

2017–18

annual report

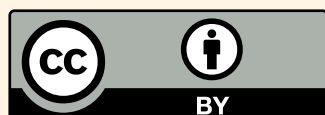
National Red Imported Fire Ant Eradication Program
South East Queensland



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Department of Agriculture and Fisheries.

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Message from the Chair

Welcome to the 2017–18 Annual Report for the National Red Imported Fire Ant Eradication Program in South East Queensland (the Program). This inaugural report under the Ten Year Eradication Plan 2017–18 to 2026–27 (Ten Year Plan) for the Program outlines efforts undertaken during this reporting period to eradicate this highly dangerous and invasive pest from South East Queensland (SEQ).

On 26 July 2017, the national Agriculture Ministers' Forum approved funding of \$411.4 million over 10 years for the Queensland Government to coordinate an expanded national response to eradicate red imported fire ants (fire ants). A Program Steering Committee made up of senior Commonwealth and state biosecurity representatives was established to provide strategic oversight to the Program, and I have been appointed as the independent chair.

Under the Ten Year Plan, despite some challenges arising from the rapid expansion needed to accommodate the full eradication agenda, the Program made significant progress in its first year, including a 95 per cent increase in eradication treatment activities since 2016–17. Two 84 000 hectare rounds of broadcast baiting were undertaken in the western outer areas of the Lockyer Valley, Scenic Rim, Somerset and Ipswich in SEQ designated to be the first area to receive eradication treatment. 28 500 hectares were treated in other parts of SEQ in order to slow the spread of fire ants until eradication treatment could be applied in following years.

The third round of treatment planned in this area for 2017–18 was deferred, predominantly due to weather conditions, with higher than average rainfall during the period preventing the application of bait (deemed ineffective during wet weather). There were a number of other contributing factors, including delays in recruiting additional treatment teams. These implementation issues will be addressed prior to the commencement of the 2018–19 treatment season.

Early indications show that treatment is affecting the level of infestation with evidence of:

- fewer nests
- in-breeding
- reduced vitality of nests.

With biosecurity control measures in place to address the human-assisted spread of fire ants, compliance activities were escalated to ensure that these measures were being followed. Since the previous year, there was a significant increase in compliance checks, with 95 per cent of those checked found to be compliant. Although this indicates a good level of compliance with control measures, further work is needed to improve knowledge of, and compliance with, the control measures in place.

To raise awareness of the Program and garner support, strategic, targeted engagement with community and industry stakeholders is key to the Program's success. Efforts to better inform and communicate with the public about fire ants have driven a 27 per cent increase in public reporting of suspect ants over the last 12 months. Partnering with community and industry sectors is an ongoing priority to ensure early reporting, identification and management of fire ants.

Other challenges in 2017–18 included the detection of nine new infestations beyond the area of the Program's operation. These were destroyed and the surrounding area monitored to identify further possible infestation. Five of these detections, found in an area to the west of the current treatment area, pose a particular risk to the eradication efforts. Consideration will be given to applying eradication treatment to this area in 2018–19.

Building organisational capacity has been a focus throughout 2017–18. However, expansion and ramp-up of effort for the Program has challenged response timeframes. It has been necessary to update Program business and customer service systems to deliver the largest eradication program in Australia.

Business practices have improved and efficiency increased. They will require ongoing calibration as the Program progresses over the 10-year period.

The recent leasing of new headquarters will allow a consolidation of operations into a single, well-positioned location for both current and future treatment areas as the Program progresses. Relocation of all staff to the new headquarters is planned for completion by November 2018.

To reach the Program's eradication targets, additional staff have been recruited, including the appointment of key senior roles and the establishment of a dedicated planning and quality assurance section.

I am pleased to report that the Program has operated within budget, expending a total of \$34 174 million during 2017–18. Unspent funding of \$3.796 million has been carried forward to 2018–19.

On behalf of the national Steering Committee, I wish to thank the Program's staff for their work towards eradicating this pest of national significance.



Wendy Craik AM

Steering Committee Chair
National Red Imported Fire Ant
Eradication Program
South East Queensland

2017–18 key achievements

Annual progress on eradication activities throughout in South East Queensland

Treatment
190 000
hectares

across Areas 1 to 4

↑ Increase of
95%
from 2016–17
75 per cent of target

Direct Nest Injections
21 415
nests

↑ Increase of
79%
from 2016–17
89 per cent of budget

Planned surveillance
4500
hectares

(Areas 1–4 only)

↑ Increase of
165%
from 2016–17
45 per cent of target

Compliance
checks
534

↑ Increase of
734%
from 2016–17

Suspect ant samples
diagnosed
3260

✓ **65%** (2119)
positively identified
as fire ant

Reduction in
polygyne (multiple queen)
infestation

↓ **2.4%**
to **1.2%**
in 12 months

Public referrals

↑ Increase of
27%
since 2016–17

Immediate response to
detections outside the
operational boundary

9

Reports of
suspect fire ants
received

6755

Our mission

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

Our objectives

We will achieve our mission by fulfilling the Program's core objectives:

Objective 1

Reduce infestation until fire ants are no longer present in SEQ and ensure areas remain free from fire ants (through the implementation of eradication measures as outlined in the Ten Year Plan).

Objective 2

Prevent spread of fire ants to non-infested areas (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 SEQ region (following the process to declare proof of freedom described in the Ten Year 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 commitment

We are committed to fulfilling our mission by being:

- **science driven**—we integrate scientific expertise, risk-based analysis and current empirical evidence to determine treatments to suppress and eradicate fire ants
- **customer focused**—we enable and support our local agricultural industries to meet the needs of the domestic and international markets they serve
- **collaborative**—we partner with government agencies, industry and the SEQ community to protect and sustain our way of life
- **efficient**—we invest in contemporary technologies and practices to continuously improve our operations and maximise the Program's benefit to the public
- **flexible**—we adapt to the dynamics of our environment and improvise in order to overcome the challenges we encounter
- **empowered**—we invest in staff training and development to nurture a culture of high performance and responsibility.

Context

The fire ant is a pest of national significance that has an impact on wildlife, the environment, agriculture, animal industries, infrastructure, business and human health, not to mention the Australian way of life. All Australian jurisdictions have a vested interest in eradicating the pest, as the impacts are far-reaching across multiple sectors of the economy and community.

An eradication program in SEQ has been operational since 2001 in response to the discovery of fire ants in western Brisbane and Fisherman Islands. It has prevented the widespread environmental, social, health and economic impacts seen in other countries where fire ant has invaded.

The eradication of fire ants continues under the nationally endorsed Ten Year Plan, which commenced on 1 July 2017.

Our areas of operation

The **operational area** is defined in the Ten Year Plan as the ‘total area of known infestation confirmed by delimitation and adjusted for known and predicted infestation spread since completion of delimitation’ (five kilometres beyond all known infestation). For 2017–18, the visual representation of the operational area, the **operational boundary**, was drawn five kilometres around infestations detected from 1 July 2012 to 30 June 2017.

The operational area serves the important function of identifying the extent of Program activities and of indicating the area where infestation has been detected. A fire ant detection beyond the operational area is considered significant and elicits an immediate and thorough Program response.

To manage the eradication process under the Ten Year Plan, the operational area has been divided into four priority target areas (Areas 1–4). The plan focuses eradication activities in each area in turn, working from west to east.

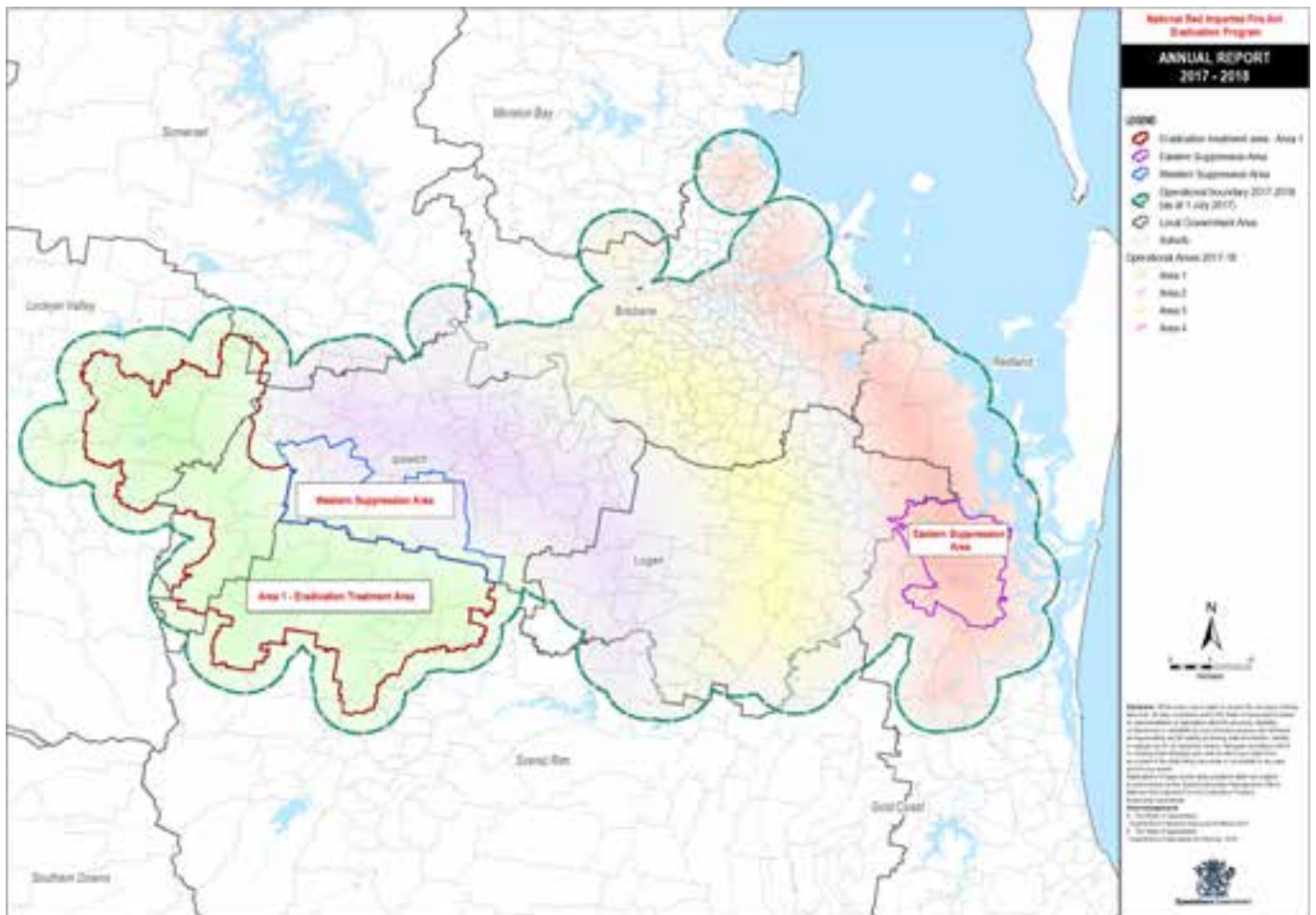


Figure 1: Map of the operational area for 2017–18

Refer to Figure 1 for a map of the 2017–18 operational area.

