Ben is an invited member of the International Union for Conservation of Nature (IUCN) Invasive Species Specialist Group and is on multiple advisory committees for eradication programs and conservation organisations.

Ross Wylie

BSc, MSc, PhD

Appointed 2018

Ross has a background in forest entomology where his career spanned 42 years, beginning in 1967 in Papua New Guinea and from 1974 to 2009 with forestry in Queensland. He has a particular interest in invasive species and has conducted projects and consulted in 20 countries in Asia-Pacific establishing early warning systems for invasive pests. He has authored over 120 publications, including four books, the latest on insect pests in tropical forests. He has been involved with the National Red Imported Fire Ant Eradication Program since the discovery of the ant in Brisbane in 2001, first as the foundation Chair of the Science Advisory Panel and since 2010 as Science Manager and now Science Leader.

Gary Morton

BSc (Ecology)

Appointed 2018

Gary is an Inspector under the *Biosecurity Act 2014* (Qld) and a licenced pest controller. He has worked for Biosecurity Queensland on the National Electric Ant Eradication Program since 2007, initially as a field officer, then program scientist and for the last eight years as Program Coordinator. He is a member of the Wet Tropics Management Authority Yellow Crazy Ant Eradication Program (WTMA YCAEP) Steering Committee and Operational Management Group. Gary was the coordinator for Biosecurity Queensland's North Queensland Yellow Crazy Ant Program and was Operations Coordinator on the RIFA Yarwun Eradication in 2013–14 and Local Control Centre Controller on the Panama TR4 Response in 2015.

Risk Management Sub-Committee (non-Steering Committee members)

Alan Millis

BE (Hons), MEngSc, BEcon, DipCompSc, GAICD
Chair, Risk Management Committee

Appointed 2018

Alan is an experienced senior public service and corporate executive and company director with over 25 years' experience in executive general management, governance and risk management, business development and energy and resources policy. He has held several senior executive roles within the Queensland Government departments responsible for energy and in Government-owned corporations in the energy sector. Alan is a past member of the Audit Committee of the Queensland Department of Energy and Water Supply and former Chair and Audit and Risk Committee member of the not-for-profit, Carinity. He is a member of the Board of Powerlink Queensland and Chair of the Board's Audit, Risk and Compliance Committee.

Irene Sitton

BCom, LLB, MBA (Exec), GradDipCSP, MAppFin, FGIA, FCG, CA, CertEDC

Appointed 2018

Irene has extensive governance, risk and commercial advisory experience across a range of industries in both the private and public sector. She began her career in audit and advisory services with the international professional services firms of PwC and KPMG. In a career spanning 30 years, she currently supports the provision of advice to the state government on the risk and socioeconomic evaluation of major infrastructure proposals. Both a Chartered Accountant and Chartered Governance Professional, Irene is Chair of the Queensland Council of the Governance Institute of Australia and since 2009 has been a member of its national Public Sector Governance Committee.

Our People

Our diverse team of ground crews, scientists and behind the scenes staff work hard with the community to rid Australia of fire ants.

The 10-year Eradication Plan's commitment to the long-term funding of the program has meant changes to structure and leadership, consolidated accommodation for work teams as well as the ability to maintain and grow expertise and experience.

Our leaders

The leadership team reports to the National Steering Committee. Team leaders during 2020-21 were:

- Graeme Dudgeon—General Manager
- Dr Andrew Turley—Director, Strategy
- Brett Turville—Director, Operations
- Heather Leeson—Manager, Policy and Compliance
- Sharon Janssen—Manager, Planning and Quality Management
- Barry Cooper—Manager, Operations
- Dr Liz Williams—Manager, Science
- Chris Hollingdrake—Acting Manager, Communications and Engagement
- Brian Bond—Manager, Business Services and Executive Officer
- Mark Winter—Manager, Business Systems and Intelligence

Our team

People are at the heart of our business. Creating an environment where our staff feel engaged, supported and equipped to do their best is essential to our success. Our team includes:

- treatment and surveillance ground crews, and aerial task managers
- scientists, including technical experts in genetics and remote sensing
- client liaison and customer service officers
- geographical map makers
- logistics and quality assurance officers
- data analysis and planning officers
- policy writers, accountants, communications and engagement officers, administrators and information technology analysts.

We use platforms such as our staff newsletter, online group discussion boards (agile walls) and management team visits to our depots to support information sharing and cross-team discussion. We engage employees through interactive forums and team meetings which encourage two-way conversations and problem resolution. Our management updates give employees the chance to comment and ask questions about the business.

Staff are encouraged to create a personal development plan with their manager to build their capacity and capability for future roles.

Permanent staff numbers remained constant throughout the year and in line with COVID-19 Queensland Government policy not to increase the permanent workforce. Short-term contractors were engaged to meet business needs, particularly during treatment season when extra field staff are needed to complete treatment (Table 13).

Table 13: Staff numbers in 2020–21

Position	Q1	Q2	Q3	Q4
Permanent	76	85	88	87
Temporary	54	41	39	40
Contractor—office	42	44	44	39
Contractor—field	247	183	168	156
TOTAL	**419**	**353**	**339**	**322**

> “You come up with a plan, something happens that makes you change it... Being highly responsive is an absolute must!”

Meet Senior Planning Officer Ross Dorward

“I started a two-day temporary assignment with the National Fire Ant Eradication Program and took it upon myself to learn more about fire ants—21 years later, I’m still here, and still learning!

In March 2001, I moved to Queensland from Canberra where I’d worked as a Fleet Purchasing and Disposal Manager with the ACT Government.

I’ve worked in a variety of operational coordinator or planning-based roles with the program and am currently a Senior Planning Officer with the Planning and Quality Management team.

The daily challenges of the program keep me on my toes, but I really enjoy planning, analysing information, and adapting to new outcomes. It’s a lot like what I enjoy about one of my favourite activities—gridiron. You come up with a plan, something happens that makes you change it, then you implement the new plan as quickly as possible otherwise the game, or in this case fire ants, get away from you. Being highly responsive is an absolute must!”

Where we work

Teams in South East Queensland are based across six sites:

Table 14: National Fire Ant Eradication Program homebase work sites and activities

Central office	Satellite sites			
Berrinba	**Mutdapilly and Laidley**	**Wacol**	**Coopers Plains**	**Brisbane City**
Base for ground crews for parts of Area 2 and all of Areas 3 and 4. Executive, business services, policy and compliance, systems and intelligence, community engagement, science diagnostic and research, planning and quality management.	Base for ground crews for Area 1, the Western Boundary and Western Suppression area, and the Western edge of Area 2.	Aerial operations	Genetics research	Corporate support, including human resource management and finance.

Workplace health and safety

Over the past year, the program continued its focus on workplace health and safety with key workplace health and safety (WHS) activities such as:

- consulting with health and safety representatives through the Work Health and Safety Committee
- improving the quality input into the online TABS (Think Act Be Safe) portal for employees to lodge and review incidents
- providing face-to-face training sessions
- conducting workstation and worksite assessments

Workplace health and safety representatives maintain a focus across the program to heighten awareness and identify workable solutions for all identified risks.