Area 1 is to the west of the operational area and is predominantly rural and agricultural land. The area also includes small communities such as Laidley and Forest Hill in the north, and Mutdapilly and Harrisville in the south. It contains high-economic-value agricultural and horticultural production regions, including part of the Lockyer Valley known as Queensland’s ‘salad bowl’. Almost all of this area is considered to be viable habitat for fire ant. Fire ant infestation is not only a threat to the production value of these regions, but the intensive farming activity also creates an environment at high risk of spreading fire ants further west.

The majority of the area is administered by the Scenic Rim Regional Council, Lockyer Valley Regional Council and Ipswich City Council, with a very small portion of the area in the upper north-eastern corner administered by the Somerset Regional Council.

Eradication treatment commenced within Area 1 in 2017–18. The treatment area, known as **Area 1 – Eradication Treatment Area**, extends two kilometres beyond all known infestation (a total of 84 025 hectares).

The area defined as the **Western Suppression Area** covers 19 484 hectares and forms the western part of Area 2. Almost all of this area is considered to be viable habitat for fire ant. Its western/south-western boundary directly adjoins much of the eastern boundary of Treatment Area 1. The area contains high-density infestations of fire ants, including many sites infested with the polygyne social form.

The area is predominantly rural and agricultural land, including smaller rural–residential holdings. It includes the communities of Lanefield and Rosewood in the north-west, the districts of Ebenezer, Willowbank and Purga in the north-east, and the districts of Mount Forbes, Mutdapilly and Peak Crossing towards the southern boundary.

Main watercourses include the Bremer River and its tributaries, especially Purga and Warrill creeks.

The Cunningham Highway runs through the eastern section toward Warwick in a north–south direction. Other main district roads are the Rosewood–Laidley and Ipswich–Rosewood roads towards the north, the Rosewood–Warrill View Road towards the west, and the Ipswich–Boonah Road running north–south, forming much of its eastern boundary.

The entire area is administered by the Ipswich City Council.

Areas 2, 3 and 4 are identified in the Ten Year Plan as areas to receive eradication treatment in later years of the Program, progressing from the west (Area 1) to the east (Area 4).

The area is dissected by major highways, including the Centenary, Cunningham and Warrego highways, and the Logan, Ipswich, Pacific and Gateway motorways, as well as arterial roads and suburban streets. There are significant earthworks and movement of soil and vegetation associated with upgrading of this infrastructure.

Areas 2, 3 and 4 are administered by the Logan City, Ipswich City, Brisbane City, Gold Coast and Redland City councils.

There is significant residential and commercial development occurring throughout this area, such as Ripley, Springfield Lakes, Bethania, New Beith, Yarrabilba, Warner and Brendale.

The area contains a comparatively high density of urban residential properties, as well as peri-urban and some larger rural properties. The majority of past infestations have been located in this area, south of the Brisbane River.

In the northern part of the Gold Coast (Area 4), a 13 579 hectare area has experienced high-density infestation and has been targeted for suppression treatment (**Eastern Suppression Area**).

Our activities

Treatment

To destroy fire ant infestation, depending on the circumstances, either an area is baited with an insect growth regulator (IGR) and/or a nest is directly injected with a non-repellent pesticide. The injection of the chemical insecticide *fipronil* directly into a fire ant nest has proven effective at destroying nests in a once-off application.

Bait is applied by field staff, using a hand-held spreader, distributing by manned all-terrain vehicle (ATV), or broadcasting aerially by helicopter. Baiting is ideally conducted when soil temperatures are greater than 20°C, and usually occurs between mid-September and May–June.

IGRs, also termed juvenile hormone analogs, affect the reproduction of the queen of the colony and the metamorphosis of the normal insect life cycle. IGRs used by the Program include *s-methoprene* or *pyriproxyfen*. *S-methoprene* is used up to the edge of waterways, whereas *pyriproxyfen* cannot be applied within eight metres of water (if applied by either hand-held bait spreader or ATV), or 80 metres if applied aerially. All baits used by the Program consist of corn grits impregnated with the active ingredient.

Eradication treatment involves multiple consecutive applications of broadcast baiting using an appropriate IGR. A single application of broadcast bait has an average efficacy rate of 80 per cent. In order for IGRs to work effectively, the chemical must be maintained within the colony at levels high enough to cause brood production to cease, and for periods long enough to allow the colony to age and die.

Published data from the United States of America (USA) indicates that broadcast baiting with IGRs has proven to be effective against fire ants¹ with reports indicating 80–95 per cent control within one to six months². A higher level of confidence in achieving eradication of a confirmed infestation is achieved through multiple rounds of treatment.

The optimal treatment regime for eradication is six applications of broadcast bait, which has an average efficacy rate of 99.994 per cent.

Fewer applications of the same broadcast bait treatment regime as above will result in suppression of infestation levels. Planned **suppression treatment** is an important component of the rolling eradication strategy outlined in the Ten Year Plan to reduce overall infestation.

Suppression treatment is focused around areas known to have experienced dense infestation that poses either a risk for further spread or a risk to Area 1, where eradication treatment has been applied.

To quickly address newly reported small levels of infestation, responsive treatment is undertaken involving **direct nest injection (DNI)** and baiting the surrounding area with an IGR. DNI is undertaken in instances where there is a risk to human or animal health and safety, to allow the continuation of business activity, where there is a threat to Program objectives, or if DNI is the most cost-effective option.

Surveillance

Surveillance is currently undertaken by field staff or by odour detection dogs. For field staff, surveillance is most effective in the cooler months when the ants build up their mounds. Odour detection dogs can work throughout the year. Remote sensing surveillance is currently under development, with testing scheduled for 2018–19.

Surveillance is conducted for different purposes and with different aims. To protect the operational boundary and the eradication treatment area, **planned targeted surveillance** is undertaken to monitor these areas. To monitor the level of infestation beyond the operational area, **sentinel sites** have been established as early indicators of infestation that is further afield and needs to be immediately addressed. **Delineation surveillance** is conducted out to 100 metres surrounding any new detection to determine the extent of the infestation. Finally, to ensure treatment has successfully resulted in the destruction of infestation, **post-treatment validation surveillance** is undertaken. This is predominantly undertaken by odour detection dogs, and priority is given to infestations that have been detected around the operational boundary.

1 Drees, B.M., Barr, C.L., Vinson, S.B., Gold, R.E., Merchant, M.E., Riggs, N., Lennon, L., Russell, S. and Nester, P. (1996) Managing imported fire ants in urban areas, pp. 18. *Texas Agricultural Extension Service Bulletin B-6043*.

2 Barr, C.L. (2000) Broadcast baits for fire ant control, pp.14. *Texas Agricultural Extension Service Bulletin B-6099*.

The 2017–18 Work Plan focused on commencing eradication treatment in **Area 1**, and conducting planned targeted surveillance surrounding and beyond this area to limit the potential for undetected infestations to impact on this broadscale treatment regime. All other Program activities supported this focus, with interim measures being implemented as the Program transitions to the full-scale operation required under the Ten Year Plan.

they know about or are expected to know about. In terms of fire ants, a biosecurity risk exists when dealing with the movement of fire ant carriers, that is, anyone involved in the movement of fire ant carriers has a GBO to ensure they don't spread fire ants.

Refer to Figure 2 for a map of the fire ant biosecurity zones.

Fire ant biosecurity zones

Fire ant biosecurity zones are in place to control the movement of fire ant carriers from the known infested area. The zone requirements apply to all those who live and work in the area and move fire ant carriers. In addition to the specific requirements for fire ant biosecurity zones, all Queenslanders have a general biosecurity obligation (GBO) under the *Biosecurity Act 2014* to manage biosecurity risks and threats that are under their control,

The two distinct forms of fire ant infestation are:

- **monogyne**—a low-density nest containing a single queen, with highly territorial behaviour
- **polygyne**—a high-density nest containing multiple related queens living in co-habitation.

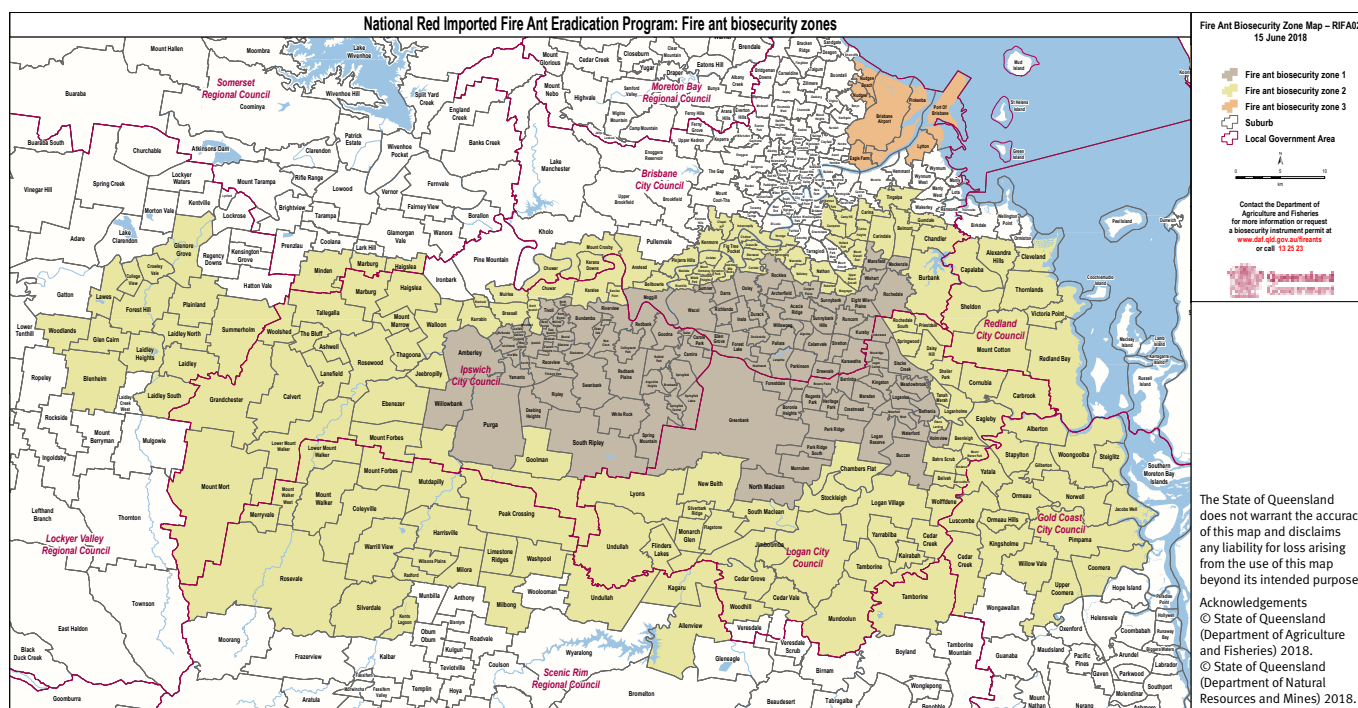


Figure 2: Fire ant biosecurity zones



Performance against objectives

Objective 1

Reduce infestation until fire ants are no longer present in SEQ and ensure areas remain free from fire ants.

Area 1

Planned eradication treatment

Treatment commenced in October 2017, a little behind schedule due to operational issues and inclement weather; however, by May 2018, at the end of the treatment season, approximately 98 per cent of the designated treatment zone inside Area 1 had received two rounds of broadcast baiting (i.e. 161 000 hectares—refer to Appendix 1: Annual data) using IGR.

A further two treatment rounds are planned for 2018–19.

Refer to Appendix 2: Map of completed planned treatment (2017–18).