Table 15: Injuries in 2020–21

Injury classification	Q1	Q2	Q3	Q4	Year
Repetitive movement and other muscular stress	3	3	4	2	12
Contact or exposure to electricity	0	1	1	0	2
Contact or exposure to heat and cold	1	2	4	3	10
Fall, trip, slip (not from a height)	10	15	9	9	43
Hitting or being hit by an object/s	1	4	4	7	16
TOTAL	**15**	**25**	**22**	**21**	**83**

Table 16: Workplace health and safety incidents in 2020–21

Category	Q1	Q2	Q3	Q4	Year
Hazards	3	1	1	1	6
Near miss	3	6	9	3	21
Property damage	24	51	59	21	155
TOTAL	**30**	**58**	**69**	**25**	**182**

Volunteers

During National Volunteer Week in May 2021 a volunteer morning tea was held for all volunteers, with seven active and one retiring volunteer in attendance on the day. All volunteers were awarded a certificate of appreciation and the retiring volunteers received an additional certificate commemorating their years of service.

Due to a shift in engagement priorities and with COVID-19 still in effect in Queensland, a decision was made to limit the number of events the program will be attending to focus on targeted and high-value activities relevant to specific campaigns. This reduced the need for volunteers to support events.

> Regular communication was sent out to our volunteers to keep them up to date with the program.

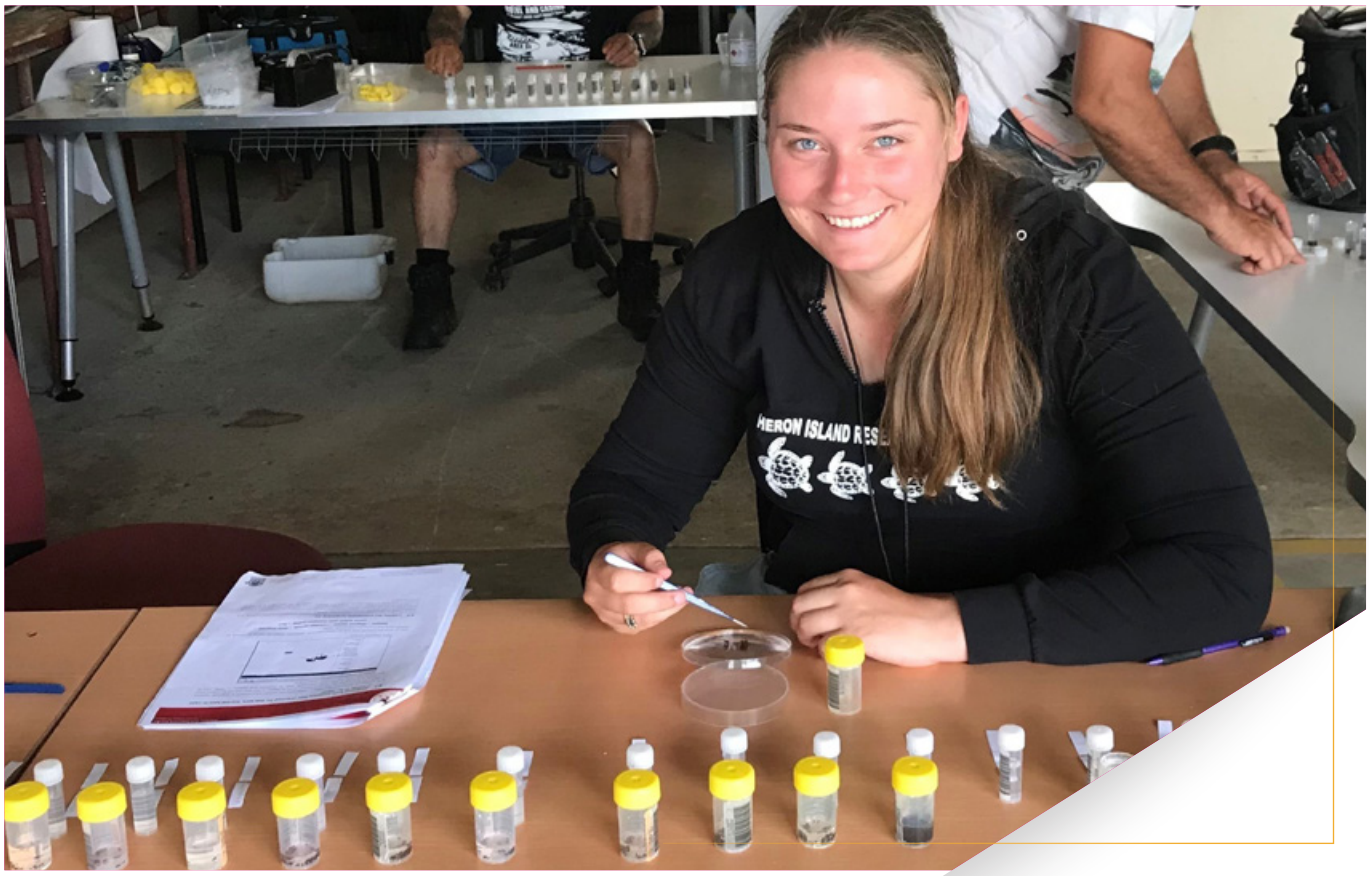
Impacts of COVID-19

The program has continued to operate at full capacity during the COVID-19 pandemic because it is considered an essential service for the Queensland community.

To protect staff and the community during the pandemic actions included:

- alternative working arrangements for staff with the capacity to work from home and social distancing practices and hygiene for staff working in the office
- securing and recording additional equipment (e.g. data sims and headsets) to enable staff to work from home
- hiring additional vehicles to limit two staff per vehicle
- contacting customers in advance via telephone to avoid face-to-face contact when on-site
- practising extra vigilance with staff showing any symptoms of sickness, as well as immediate isolation of teams if a member tested positive for COVID-19.

Laboratory consumables were made more difficult to procure, which has resulted in a backlog of genetic testing.



Above: Fire ant sample preparation prior to genetic analysis.

Our funding

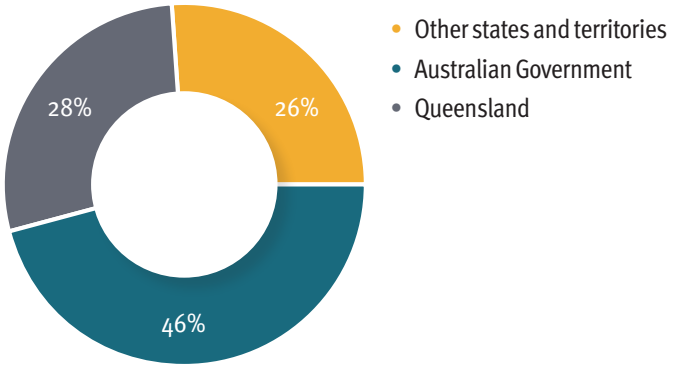
During 2020–21, the program spent $59.3 million of a $58.5 million budget, an overspend of $800 000.

The program's Steering Committee approved an overspend $1.4 million in 2020–21 to be recovered from the 2021–22 budget. This amount was required to fund unplanned additions to the 2020–21 treatment plan including significant fire ant detections, a substantial increase in the volume of responsive treatment and a greater than forecast volume of surveillance activity directly related to the volume of detections. The Queensland Government funded the program's actual overspend amount of $800 000 which resulted in a balanced budget position for 2020–21. The program will recover the 2020–21 overspend from its cost-sharing partners during 2021–22, as agreed by the National Steering Committee.

Income

The timing of funding has changed from the original 10-year Eradication Plan approval. The Australian and Queensland Governments have brought forward funding in the years 2018–19 to 2020–21 to fund the Western Boundary. Queensland brought forward a further $8.9 million in 2019–20 to fund the program's work plan that year. The program incurred an underspend of $5.5 million in 2019–20 and this amount was carried forward to 2020–21.

Figure 9: Cost-sharing 2020–21



Expenditure

Table 17: Program expenditure areas 2020–21

Program area	Budget $	Actual $	Variance $
Program logistics and business support	3 464 063	3 521 986	-57 923
Remote sensing surveillance	1 592 828	1 440 295	152 534
Systems and technology innovation	2 128 193	1 971 515	156 678
Communication and stakeholder engagement	2 621 133	1 962 515	658 618
Science services and eradication assessment	3 035 246	2 703 308	331 938
Planning and quality assurance	2 958 747	2 774 945	183 801
Operations	40 028 659	42 400 884	-2 372 225
Directorate	860 036	876 677	-16 641
Self-management	508 562	493 929	14 633
Strategic policy and performance	1 296 533	1 169 928	126 605
TOTAL	**$58 494 000**	**$59 315 984**	**$-821 983**

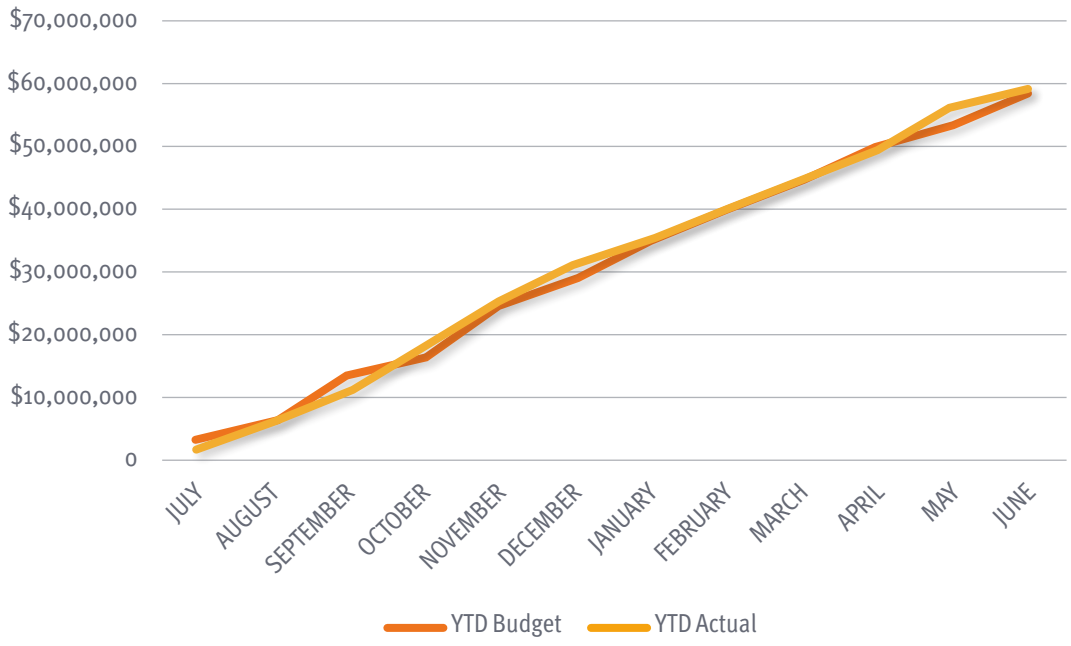
Material variances include an overspend in operations ($2.4 million) and business support ($58 000). The operations overspend includes $1.4 million in contractors, $980 000 in aircraft hire for treatment, and $570 000 in vehicle hire.

Additional contractors were mobilised during the treatment season to meet operational requirements which also required additional vehicles to enable the program to meet social distancing requirements for COVID-19. The overspend in aircraft hire is mainly due to a shortage in fast-acting insecticide which required helicopters to do more frequent ferrying to load bait compared with IGR product. An operations underspend of $800 000 in bait is reflective of area treated.

Overspend is offset against underspends in other program areas i.e. communication and stakeholder engagement ($700 000), science services and eradication assessment ($300 000), planning and quality assurance ($200 000), systems and technology innovation ($200 000), remote sensing surveillance ($200 000) and strategic policy and performance ($100 000).