Responsive treatment

During 2017–18, there were 601 high-risk, viable fire ant nests detected inside the Area 1 treatment zone before and during broadcast baiting. The location of these nests in areas such as schools, public access, and proximity to the operational boundary required a faster acting treatment than an IGR, and as such, DNI was undertaken. Delineation surveillance was also undertaken around these new detections to determine the extent of the infestation. This information allows the infestation to be managed effectively.

Refer to Appendix 3: Map of responsive treatment (2017–18) and Appendix 4: Map of new areas of fire ant detections (2017–18).

Treatment efficacy

The eradication treatment regime undertaken in 2017–18 is in the first year of the planned two-year treatment cycle. Assuming a treatment efficacy of 80 per cent for each round of IGR treatment, after two rounds the confidence level of success in destroying fire ant infestation is 96 per cent.

To test this in the field, advice was sought from a senior biometric scientist within the Department of Agriculture and Fisheries, who indicated that 100–150 nests from a minimum of 10–20 locations would be required to obtain statistically valid results. Monitoring sites will be selected in 2018–19.

Areas 2, 3 and 4

Suppression treatment

Completion of one of the planned two rounds of suppression treatment was achieved by the end of 2017–18. Approximately 29 840 hectares of treatment was undertaken over two areas:

- Western Suppression area
- Eastern Suppression area.

Refer to Appendix 2: Map of completed planned treatment (2017–18).

Responsive treatment

In response to new infestations detected, the Program directly injected just over 21 000 nests. While infestations that present the greatest risk to the public are typically dealt with within two to three days, infestations with a lower risk rating are likely to remain untreated for longer periods. In some cases, the period between the diagnosis of a nest and the nest being injected was up to 12 weeks. This delay in response times has been highlighted as an issue to address as a priority.

Delineation surveillance was undertaken for each new detection to determine the extent of the infestation, and to efficiently and effectively manage the treatment response.

Refer to Appendix 3: Map of responsive treatment (2017–18) and Appendix 4: Map of new areas of fire ant detections (2017–18).

Objective 2

Prevent spread of fire ants to non-infested areas.

Boundary management

A challenge in developing the 2017–18 Work Plan was to align the treatment areas with the extent of infestation. In 2017–18, eradication treatment was applied to at least two kilometres from all known fire ant infestations in Area 1. Surveillance was undertaken beyond this treatment area to assess whether there was further undetected infestation.

Seventeen sentinel sites were established early in the surveillance season that preceded the 2017–18 treatment season (prior to the establishment of the Program under the Ten Year Plan). Surveillance of these sites during 2017–18 found two to be infested—one at Beaudesert and the other at Lowood. Both of these sites have been cleared of infestation and, given the absence of further infestation found in the surrounding areas, no further Program activities have been scheduled at this stage beyond retaining the sites for sentinel purposes.

In May 2018 (at the beginning of the 2017–18 surveillance season), over 200 surveillance sites were selected to test the extent of the infestation. These sites are located within or outside the operational boundary. These surveillance sites will act as an early warning of infestation further afield. The results of this surveillance will be reported at the conclusion of the surveillance season in September 2018.

Refer to Appendix 5: Map of completed planned surveillance (2017–18).

Significant detections

Nine detections were identified outside the Program operational boundary during 2017–18 (refer to Table 1). Two detections (Lowood and Beaudesert) were found during Program surveillance at sentinel sites. The map at Appendix 6 provides a sense of the geographic distribution of significant detections, and their location relative to previous detections and the operational boundary.

Five of the detections were to the west of Area 1 in the Thornton Valley, and will be subject to planned eradication treatment during 2018–19. The Program has enacted a response plan specific to the Gold Coast after the Labrador detection in June and detections at Helensvale and Southport in the first few months of 2018–19.

In all instances, the Program responded to these detections with the resources and tools required to destroy the colonies and to verify the extent of the

infestation. The odour detection dogs have confirmed an absence of fire ants at the detections at Lowood, Beaudesert and Bridgeman Downs. Surveillance by odour detection dogs at Labrador is scheduled for 2018–19.

The remainder of the detections in the Thornton Valley will be formally cleared once the planned eradication treatment has been completed. It is expected that this treatment will be undertaken over the next two years.

The number of detections outside the operational boundary is in line with expectations that some outlying detections would be made in the early stages of eradication. Increased monitoring and surveillance on the edges of the operational area (particularly on the western boundary) and encouragement of public surveillance are strategies being used to affirm confidence in the treatment boundary.

Table 1: Significant detections found during 2017–18

Suburb	Date of detection	Distance to nearest known detection	Distance from operational boundary	Number of colonies & mounds	Social form	Flight or movement
Lowood	3/08/2017	10.00 km	5.00 km	5 colonies, 9 mounds	Monogyne	No strong evidence
Beaudesert	20/09/2017	11.00 km	6.00 km	2 colonies, 5 mounds	Monogyne	Likely movement
Bridgeman Downs	5/01/2018	4.00 km	1.40 km	1 mound	Monogyne	Confirmed flight
Thornton	4/04/2018	1.45 km	1.10 km	2 colonies, 7 mounds	Monogyne	Likely flight
Blenheim	5/04/2018	1.70 km	0.37 km	1 mound	Monogyne	Likely flight
Thornton	11/05/2018	1.45 km	2.40 km	1 mound	Monogyne	Likely flight
Thornton	11/06/2018	3.00 km	1.70 km	2 colonies, 5 mounds	Monogyne	Likely flight
Labrador	28/06/2018	8.60 km	7.50 km	1 mound	Monogyne	Likely movement
Townson	29/06/2018	3.80 km	3.60 km	1 colony, 5 mounds	Monogyne	Likely flight

Preventing human-assisted spread

During 2017–18, the Program undertook 534 compliance checks across the operational area with the aim of preventing human-assisted spread. Twenty-nine business whose activities involve the movement of, or storage of, fire ant carriers that may lead to spread of fire ants, including development and farming, were found to be non-compliant. The Program undertook actions to ensure that all non-compliant businesses rectified their practices to meet legislated requirements. The Program responded to seven serious non-compliances during 2017–18, all of which were satisfactorily addressed by 30 June 2018.

Below is a summary of serious non-compliances for 2017–2018:

- **Transport infrastructure**—conditions of the biosecurity instrument permit held by a major transport infrastructure provider were not being met. After discussion with the organisation and following direction by Program officers, compliance with the permit resumed.
- **Quarry/landscape industry**—resulted in company rectifying its operational practices (adequate mechanical disturbance) to become compliant with the requirements of its permit.
- **Unprocessed soil**—all identified issues (three companies found to be non-compliant) rectified following investigation, interviews and directions issued.
- **Poultry industry**—barrier treatment was not being correctly applied around poultry sheds. A biosecurity order was issued to ensure future compliance. All destinations receiving risk product (poultry manure) were surveyed for fire ants. No fire ants were detected at any destination sites. An industry review and engagement process was undertaken across the entire poultry industry to identify and address any issues of non-compliance.
- **Engineering and construction industry**—following directions by the Program, the company rectified its practices to become compliant with regulatory requirements (specifically through voluntarily treatment using a toxicant bait).

Refer to Appendix 7: Map of compliance checks (2017–18).

A compliance initiative focused on turf farms commenced following a detection with possible links to the movement of turf from the fire ant biosecurity zones. Compliance checks were undertaken at all known turf farms within the fire ant biosecurity zones. The checks involved close scrutiny of operator understanding and compliance with requirements relating to chemical application and record keeping. A number of recommendations came out of this initiative, ranging from greater levels of supervision and assistance to non-compliant businesses, development of record keeping templates, and investigation of the use of soil testing (to identify the level of chemical applied) to assist in the assessment of compliance.

With the commencement of the first round of eradication treatment, knowledge of, and compliance with, the treatment efficacy obligations (no disturbance of land or irrigation for 24 hours after treatment) were also tested. An engagement approach was taken, allowing landholders time to alter their practices to ensure compliance. High-risk properties (i.e. those likely to plough or irrigate) will be targeted for compliance checks next treatment season.

Compliance activities during the year have highlighted some inconsistencies between the controls in place in the fire ant biosecurity zones and the interstate market access requirements. These requirements are mainly applicable to the nursery industry, and include the movement of potted plants, hay and mulch. The Program will continue to work with the nursery industry and other state and territory governments to harmonise movement controls.

Objective 3

Provide evidence to demonstrate freedom from fire ant infestation in the SEQ region.

The odour detection dog teams conducted surveillance on 1089 sites. This work included delineation surveillance at sites with new detections of fire ants, planned surveillance activities and verification of treatment efficacy.

Post-treatment validation surveillance formed the majority of the odour detection dog work, with 950 sites across 60 suburbs surveyed to ensure that the treatment had been effective.

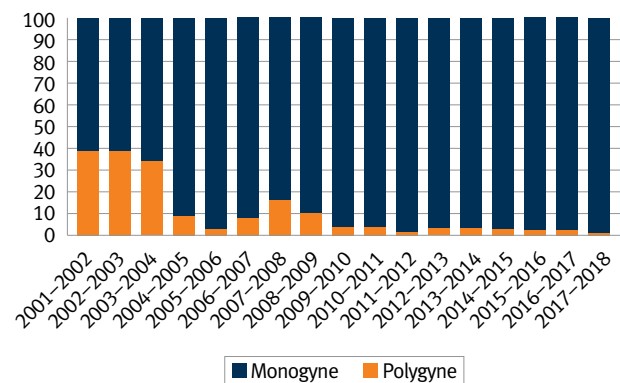
A population under pressure

The Program's scientific analysis during 2017–18 demonstrates that the genetic diversity of the SEQ fire ant population is deteriorating over time.

In polygyne colonies, the risk of spread is greater due to multiple queens in each nest. This can increase the genetic diversity of the overall fire ant population in Australia. As shown at Figure 3, there has been a significant reduction in the proportion of polygyne colonies detected since 2001. In particular, polygyne colonies are currently ~1.2 per cent of known site infestations, which is the lowest observed in the current SEQ infestation. This is indicative of the overall success of the Program, and likely a result of constant treatment pressure throughout the past 17 years of eradication efforts. In comparison, countries without an effective eradication program in place, such as the USA and Taiwan, report polygyne proportions of up to 40 per cent and 70 per cent respectively.

A reduction in genetic diversity often contributes to the eradication of a species due to a reduced ability to successfully establish and survive. In particular, decreased genetic diversity typically results in reduced resistance and adaptability; that is, the species is unable to cope with typical stressors (e.g. competition from other ants) or change over time to different environmental or climatic factors. Other indicators of reduced genetic diversity include a decrease in nest density (per unit area), in-breeding and reduced vitality within nests observed in the field. The latter two have been recorded in the SEQ population.

Figure 3: The proportion of sites infested with polygyne colonies in SEQ has reduced significantly, from 40 per cent in 2001 to 1.2 per cent in 2018



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.

Preventing the establishment of new incursions

Browsing ants

On 28 July 2015, browsing ant was detected at Darwin Seaport, Northern Territory (NT). As part of assistance provided to the NT Department of Primary Industry and Resources browsing ant (*Lepisiota frauenfeldi*) response, the Program cultured browsing ants and imprinted two existing fire ant odour detection dogs on browsing ant odour (funded through the Commonwealth's Stronger Biosecurity Quarantine Initiative).

From 29 August to 7 September 2017, Program personnel and one odour detection dog surveyed an area of approximately 20 hectares in and around the greater Darwin area for browsing ant. During surveillance, the Program's odour detection dog identified remnant browsing ants at two sites, and identified the location of a new nest at a low level of infestation.