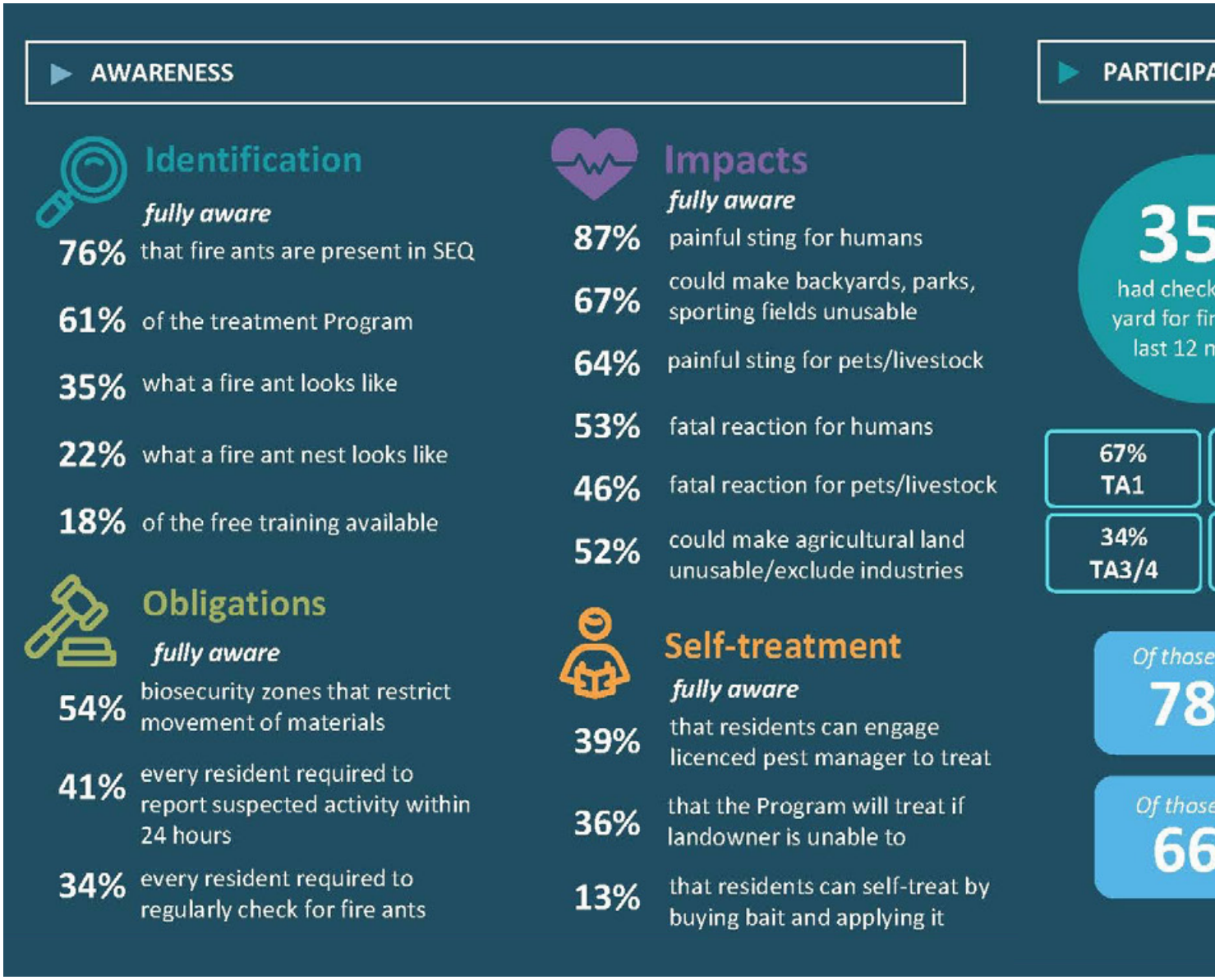
Expenditure to budget trend

Figure 10: Expenditure to budget trend 2020–21

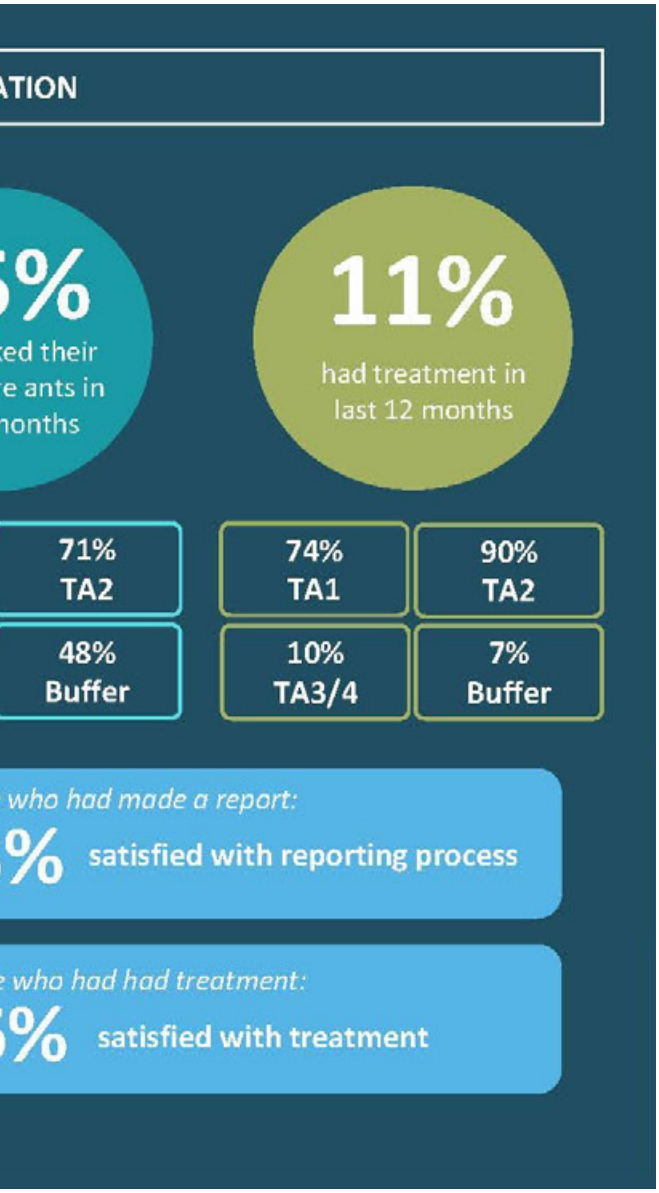


The program's financial management information is included in the annual financial statements of the Queensland Department of Agriculture and Fisheries, which are audited by the Queensland Audit Office in accordance with Section 40 of the *Auditor-General Act 2009* (Qld). The Auditor-General has provided an unqualified audit opinion on the 2020–21 financial statements of the Department of Agriculture and Fisheries.

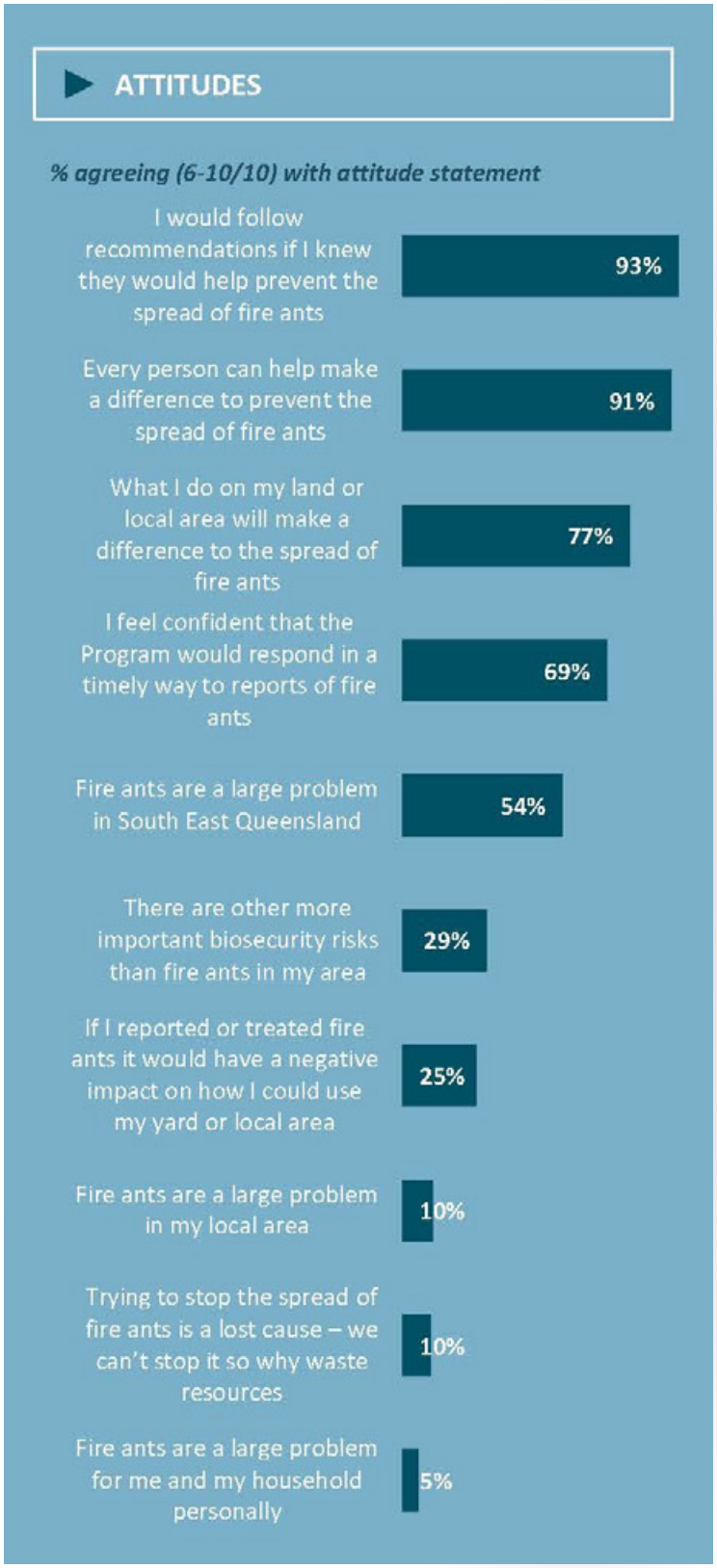
Appendix A
Market research snapshot: residents, February 2021