From 30 May to 7 June 2018, Program personnel and one odour detection dog returned to Darwin to survey a further 15 sites for browsing ants. The area surveyed was approximately 18 hectares in and around the greater Darwin area. The 15 sites were determined to be free from browsing ant at the time of surveillance.

Brisbane Airport (2015) incursion

On 30 September 2015, fire ants were detected at the Brisbane Airport. Genetic analysis revealed that it was a new incursion into Australia, and a national response plan was developed. Six rounds of bait treatment were completed by June 2017.

In September and December 2017, the two final rounds of validation surveillance were carried out by field staff and odour detection dogs, with no fire ants detected.

In June 2018, following the completion of all response activities (six rounds of treatment and post-treatment validation surveillance), the proof of freedom report for the Brisbane Airport (2015) incursion was finalised and submitted to the National Biosecurity Management Consultative Committee for endorsement.



Provision of invasive ant response and eradication expertise

On 14 May 2018, fire ants were detected at a poultry farm in Waterford. It was identified that potential fire ant carrier product was moved from the farm to locations in New South Wales. The Program assisted the NSW Department of Primary Industries through the provision of the Program's odour detection dogs to assist with surveillance efforts.

On 30 May 2018, Program personnel and a team of odour detection dogs were deployed to undertake surveillance at macadamia farms in NSW where poultry manure from Waterford had been received. At the time of the surveillance activities, no fire ants were detected. Further surveillance by odour detection dogs is scheduled for July and August 2018 at other locations identified as receiving poultry manure.

Building collaboration and expertise

In 2018–19, a National Exotic Invasive Ant Scientific Advisory Group will be established to provide advice to the Steering Committee. This group will meet regularly to review and shape the strategic direction of the Program's scientific investment and effort, and collect and disperse knowledge to other organisations concerned with responding to new incursions of invasive ants.

The group will provide independent reviews of the science informing Program decision-making, including treatment and surveillance management. Importantly, this rigour will also ensure that treatment and containment restrictions, expressed through regulation and biosecurity controls, are appropriate to the risk, and that they limit unnecessary controls or costs on business or the community.

A focus for the Program for 2018–19 is to publish current insights through peer-reviewed articles and case studies. Collaboration with universities and research institutions will increase, leading to greater insights from the Program data.



Community engagement

The Program relies on the involvement of the community to support eradication activities, and works to raise awareness of fire ants and to promote and encourage community and industry participation in surveillance activities, reporting suspect ants, and compliance with risk mitigation measures to prevent the human-assisted spread of fire ants.

In 2017–18, the public provided 6755 reports of fire ants (a 27 per cent increase in public referrals since the previous year). This upward trend indicates the willingness of the community to assist with finding these pests.

The public reports resulted in 3260 samples received for scientific diagnosis. Of these, 2126 (65 per cent) were positively identified as fire ants. This high level of accuracy in identifying fire ants demonstrates good public knowledge and awareness of fire ants.

Over the year, the Program has established relationships with key personnel in local government areas within the operational area. At least once a month, the Program provided updates of activities and information about local fire ant detections to these stakeholders.

Local governments have assisted the Program by promoting fire ant awareness and surveillance in a number of ways:

- council libraries hosting fire ant displays and providing awareness materials to inform and engage patrons
- including fire ant awareness and identification information in staff induction programs
- regularly generating fire ant media and sharing their display space at events and local shows at no cost to the Program
- undertaking campaigns to keep their staff and community aware and vigilant.

As Table 2 shows, for the year 2017–18, general awareness training sessions exceeded yearly targets, with 89 training sessions delivered to 2664 attendees. Training was delivered to 206 different organisations, with the civil engineering and construction industry being the highest represented industry sector.

Training sessions were attended by people employed across seven regions of SEQ, including Brisbane, Ipswich, Gold Coast, Redlands, Somerset, Lockyer Valley and Scenic Rim. Over 500 local government employees were trained over the year, with the highest number of attendees from Brisbane City Council.

The Program also attends events such as the Royal Queensland Show (Ekka). This is an important activity for the Program, as it provides the opportunity for direct engagement with thousands of people to raise awareness of fire ants and the Program’s eradication activities. During Ekka 2017, 7500 visitors were directly engaged, with interactions between Program staff/volunteers and the public being very positive and supportive.

During 2017–18, the ‘Aka the Fire Ant Tracker’ education program was presented at 50 schools to 6295 students, with positive feedback from teachers and students.

Table 2: Community engagement activities during 2017–18

Community and stakeholder engagement activities		Target (year)	Actual at 30 June 2018
School program	School visits	70	50
	Students attending	7000	6295
General awareness training (includes both industry and community)	Training sessions provided	80	89
	Number of trainees	2000	2664
Events attend (event season March–September)	Number of events attended	70	61
	People directly engaged	20 000	19 972

Business development and capacity building



Improving governance and controls

Improving administrative and information systems to keep pace with the increased level and scale of the Program has been a challenge.

Auditing of Program controls and business processes has been commissioned to identify improvements. Key performance indicators also need to be reviewed to ensure measures of efficiency and effectiveness critical to a larger scale operation are in place.

Funding certainty has provided the opportunity to achieve savings by migrating to longer term supply contracts in areas such as vehicle fleet leasing (refer to Contracts section).

Relocation to new premises at Berrinba will see the consolidation of staff from the Richlands and Moggill sites into a single location that supports the operational needs, both now and into the future as eradication efforts shifts from the west to the east. The movement of staff will be finalised in November 2018.

Purpose-built diagnostic and experimental centres will improve the scientific capacity of the Program.



The establishment of operational depots in the west at Laidley and Mutdapilly also provides logistical efficiencies. The teams are close to the western treatment and surveillance areas, reducing travel time and increasing time spent on treatment and surveillance. Mt Walker and Yatala helicopter landing sites are within 15 minutes flying time of planned treatment areas.

A new Planning and Quality Assurance section was established in 2017–18. In the next financial year, this group will develop a system of performance evaluation and quality assurance to evaluate the Program's ongoing performance.

Information and communication technology systems

The Program continued to invest in information systems and technology projects to improve the integrity and efficiency of its information management. Investment to automate work allocation and streamline reporting occurred for aerial operations this year. Support of other field activities through mobile in-field computing is being implemented to improve efficiency and reduce cost.

A comprehensive review of the Program's information and communication technology systems commenced in 2017–18. An outcome of the review will determine whether efficiency gains warrant consolidating fire ant data systems into the program used by Biosecurity Queensland.

Meanwhile, enhanced functionality of the Fire Ant Management System (FAMS) currently used by the Program has included batch electronic communications to clients, delivery of automatic and real-time reports, and cataloguing genetic markers of fire ant samples. Continuous upgrades throughout the year have improved performance.

CaSES

During 2017–18, the Communication and Stakeholder Engagement Solution (CaSES) system—a new customer relationship management system—was under development. CaSES replaces the current client contact system.

Integration between CaSES and FAMS will improve the efficiency of handling public reports through to booking and treatment.

CaSES has a standard mobile application, enabling customer records and case information to be accessed in the field on standard-issue devices such as mobile phones and tablets.

The Program will continue to build capability and actively investigate other areas for further productivity and efficiency savings.

Remote Sensing Surveillance Project

Key to the success of the Program is locating areas of infestation and clearing areas through surveillance. Given the size of the treatment area, the ability to undertake surveillance through large tracts of land increases cost effectiveness.

During 2017–18, the Program continued to investigate the latest remote sensing technologies to effectively search for fire ants over large tracts of land. Remote sensing surveillance for fire ants previously involved the analysis of multispectral imagery—thermal, near infrared and visual—captured from cameras mounted on manned aircraft. This imagery was then run through an algorithm to ascertain likely areas of fire ant infestation.

To investigate modern remote sensing technologies and develop the Program's remote sensing capabilities through a research and development initiative, the Program partnered with Outline Global. Outline Global will be collaborating with IBM to develop the imagery analysis and detection algorithm using IBM's leading-edge artificial intelligence platform: IBM Watson Analytics.

Remote sensing surveillance trials will occur from approximately May 2019 to August 2019, with the aim of remote sensing surveillance becoming operational in May 2020. Remote sensing surveillance will be used to undertake broadscale surveillance during the cooler winter months to protect the Program's investment in treatment activities and provide evidence that areas that have received treatment are free from fire ant infestation. Remote sensing surveillance will also be used in areas which have not yet received eradication treatment to gain better insight into the location of fire ant infestations and enable a cost-effective and targeted treatment plan.

Our workforce

To deliver a significant boost in eradication activities, the Program began reviewing its workforce strategy. This included considering a continuous approach to recruit contract staff to better meet the needs and demands of the Program.

In 2017–18, the priority was to ramp up the operational arm of the Program, mainly in treatment, work scheduling, and planning and procurement roles. Employing additional treatment teams to cover weekend work when property owners are at home also enhanced operational performance.

The need to improve training and retention of short-term agency-sourced staff has also been identified as a key aspect to be addressed before the 2018–19 treatment season.

The total staffing profile has doubled from June 2017 to June 2018 (refer to Table 3).

Further recruitment and training of additional field crews will ensure readiness for the 2018–19 treatment season, starting in September 2018.

A new Planning and Quality Assurance section was established and key positions filled. Recruitment of additional compliance officers commenced in the second half of 2017. When finalised, this will enable a significant increase in compliance-related activity in 2018–19, and support collaboration with the community, local authorities and business to achieve a clearer understanding of obligations and enhanced compliance.

The Program also relies on volunteers. Currently, the Program has 26 volunteers. Individual commitments range from several months to 16 years. Volunteers generously share their experience and knowledge with new or less experienced members of the volunteer program. Through their invaluable contribution, they reinforce the authenticity of the Program's message—that fire ants are everyone's concern.

Table 3: Permanent, temporary and contract personnel numbers for June 2017 and June 2018

Personnel type	June 2017	June 2018
Permanent	54	103
Temporary	55	20
Contract	45	192
Total	154	315

Financial and significant contract performance

During 2017–18, the Program expended \$34.174 million of a total approved budget of \$37.97 million. Unspent funds of \$3.796 million for the year have been carried forward to 2018–19.

Refer to Appendix 8: Budget for the full 2017–18 financial report.

Contracts

For effective and efficient support and delivery of the Ten Year Plan, it is important that the Program secures long-term contracts for major service suppliers such as bait supply, helicopter charter and contract labour hire. As part of the overall \$411.4 million budget for the Ten Year Plan, \$130 million was approved for major service contracts.

The Program has been working to review high-cost, short-term contracts, including those for leased vehicle fleets, and procured services and materials. In August 2017, an extension of one year for the bait contract was approved, and approval was granted for a direct contract for helicopter charter, achieving savings of \$160 000 per treatment round.

A review of vehicle requirements and current negotiations for vehicle contract arrangements are anticipated to realise savings of approximately \$300 000.

Key risks

and other material issues



Managing development corridors

There is a strong correlation between infestation and urban development. The corridor from Brisbane to the Gold Coast and the development belt around Ipswich are particular risks.

Activity in the Gold Coast development corridor, incorporating the local authorities of Brisbane, Redlands, Logan and Gold Coast, is creating ideal habitat and a higher risk of human-assisted movement, as carrier materials, including soil, machinery and landscaping matter, are transported. Past flooding in the Logan region and continuing infrastructure development have also likely increased the density and extent of infestation.