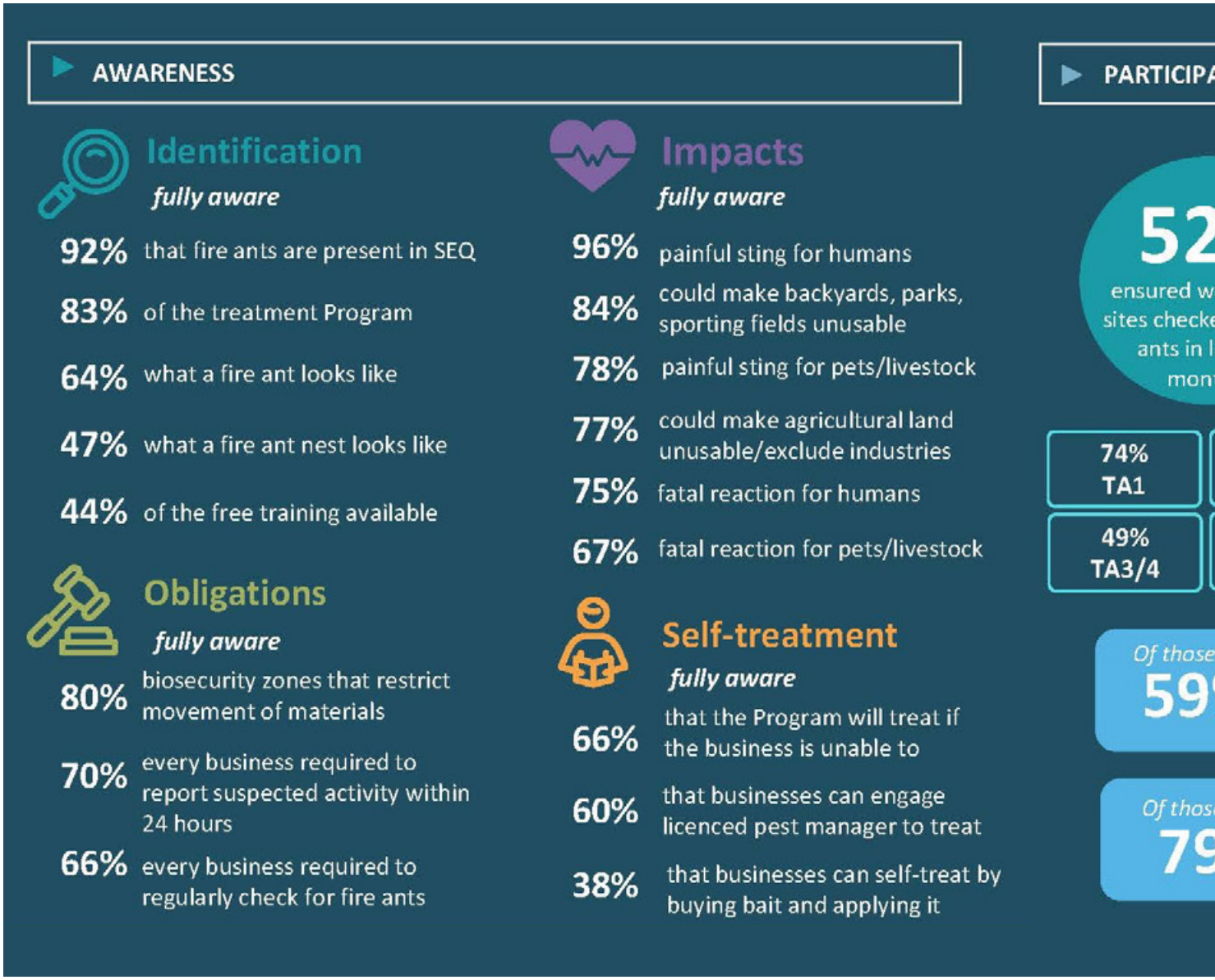
TA1, 2, 3/4 refer to treatment areas 1 to 4 outlined in Figure 2. Buffer refers to the biosecurity buffer zone 5km outside, plus the outside operational zone buffer.

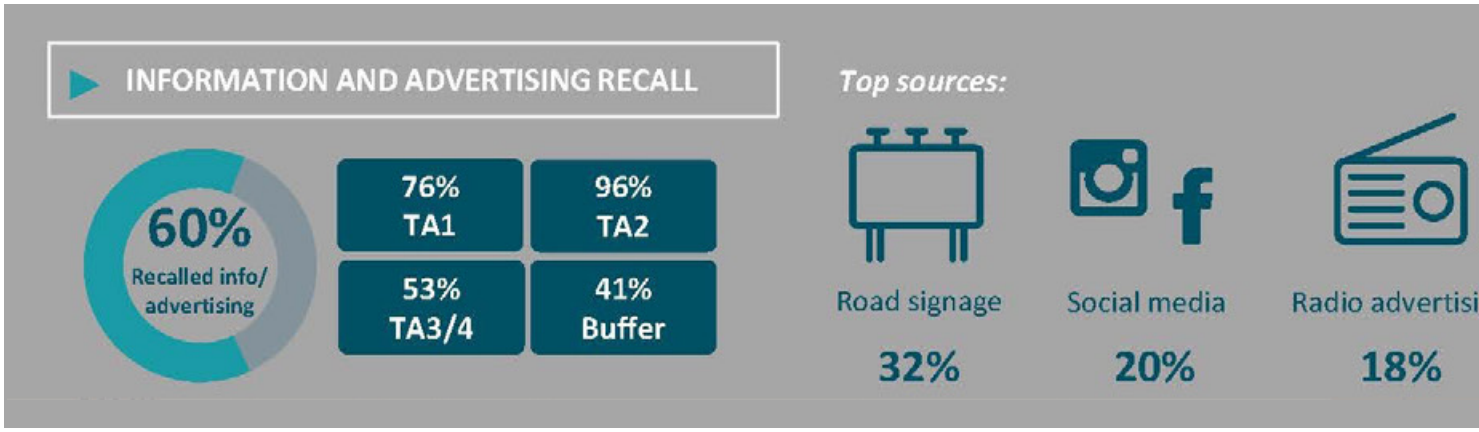

ATION
5%
ed their
e ants in
months
11%
had treatment in
last 12 months
71%
TA2
74%
TA1
90%
TA2
48%
Buffer
10%
TA3/4
7%
Buffer
who had made a report:
% satisfied with reporting process
who had had treatment:
% satisfied with treatment


tising
Info stalls
7%
Websites / social media
6%


ATTITUDES
% agreeing (6-10/10) with attitude statement
I would follow recommendations if I knew they would help prevent the spread of fire ants
93%
Every person can help make a difference to prevent the spread of fire ants
91%
What I do on my land or local area will make a difference to the spread of fire ants
77%
I feel confident that the Program would respond in a timely way to reports of fire ants
69%
Fire ants are a large problem in South East Queensland
54%
There are other more important biosecurity risks than fire ants in my area
29%
If I reported or treated fire ants it would have a negative impact on how I could use my yard or local area
25%
Fire ants are a large problem in my local area
10%
Trying to stop the spread of fire ants is a lost cause – we can't stop it so why waste resources
10%
Fire ants are a large problem for me and my household personally
5%

Appendix B
Market research snapshot: businesses, February 2021





TA1, 2, 3/4 refer to treatment areas 1 to 4 outlined in Figure 2. Buffer refers to the biosecurity buffer zone 5km outside, plus the outside operational zone buffer.