Genetic testing has established that infestations have likely 'leapfrogged' from Richlands (Brisbane) to Pimpama through human-assisted movement, enabling further spread to Hope Island, Labrador, Southport and Wongawallan. Collaboration with industry to improve compliance with biosecurity obligations and limit the risk of human-assisted movement is vital.

Suppression across the corridor (hampered by rain and other factors) was less than programmed in 2017–18. Suppression also needs to be enhanced to contain spread and address infestation hot spots. The Gold Coast, Logan and Redland councils will be engaged to develop and implement a 'tailored' response in this area.



Managing public reports of suspect fire ants

Public 'eyes on the ground' and reports of suspect ants are essential to the eradication effort, particularly in highly urbanised areas where broad hectare aerial baiting cannot always be applied.

Following reporting, and if it is confirmed as fire ant, then a treatment response (baiting and/or DNI) is determined and scheduled. Actual treatment is prioritised against other reports, considering main factors such as risk, location and time of year.

Reflecting efforts to raise awareness about fire ants and the work of the Program, there has been a 27 per cent increase in public reporting of suspect ants in 2017–18. In response, the number and hours of field officers have been increased to achieve around a 179 per cent increase in responsive treatments by DNI from 12 000 in 2016–17 to 21 000 over the past year. Notwithstanding this effort, improving response timeframes, customer service and exploration of alternative response options is considered essential.



Addressing human-assisted movement

The level of development and farming activities present a high risk of human-assisted spread of fire ants in fire ant carrier material.

A more assertive regulatory stance, underpinned by efforts to increase both public awareness and collaboration across industry and local government, is needed to reduce the risk of human-assisted spread and failure to report suspect ants.

The legislated fire ant carrier movement controls will be reviewed to ensure they continue to adequately address risk. The area in which these controls apply (fire ant biosecurity zones) will also be reviewed to ensure alignment with the current extent of infestation.

Identified areas for improvement

Ten areas for improvement were identified during 2017–18 which will inform the development of the 2018–19 Work Plan:

1. improved Program planning and quality assurance, including better data capture, analysis and near real-time delivery of intelligence, for faster and smarter treatment deployment and reporting
2. improved field implementation by staff, including understanding and application of the right of entry powers, treatment protocols and training (especially for contract staff)
3. operational changes, including increasing working shifts (e.g. weekend crews) within industrial limitations, to best utilise physical assets and access to 'at home' property owners
4. adopting a more assertive compliance posture and internal capacity (from voluntary compliance to publicised prosecution). This includes realignment of the fire ant biosecurity zones and pursuit of a harmonised approach to intra- and interstate risk mitigation measures to ensure consistent controls, messaging and enforcement
5. improved systems for verification of compliance with the GBO, and more specific obligations (including interstate movement permits and protocols)
6. engagement with organic certifiers to resolve concerns about fire ant treatment on certified organic properties
7. engagement with the infrastructure, property development and local government sectors to improve collaboration and compliance
8. improved public communication and engagement (including by publicising hot spots and increasing public awareness, reporting, treatment and compliance with legislated controls and GBO)
9. developing reporting capabilities around improved qualitative and quantitative performance measures for key areas, including customer service response rate, efficacy and verification rates, and a shift beyond raw numbers of hectares or nests treated
10. increased broadscale treatment on high-density infestation sites located in the suppression areas.

Additional actions have also been identified to assist with meeting Program objectives:

- investigate incorporating fire ant risk management practices into development approvals, the public and private benefits of maintaining a development site fire ant free, and integrating development planning data into fire ant spread analysis and response planning
- publish current scientific insights and case studies for peer review, in particular those identified through genetic analysis of fire ant infestation
- explore opportunities to increase collaboration with universities and research institutions to distil greater insights from the comprehensive datasets currently available.



Assessment against Program review triggers



The Ten Year Plan contains review triggers that indicate when there is a possible threat to Program objectives. Triggers are framed around assumptions, which must remain true over the course of the Ten Year Plan for the Program to be successful.

A review of triggers was undertaken by the Program and the end of 2017–18. No trigger was found to have been met. Table 4 summarises the assessment against each trigger and the Program proposed response.

Table 4: Ten Year Plan review triggers

Assumption	Trigger	Assessment and response
The pest is delimited	There is new infestation discovered outside the current operational area.	<p>Recent significant detections suggest that improved proactive and reactive surveillance measures implemented in the first 12 months of the Program are effective at detecting new infestations within and beyond the declared operational boundary.</p> <p>The Program has proposed proactively treating (primarily by broadscale aerial baiting) an area 5 km beyond the recorded infestations in order to treat infestations discovered outside the 2017–18 operational area.</p>
Techniques for destruction of the pest are effective	There is a detection of the pest on a site that was deemed no longer infested following completion of clearance protocols, and there is evidence that the detection is a remnant infestation rather than a reinfestation.	Based on the best available information, existing treatment methods, including surveillance, monitoring and baiting, and DNI appear to be effective. Continuing evidence-based improvement in all treatment activities remains a high Program priority. This includes aggressively pursuing opportunities for improved efficacy and reduced costs (overall eradication cost, unit cost per treatment and opportunity cost). Continuous improvement and an adaptive management mindset are fundamental requirements to successfully delivering the Ten Year Plan.
Response plan costs are as budgeted	The cost of delivering the Ten Year Plan activities exceeds the proposed indicative budget for the Program over the life of the plan.	<p>Proposed changes in strategic direction (to include broadscale treatment of ‘outlying infestations’) will require significant changes to be reflected in the 2018–19 Work Plan, including potential delays in treatment of lower risk sites in Areas 2–4, which are in the search and suppress phase.</p> <p>Once developed and operational, the proposed involvement of third party providers and industry and government partners to treat infested sites could compensate for any treatment delays by the Program in the short term. However, there remains a need to consider the renegotiation of the phasing of funding to better align with required treatment activity.</p>
Response plan timeframes are as estimated	Response timeframes exceed those specified in the Ten Year Plan.	<p>Progress against established key performance indicators (KPIs) will continue to be monitored by the Steering Committee at its quarterly meetings to ensure the Program remains on track.</p> <p>There are some noted potential short-term delays arising from the recent significant detections and the need to address emerging issues.</p> <p>Response to these issues may slow progression east of Area 1 for a period. However, key medium- and long-term milestones in the Ten Year Plan are expected to be achieved.</p>

Appendix 1

Annual data

Table 1.1: Area 1 eradication treatment³

Planned eradication treatment is undertaken using broadscale bait treatment in a prioritised treatment area. In 2017–18, two rounds of IGR bait were applied in Area 1, with 160 616 hectares of land treated in total.

Target: total 252 000 hectares	Expected completion date	Area treated (ha) at 30 June 2018 ⁴	% of area treated	Status
Round 1 84 000 hectares	January 2018	80 550	95.9	Commenced October 2017; completed March 2018
Round 2 84 000 hectares	April 2018	80 066	96	Commenced February 2018; completed May 2018
Round 3 84 000 hectares	June 2018	Rescheduled to 2018–19	Not applicable	To commence 2018–19
Total		160 616		

Table 1.2: Areas 2, 3 and 4 suppression treatment

Planned suppression treatment is carried out using broadscale bait treatment in areas where high-density infestation has been identified. In 2017–18, one round of suppression treatment was carried out in the Gold Coast and Western Suppression areas, with 29 840 hectares treated in total.

Target: total 64 000 hectares	Expected completion date	Area treated (ha) at 30 June 2018 ⁵	% of area treated	Status
Round 1 32 000 ha	April 2018	29 840	93.25	Commenced January 2018; completed May 2018
Round 2 32 000 ha	June 2018	Rescheduled to 2018–19	Not applicable	To commence 2018–19

³ Refer to Appendix 4: Map of new areas of fire ant infestation.

⁴ These areas cannot be declared as clear of infestation until clearance activity finds no evidence of live infestation. Clearance activity is not scheduled to commence in Area 1 until 2019–20.

⁵ Monthly and YTD figures stated here are at the creation date of this report. Some data for the reporting period may be forthcoming, such that YTD data can include data not stated in previous monthly reports, but which has since been entered into FAMS.

Table 1.3: Newly identified infestation⁶

Each grid square referred to in the table below and shown at Appendix 4 depicts a 1 square kilometre area where new fire ant infestation has been found. The infestation found in each 1 square kilometre varies from one nest to many nests.

Number of grid squares showing infestation – start of Quarter 4 ⁷	New grid squares identified during Quarter 4	Total grid squares at 30 June 2018	Total grid squares showing new infestation (YTD)
1650	132	1782	412

Table 1.4: Responsive direct nest injections

DNI is when a pesticide is injected directly into a fire ant nest. It occurs in response to high-risk infestation and can be undertaken throughout the year.

Area	Number of nests injected during Quarter 4	Total nests injected at 30 June 2018	% of budget allocation (24 000) actioned (YTD)
Area 1	50	601	89
Areas 2–4	6516	20 809	
Outside	0	5	
Total	6566	21 415	

Table 1.5: Public reports

Under the *Biosecurity Act 2014*, a person must advise an appropriate officer of the presence of fire ants as soon as practicable.

Number of public reports received in Quarter 4	Total number of public reports at 30 June 2018	(a)
1827	6755	Suspect samples of ants collected by the National Program and sourced from public reports in Quarter 4
		1455
		(b) Suspect samples from (a) diagnosed as fire ants
		1086
		(c) Fire ants from (b) as a proportion of (a)
		75 per cent

⁶ Refer to Appendix 4: Map of new areas of fire ant infestation.

⁷ These areas cannot be declared as clear of infestation until clearance activity finds no evidence of live infestation. Clearance activity is not scheduled to commence in Area 1 until 2019–20.

Table 1.6: Planned targeted surveillance⁸

The objective of planned targeted surveillance is to monitor spread from the nearest detection to the operational boundary.

Surveillance (target 5000 ha)	Expected completion date/status	Hectares surveyed in Quarter 4	Total hectares surveyed at 30 June 2018	% of targeted area surveyed (YTD)
Area 1 ⁹ 2500 ha	June 2018	1266	3753	150
Areas 2–4 2500 ha	June 2018	176	719	29
Outside		1132	2384	
Total		2574	6856	

Table 1.7: Responsive bait treatment

Responsive bait treatment is undertaken in conjunction with DNI of infestations, in a radius of up to 100 metres around all fire ant mounds.

Area	Hectares treated in Quarter 4	Total hectares treated at 30 June 2018	% of budget allocation actioned (10 000 ha)
Area 1	433	533	5.33
Areas 2–4	1910	3770	37.70
Outside	1	47	0.50
Total	2344	4350	43.53

Table 1.8: Post-treatment validation surveillance

Post-treatment validation surveillance (PTVS) is undertaken by odour detection dogs to confirm whether treatment has successfully resulted in the destruction of infestation.

Area	Total hectares of PTVS in Quarter 4	Total hectares of PTVS at 30 June 2018
Area 1	0.37	6.65
Areas 2–4	185.50	611.67
Outside	0.00	39.21
Total	185.87	657.53

⁸ Refer to Appendix 5: Map of planned surveillance.

⁹ Area 1 and Areas 2–4 include adjoining areas outside the treatment boundary and the operational boundary in some instances.

Table 1.9: Responsive delineation surveillance

In response to new detections delineation surveillance of 100 metres is conducted to determine the extent of the infestation.

Area	Hectares subject to surveillance in Quarter 4	Total hectares subject to surveillance at 30 June 2018	% budget utilised (10 000 ha)
Area 1	191.50	792.75	7.90
Areas 2–4	1925.00	6597.98	66.00
Outside	1.78	1165.02	11.70
Total	2118.28	8555.75	85.60

Table 1.10: Planned sentinel site surveillance^{10,11}

Sentinel sites are used to describe areas that will be monitored for the presence or absence of fire ants. Surveillance of sentinel sites will be undertaken twice per financial year and only in cooler months.

Area	Total number of sentinel sites	Total number of sentinel sites surveyed as at 30 June 2018	Total number of sentinel sites with fire ant present as at 30 June 2018
Area 1 (external to)	7	7	0
Areas 2–4 (external to)	10	10	2*
Total	17	17	2

*Beaudesert and Lowood significant detections.

Table 1.11: Significant detections

Significant detections are detections located outside the operational boundary.

Number of significant detections during Quarter 4	Total number of significant detections at 30 June 2018
6 ¹²	9 ¹³

10 Surveillance of sentinel sites will be undertaken twice per financial year and only in the cooler months.

11 Sentinel sites are almost always outside the operational boundary. Areas described are outside the external boundary of the treatment areas shown in Appendix 5.

12 3 significant detections at Thornton. Significant detections also reported at Blenheim, Labrador and Townson.

13 Significant detections: 2017—Lowood and Beaudesert; 2018—Bridgeman Downs, Thornton (3), Blenheim, Labrador, and Townson.

Table 1.12: Compliance checks¹⁴

Any proposed movement of fire ant carriers that cannot comply with legislated requirements must hold a biosecurity instrument permit. Compliance checks are carried out to ensure businesses are complying with permits and the legislation.

Number of							
	Infested site checks	Suburb monitoring checks	Targeted compliance checks ¹⁵	Follow-ups	Minor non-compliance ¹⁶	Serious non-compliance	Total compliance checks
Quarter 4	7	163	69	7	11	1	246
2017–18	24	345	152	13	26	5 ¹⁷	534

¹⁴ Refer to Appendix 7: Map of compliance checks (2017–18).

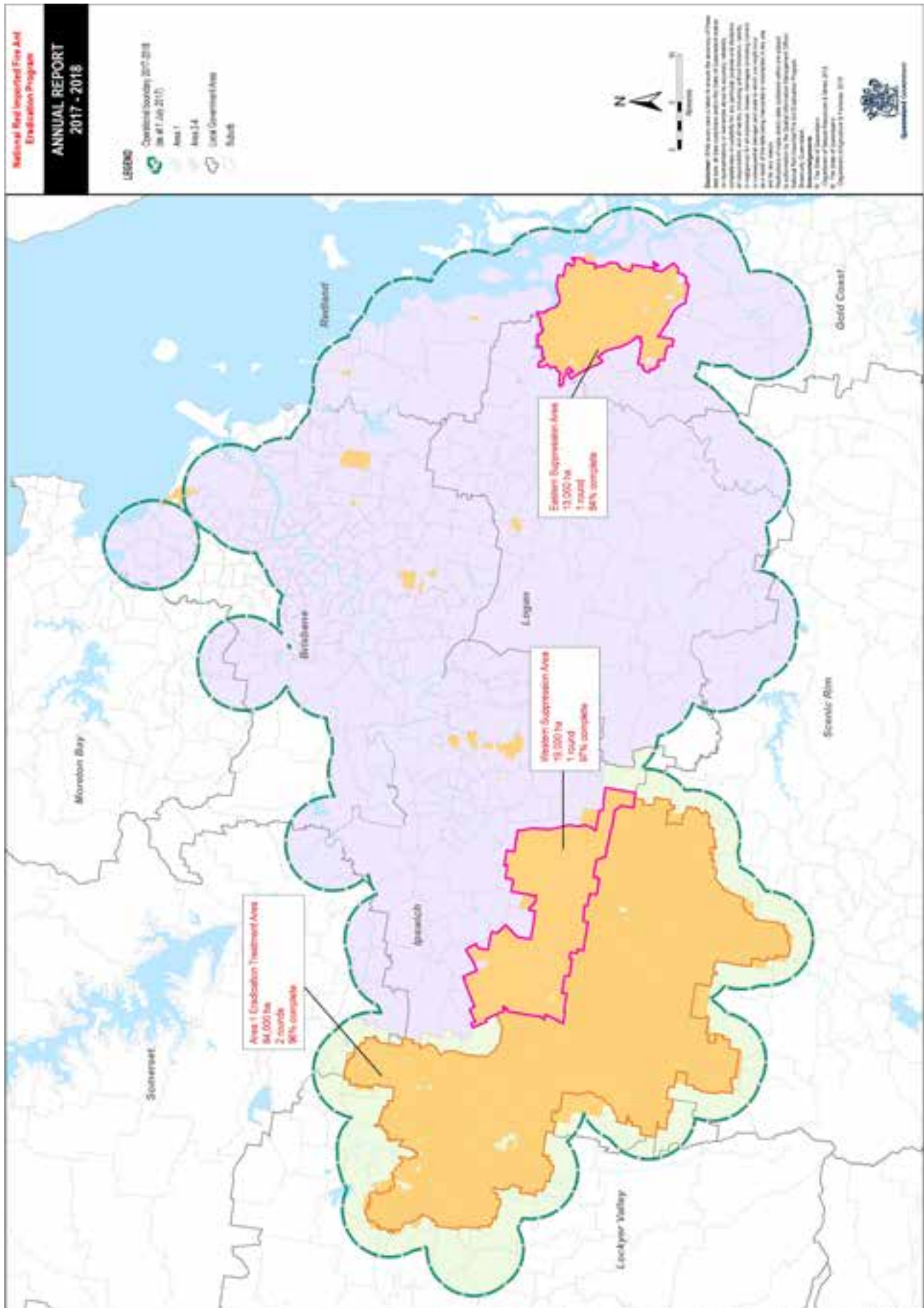
¹⁵ Biosecurity instrument permits, issued instruments, treatment GBO and compliance initiatives.

¹⁶ These will result in a potential 'follow-up'.

¹⁷ Two investigations carried over from 2016–17 and were resolved by October 2017.

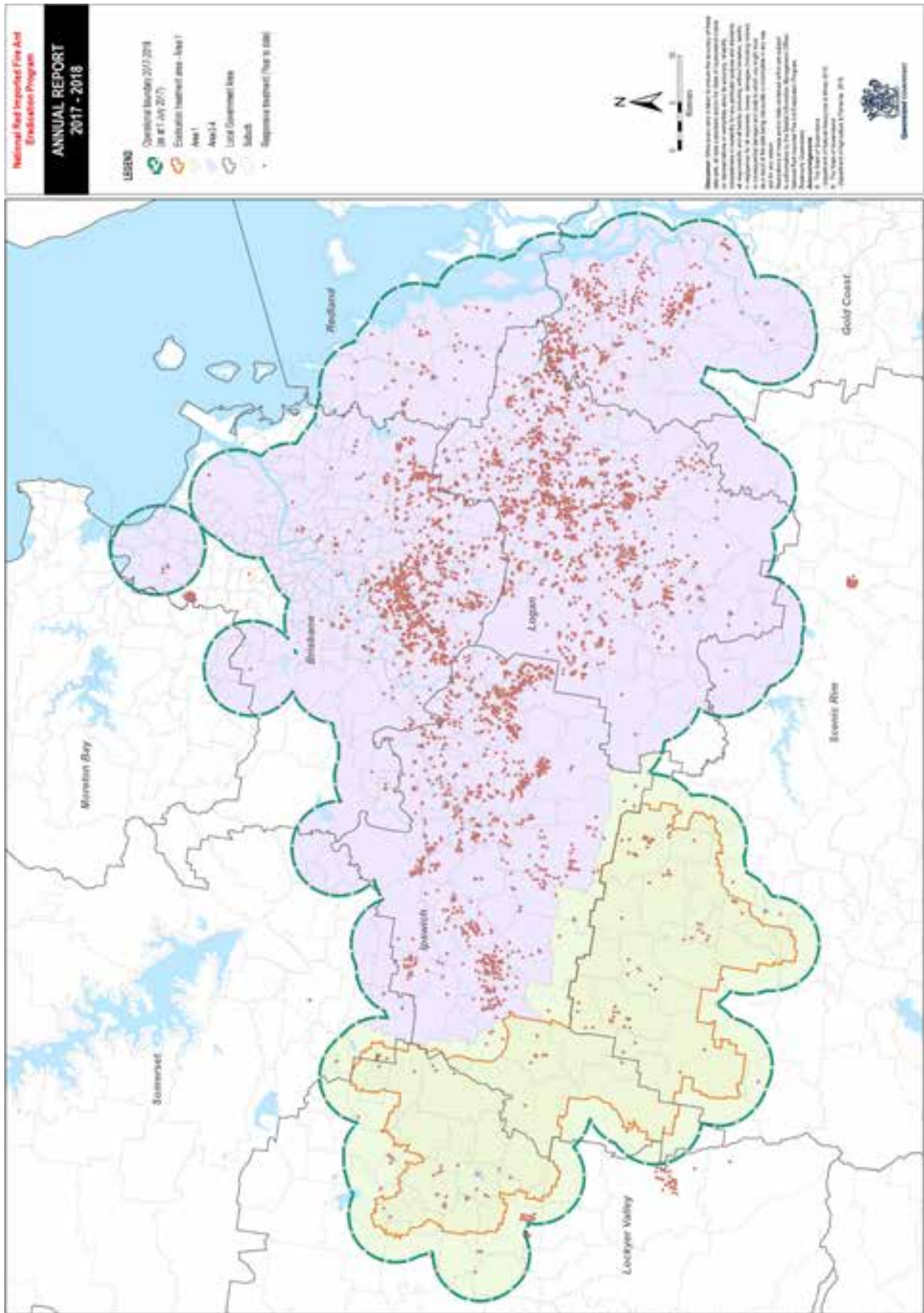
Appendix 2

Map of completed planned treatment (2017–18)