ATION

2%
orkplace
ed for fire
ast 12
ths

31%
had treatment in
last 12 months

54% TA2	54% TA1	71% TA2
37% Buffer	20% TA3/4	15% Buffer

who had made a report:
%
satisfied with reporting process

e who had had treatment:
9%
satisfied with treatment

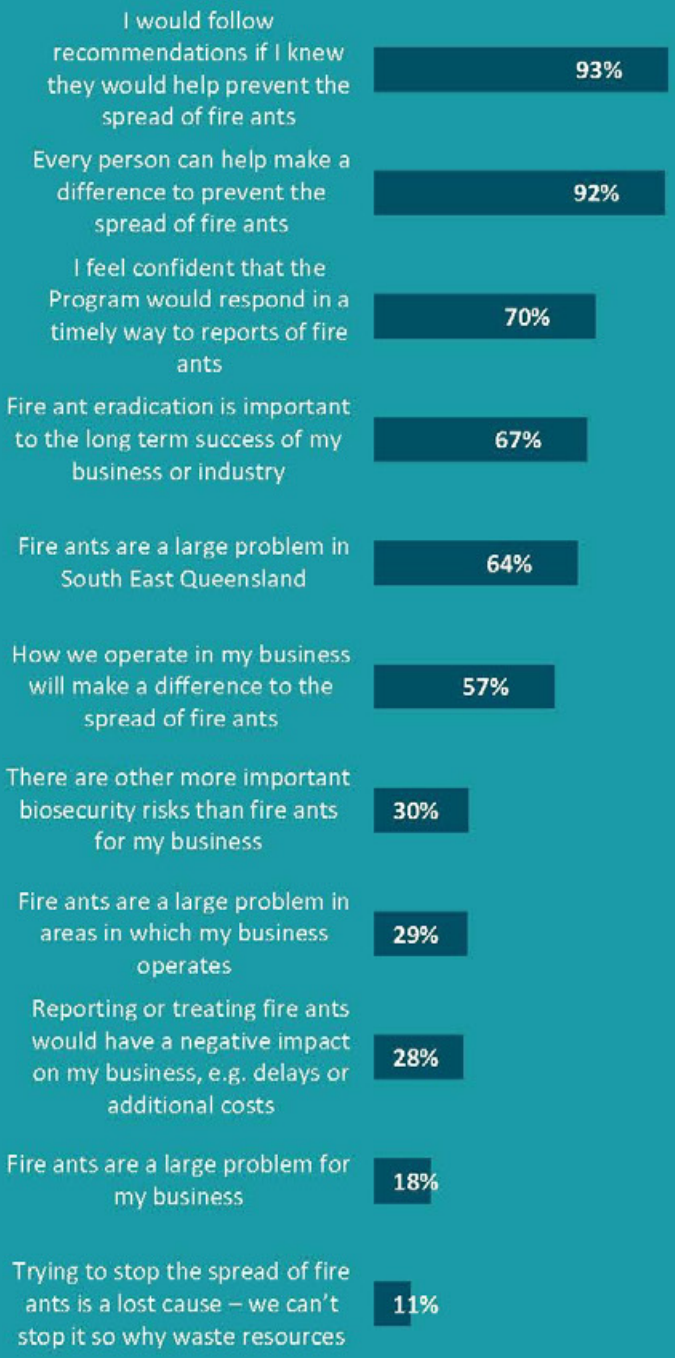
ng

Industry publications advertising
17%

Program's email newsletter
16%

ATTITUDES

% agreeing (6-10/10) with attitude statement



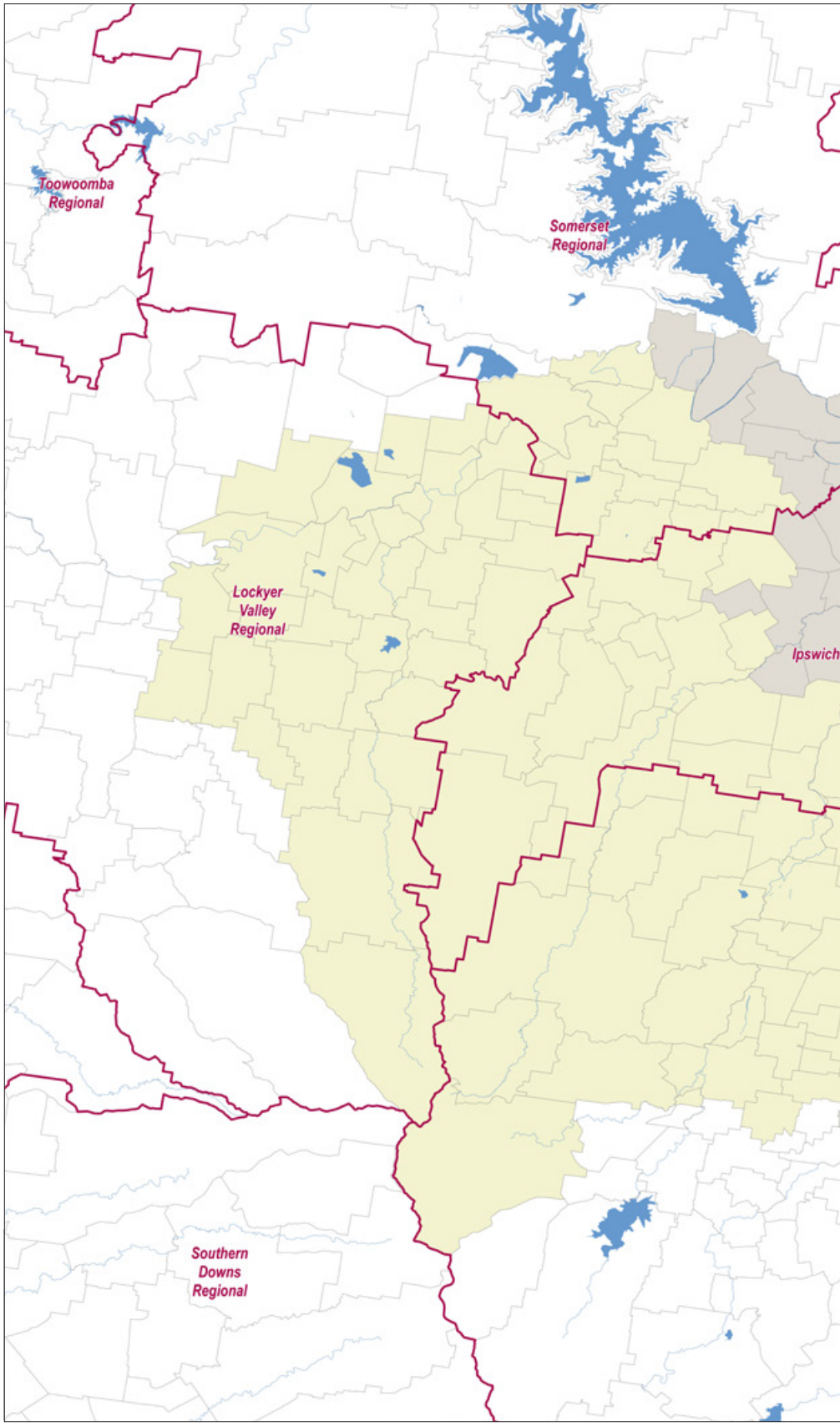
Appendix C—Fire ant biosecurity zones at 30 June 2021