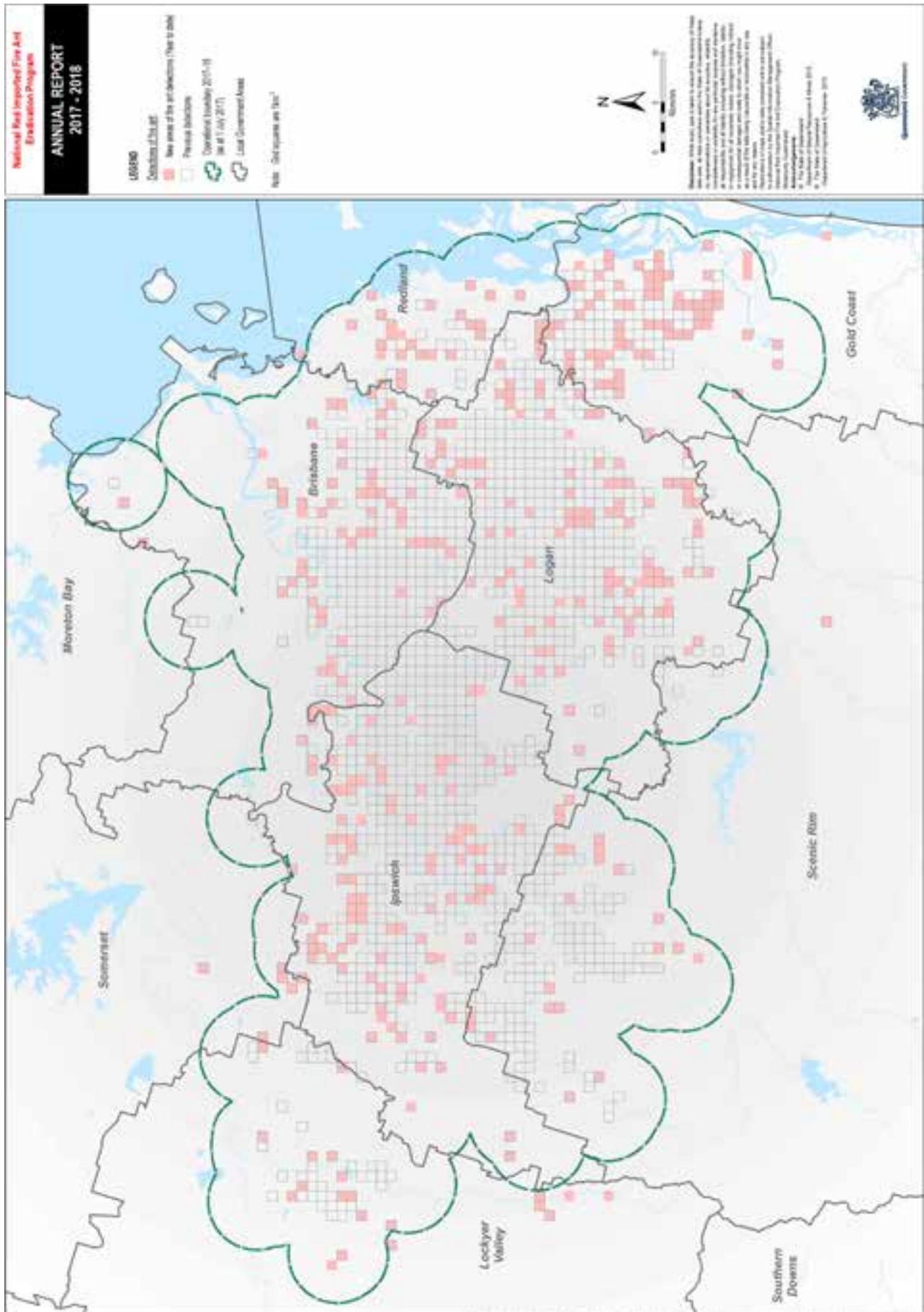
Appendix 3

Map of responsive treatment (2017–18)



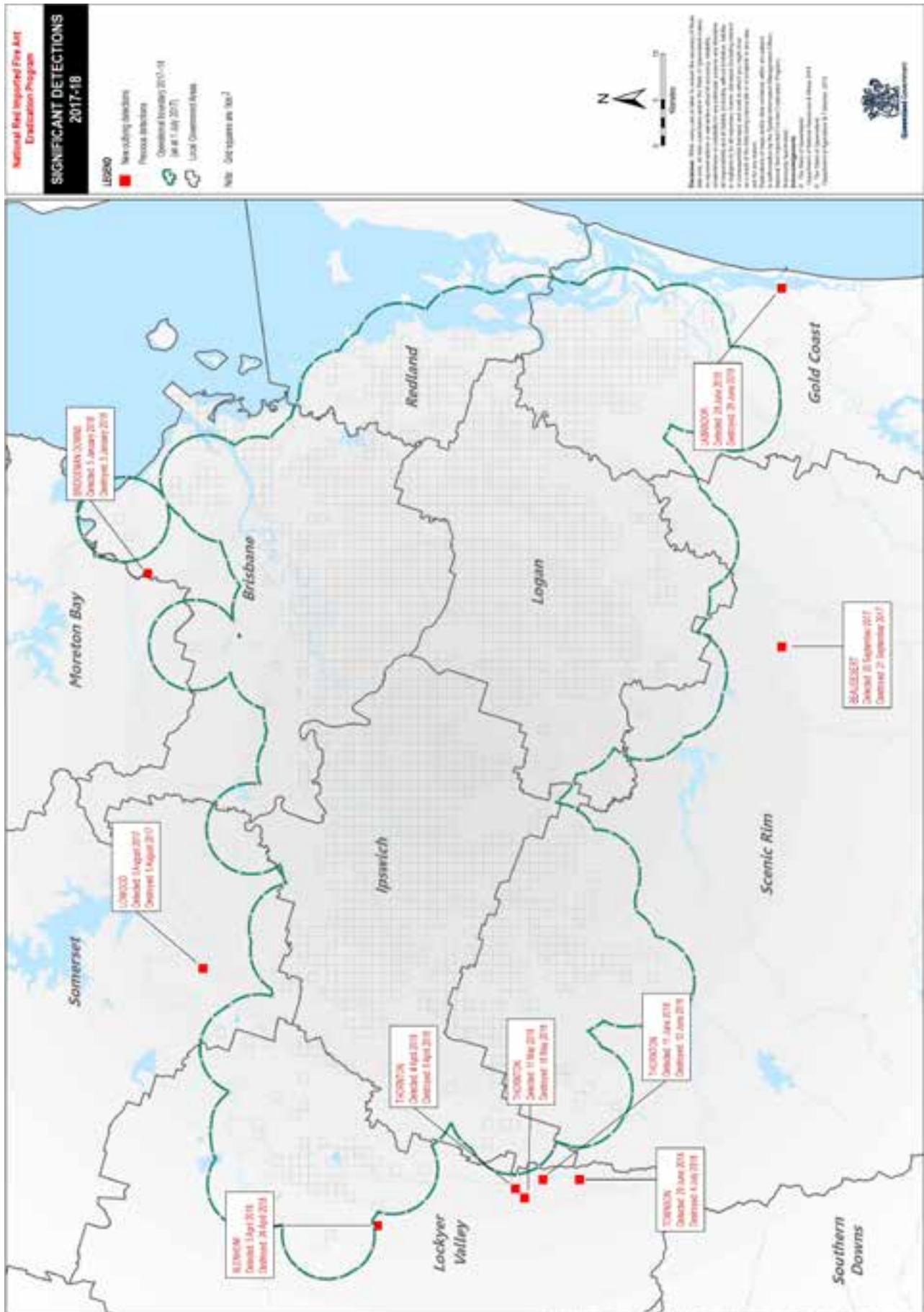
Appendix 4

Map of new areas of fire ant detections (2017–18)



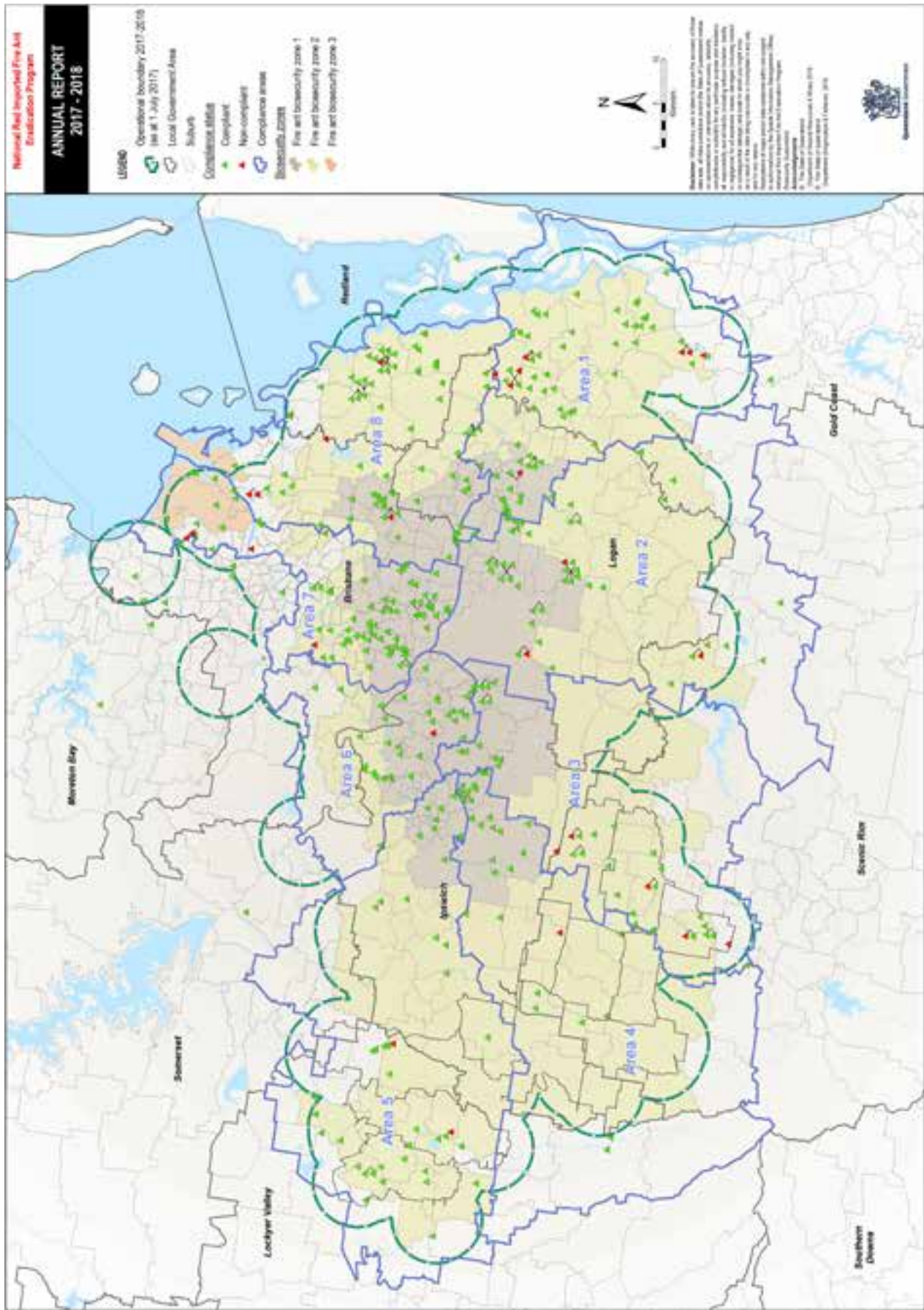
Appendix 6

Map of significant detections (2017–18)