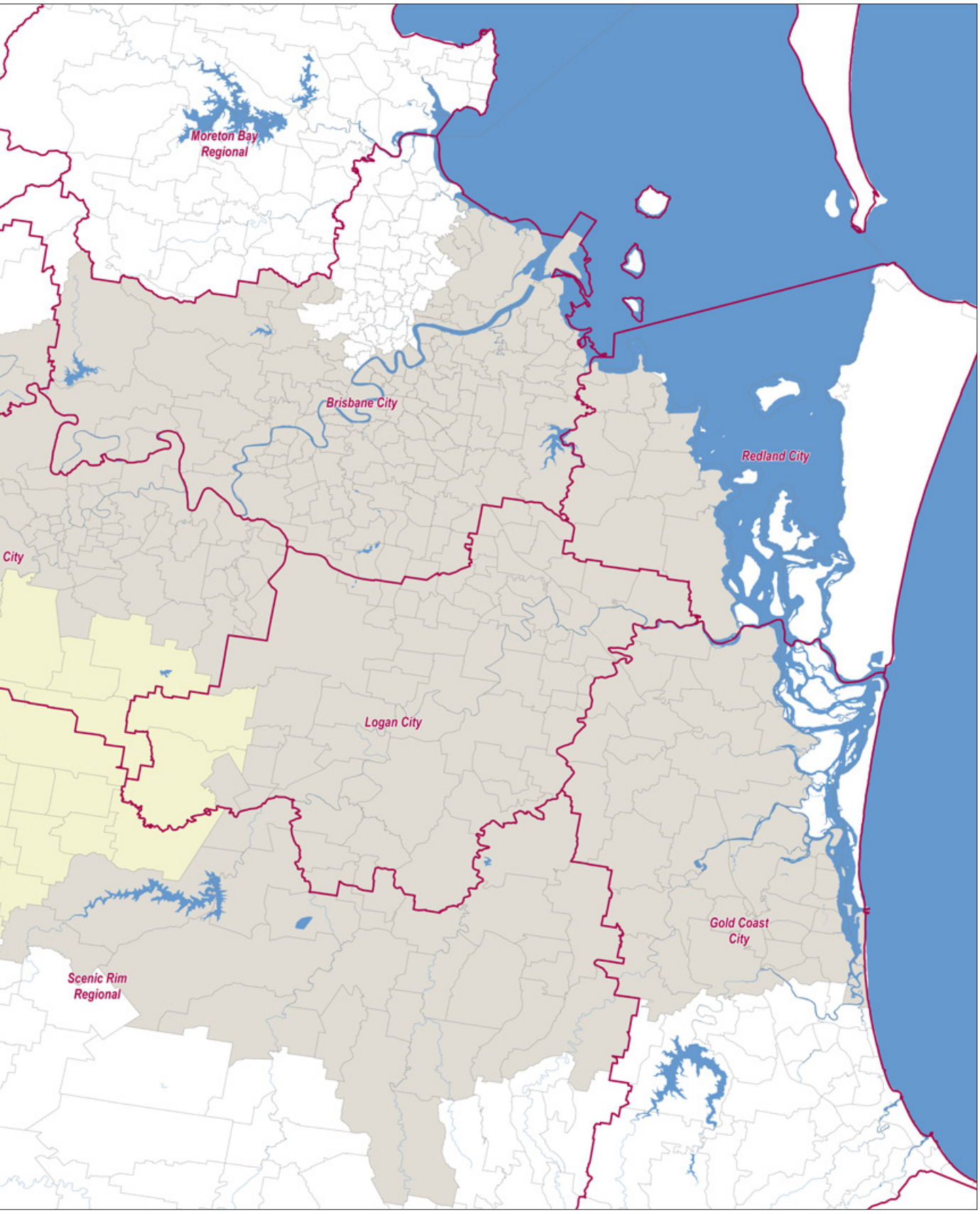
Fire ant biosecurity zone 1

Adare
Anthony
Ashwell
Blantyre
Blenheim
Brightview
Calvert
Clarendon
Coleyville
College View
Coolana
Crowley Vale
Ebenezer
Fassifern
Forest Hill
Frazerview
Gatton
Glamorgan Vale
Glen Cairn
Glenore Grove
Goolman
Grandchester
Haigslea
Harrisville
Hatton Vale
Kalbar
Kensington Grove
Kents Lagoon
Kentville
Kulgun
Laidley
Laidley Creek West
Laidley Heights
Laidley North
Laidley South
Lake Clarendon
Lanefield
Lark Hill
Lawes
Limestone Ridges
Lockrose
Lower Mount Walker
Lower Tenthill
Lowood
Lynford
Lyons
Marburg
Merryvale
Milbong
Milora
Minden
Moorang
Morton Vale
Mount Berryman
Mount Forbes
Mount Mort
Mount Tarampa
Mount Walker
Mount Walker West
Mulgowie
Munbilla
Mutdapilly
Obum Obum
Peak Crossing
Plainland
Prenzlau
Purga
Radford
Regency Downs
Rifle Range
Roadvale
Rockside
Ropeley
Rosevale
Rosewood
Silverdale
South Ripley
Summerholm
Tallegalla
Tarampa
Tarome
Templin
Teviotville
Thagoona
The Bluff
Thornton
Townson
Undullah
Upper Tenthill
Warrill View
Washpool
Willowbank
Wilsons Plains
Woodlands
Woolooman
Woolshed

Fire ant biosecurity zone 2

Acacia Ridge
Alberton
Alexandra Hills
Algester
Allenview
Amberley
Annerley
Anstead
Archerfield
Arundel
Ascot
Ashmore
Augustine Heights
Bahrs Scrub
Balmoral
Bannockburn
Banyo
Bardon
Barellan Point
Basin Pocket
Beaudesert
Beenleigh
Belivah
Bellbird Park
Bellbowrie
Belmont
Benobble
Berrinba
Bethania
Biddaddaba
Biggera Waters
Birkdale
Birnam
Blacksoil
Blackstone
Booval
Borallon
Boronia Heights
Boyland
Brassall
Brisbane Airport
Brisbane City
Bromelton
Brookfield
Brookwater
Browns Plains
Buccan
Bulimba
Bundamba
Burbank
Calamvale
Camira
Camp Hill
Cannon Hill
Canungra
Capalaba
Carbrook
Carina
Carina Heights
Carindale
Carole Park
Cedar Creek
Cedar Grove
Cedar Vale
Chambers Flat
Chandler
Chapel Hill
Chelmer
Churchill
Chuwar
Clagiraba
Cleveland
Coalfalls
Collingwood Park
Coombabah
Coomera
Coopers Plains
Coorparoo
Corinda
Cornubia
Coulson
Crestmead
Cryna
Daisy Hill
Darra
Deebing Heights
Dinmore
Doolandella
Drewvale
Durack
Dutton Park
Eagle Farm
Eagleby
East Brisbane
East Ipswich
Eastern Heights
Ebbw Vale
Edens Landing
Eight Mile Plains
Ellen Grove
Enoggera Reservoir
Fairfield
Fairney View
Fernvale
Ferny Grove
Fig Tree Pocket
Flagstone
Flinders Lakes
Flinders View
Forest Lake
Forestdale
Gailes
Gaven
Gaythorne
Gilberton
Gleneagle
Glenlogan
Goodna
Graceville
Greenbank
Greenslopes
Guanaba
Gumdale
Hamilton
Hawthorne
Heathwood
Helensvale
Hemmant
Hendra
Heritage Park
Highgate Hill
Hillcrest
Holland Park
Holland Park West
Hollywell
Holmview
Hope Island
Inala
Indooroopilly
Ipswich
Ironbark
Jacobs Well
Jamboree Heights
Jeebropilly
Jimboomba
Jindalee
Josephville
Kagaru
Kairabah
Kangaroo Point
Karalee
Karana Downs
Karawatha
Karrabin
Kenmore
Kenmore Hills
Keperra
Kerry
Kholo
Kingsholme
Kingston
Kuraby
Labrador
Lake Manchester
Larapinta
Leichhardt
Logan Central
Logan Reserve
Logan Village
Loganholme
Loganlea
Lota
Luscombe
Lytton
Macgregor
Mackenzie
Main Beach
Manly
Manly West
Mansfield
Marsden
Maudsland
Meadowbrook
Middle Park
Mitchelton
Moggill
Molendinar
Monarch Glen
Moores Pocket
Moorooka
Morningside
Mount Coot-Tha
Mount Cotton
Mount Crosby
Mount Gravatt
Mount Gravatt East
Mount Marrow
Mount Nathan
Mount Ommaney
Mount Warren Park
Muirlea
Mundoolun
Munruben
Murarrie
Nathan
Nerang
New Beith
New Chum
New Farm
Newtown
Nindooinbah
Norman Park
North Booval
North Ipswich
North Maclean
North Tivoli
Norwell
Nudgee
Nudgee Beach
One Mile
Ormeau
Ormeau Hills
Ormiston
Oxenford
Oxley
Pacific Pines
Pallara
Paradise Point
Park Ridge
Park Ridge South
Parkinson
Parkwood
Patrick Estate
Pimpama
Pine Mountain
Pinjarra Hills
Pinkenba
Port Of Brisbane
Priestdale
Pullenvale
Raceview
Ransome
Redbank
Redbank Plains
Redland Bay
Regents Park
Richlands
Ripley
Riverbend
Riverhills
Riverview
Robertson
Rochedale
Rochedale South
Rocklea
Runaway Bay
Runcorn
Sadliers Crossing
Salisbury
Seven Hills
Seventeen Mile
Rocks
Shailer Park
Sheldon
Sherwood
Silkstone
Silverbark Ridge
Sinnamon Park
Slacks Creek
South Brisbane
South Maclean
Southport
Spring Mountain
Springfield
Springfield Central
Springfield Lakes
Springwood
St Lucia
Stapylton
Steiglitz
Stockleigh
Stones Corner
Stretton
Sumner
Sunnybank
Sunnybank Hills
Surfers Paradise
Swanbank
Tabragalba
Tamborine
Tamborine Mountain
Tanah Merah
Taringa
Tarragindi
Tennyson
The Gap
Thorneside
Thornlands
Tingalpa
Tivoli
Toowong
Underwood
Upper Brookfield
Upper Coomera
Upper Kedron
Upper Mount Gravatt
Veresdale
Veresdale Scrub
Vernor
Victoria Point
Wacol
Wakerley
Walloon
Wanora
Waterford
Waterford West
Wellington Point
West End
West Ipswich
Westlake
White Rock
Willawong
Willow Vale
Windaroo
Wishart
Witheren
Wivenhoe Pocket
Wolffdene
Wongawallan
Wonglepong
Woodend
Woodhill
Woodridge
Woolloongabba
Woongoolba
Wulkuraka
Wyaralong
Wynnum
Wynnum West
Yamanto
Yarrabilba
Yatala
Yeerongpilly
Yeronga




Moreton Bay
Regional
Brisbane City
Redland City
City
Logan City
Gold Coast
City
Scenic Rim
Regional

NATIONAL
Fire Ant
Eradication
PROGRAM

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Berrinba QLD 4117

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