Appendix 7

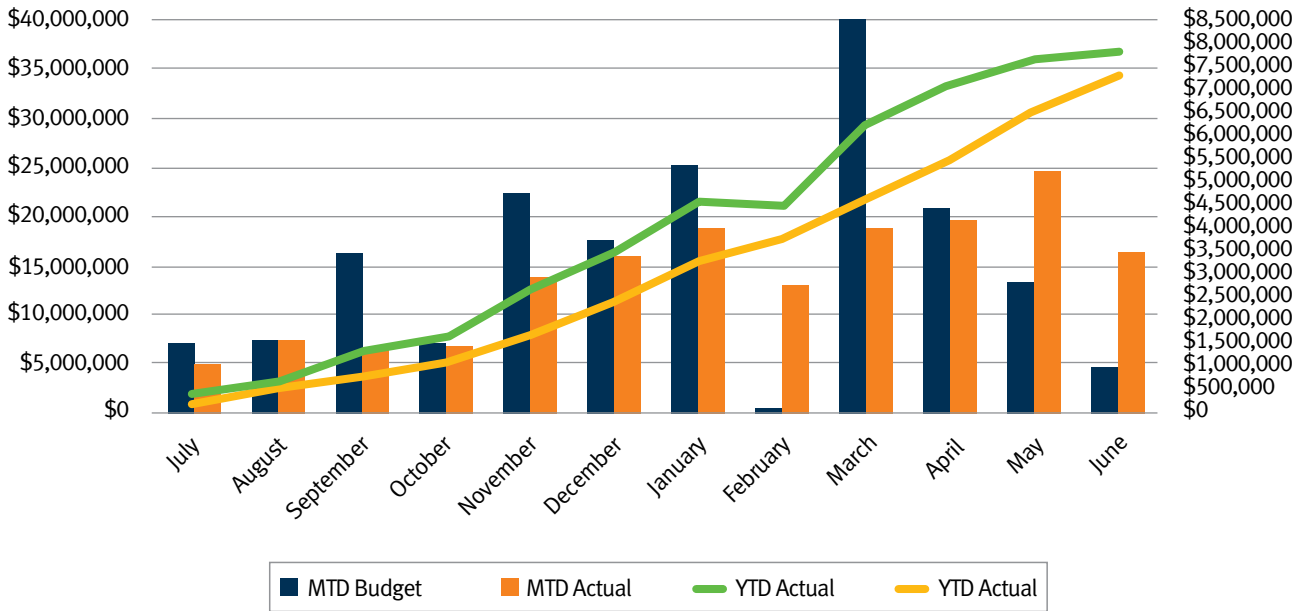
Map of compliance checks (2017–18)



Appendix 8

Budget

2017–18 Expenditure to budget trend



Income statement

Values							
Class	Subclass	Revised budget	YTD budget	YTD actual	YTD var (\$)	YTD Var (%)	Note
4. Revenue	41 – User charges	(15,105,000.53)	(15,105,000.53)	(13,611,332.65)	(1,493,667.88)	–	1
	45 – Grants from the Commonwealth	(18,999,999.25)	(18,999,999.25)	(17,086,784.64)	(1,913,214.61)	–	2
	46 – Grants and contributions			–	–	–	
	49 – Revenues from government	(2,908,600.70)	(2,908,600.70)	(3,475,600.70)	567,000.00	–	3
4. Revenue total		(37,013,600.48)	(37,013,600.48)	(34,173,717.99)	(2,839,882.49)	–	
5. Expenses	51 – Employee related expenses	10,043,659.93	10,043,659.93	8,764,417.00	1,279,242.93	–	4
	52 – Supplies and services	25,987,483.98	25,987,483.98	24,981,335.02	1,006,148.96	–	5
	53 – Depreciation, amortisation and deferred	110,666.60	110,666.60	89,411.59	21,255.01	–	6
	56 – Miscellaneous expenses	871,790.00	871,790.00	335,476.67	536,313.33	–	7
	57 – Asset writedowns, losses and decrements			2,929.01	(2,929.01)	–	8
5. Expenses Total		37,013,600.51	37,013,600.51	34,173,569.29	2,840,031.22	–	
Grand Total		0.03	0.03	(148.70)	148.73	–	

Operating result and budget notes

The operating result to 30 June 2018 is balanced as a result of accrued revenue adjustments to match expenses consistent with the agreed percentages of cost-share partners. The revised budget includes a reduction of \$956K, which relates to Queensland funds deferred to 2018–19. Unspent funds from 2017–18 of \$3.796M have been carried forward to 2018–19. Use of these funds is subject to Steering Committee approval.

Note	
1	User charges variance of \$1.494M relates to the matching of revenue and expenses with the agreed contributions of state and territory cost-sharing partners' portion of total expenses as at the reporting period.
2	Grants from the Commonwealth variance of \$1.913M relates to the matching of revenue and expenses with the agreed Commonwealth portion of total expenses as at the reporting period.
3	Revenues from government variance of \$567K relates to the matching of revenue and expenses with the agreed Queensland cost-sharing portion of total expenses as at the reporting period.
4	Employee related expenses variance of \$1.28M occurs as a result of delays in recruitment processes following approval of the Ten Year Plan and associated budget by the national Agriculture Ministers' Forum (AGMIN) on 26 July 2017. As a result of implementation of the revised response plan for 2017–18, the associated organisational structure and budgeted new positions have not occurred as soon as expected. The timing of AGMIN approval has resulted in delays in recruitment, particularly in field operations (\$280K), communications and engagement (\$284K), and policy and compliance areas of the Program (\$309K).
5	Supplies and services variance of \$1.0M is related to the implementation of the revised response plan for 2017–18. In addition to operating costs that are directly linked to the engagement of staff, there are other high-cost activities associated with ramping up the Program that show significant variance; the largest is \$3.5M in bait, which is a direct result of conducting a reduced two rounds of treatment. The reduced spend in bait is offset by an increased contractor spend of \$1.7M, largely related to recruitment of additional field teams and weekend work expenses arranged to ensure two rounds of treatment were completed in 2017–18. A further \$521K in additional expenses relates to information technology development of the CaSES system.
6	Depreciation and amortisation variance of \$21K relates largely to an extension in the useful life of a genetic analyser to 2020, resulting in reduced depreciation for 2017–18.
7	Miscellaneous expenses variance of \$536K consists of \$382K to offset expenses incurred by Qld in 2016–17 for ramp-up activities (expenses were incurred under the supplies and services category), \$111K relating to timing for program audits which are to take place in future years, and \$46K assigned to the remote sensing R&D project.
8	Asset writedowns, losses and decrements variance relate to obsolete PP&E stores written off under field operations.

Total expense variance by Program area

Program area	Revised budget	YTD budget	YTD expenses	Variance	Variance per cent	Note
Directorate	310,904	310,904	318,309	(7,405)	-2.38	1
Administration, procurement, WH&S, HR	4,098,280	4,098,280	3,846,366	251,914	6.15	2
Policy, governance	853,823	853,823	589,410	264,413	30.97	3
Compliance	917,631	917,631	743,773	173,858	18.95	4
Communications and engagement	1,371,879	1,371,879	1,146,949	224,931	16.40	5
Science	1,521,943	1,521,943	1,457,919	64,024	4.21	6
Planning and QA	1,440,400	1,440,400	1,614,113	(173,713)	-12.06	7
Planned and responsive eradication	24,218,080	24,218,080	21,037,713	3,180,367	13.13	8
Ramp up activities	704,720	704,720	1,356,134	(651,414)	-92.44	9
Remote Sensing Surveillance R&D	504,610	504,610	474,427	30,183	5.98	10
IT Development	1,071,329	1,071,329	1,588,456	(517,127)	-48.27	11
Total	37,013,601	37,013,601	34,173,569	2,840,031	7.67	

Note	
1	No material variance.
2	Variance of \$252K relates largely to timing of accommodation and lease costs for an anticipated move of the Program to a new site at Berrinba from Richlands and Moggill (\$287K).
3	Variance of \$174K reflects vacancies in staffing and contractors (\$160K) and funds unspent on Program audits, which are to take place in future years.
4	Variance of \$225K reflects vacancies in staffing and the impact of those vacancies on the ITP licensing spend as a direct result of vacancies.
5	Variance of \$225K occurs largely under employee related expenses (\$284K) and is due to delays in recruitment processes for positions funded from 1 January 2018. Salary underspends are slightly offset by increased utilisation of contractors (\$70K) while recruitment processes are finalised.
6	Variance of \$64K relates to delays in recruitment activity to fill funded positions, resulting in salary underspends totalling \$232K, offset by contractor engagements (\$144K) and increased expenditure on laboratory consumables in the genetics area of \$54K.
7	Variance of \$174K consists of salary related underspends of \$209K, offset by increased contractor resourcing engaged for operational planning (\$358K) and portable and attractive IT equipment purchases (\$23K).
8	Variance of \$3.2M relates largely to decreased spend on bait purchases (\$3.5M) as a result of completing 2 rounds of treatment in 2017–18. Further underspends occur under employee expenses (\$280K) as a result of delays in finalising recruitment processes and aircraft hire (\$228K). These items are offset by an increased spend on contractors (\$506K) and additional vehicle hire and fuel (\$175K).
9	Variance of \$651K relates to increased spend for contractors and temporary staff associated with the extension of project activity.
10	Variance of \$30K relates largely to timing delays associated with the procurement process to select a preferred supplier by the Program's panel of experts. The contract was awarded prior to the conclusion of the 2017–18 financial year.
11	The overspend of \$520K relates to the purchase of software (\$44K) and ITP expenses incurred for system development and maintenance works (\$521K). The increased spend under system development is a direct result of works required on the FAMS and the development of CaSES.

Appendix 9

Glossary

Term	Definition
Area 1	An area comprised of parts of the Lockyer Valley and western Scenic Rim Regional Council areas and a portion of the Ipswich City Council area. This area is located at the outer western and south-western extent of the operational area.
Areas 2–4	The area within the operational area from the eastern extent of Area 1 to Moreton Bay in the east, northern suburbs of Brisbane to the northern suburbs of the Gold Coast and Tamborine Mountain in the south.
Broadcast baiting	Broadcast baiting uses an insect growth regulator to destroy fire ant infestation.
Colony	A group of ants that are living together and depend on each other for reproduction and survival.
Community surveillance	Searching by the community, industry and other areas of government for fire ants. Also referred to as passive surveillance.
Delineation surveillance	Surveillance undertaken around new detections to confirm the extent of the infestation.
Direct nest injection	The injection of chemical directly into a nest or mound to destroy the nest.
Fire ants	Red imported fire ant or <i>Solenopsis invicta</i> Buren, 1972.
Fire ant biosecurity zones	Fire ant biosecurity zones have been established under the <i>Biosecurity Act 2014</i> in areas of SEQ where fire ants have been detected or where it is likely that fire ant infestation exists. Zone regulatory provisions restrict movement of fire ants and fire ant carriers to help prevent human-assisted spread.
Infestation (infested areas)	Areas which have had fire ants confirmed.
Monogyne	A social form of fire ant where each colony consists of a single queen and her offspring.
Mound	An above-ground structure that ants use for survival or reproduction that is associated with one colony of ants.
Nest	A structure that ants form and use for reproduction and survival. A nest may not always take the form of an above-ground mound, but usually includes sub terrain tunnels and chambers.
Operational area	Total area of known infestation confirmed by delimitation and adjusted for predicted infestation spread since completion of delimitation. The operational area will not remain static, possibly increasing initially as surveillance increases in Stage 1, and then decreasing as the areas with confirmed infestation reduce over the life of the Program.
Operational boundary	A 5 kilometre buffer around known infestations detected within a set timeframe. This boundary is reviewed on an annual basis.

Term	Definition
Polygyne	A social form of fire ant where a colony may contain multiple queens and their offspring.
Post-treatment validation surveillance	Surveillance undertaken following treatment to confirm or validate that all fire ants have been destroyed. This is also referred to as validation surveillance.
Program	National Red Imported Fire Ant Eradication Program in South East Queensland.
Regulation	Biosecurity Regulation 2016, which prescribes procedures that must be followed when moving or storing a fire ant carrier.
Remote sensing surveillance	Surveillance involving airborne cameras mounted on helicopters, which fly over broad areas to capture visible, near infrared and thermal images of possible fire ant mounds.
Significant detection	A new infestation discovered beyond the operational boundary.
Sentinel sites	Areas of land that will be used to monitor for the presence or absence of fire ants.
Suppression activities	The minimum required treatment and surveillance to contain and suppress spread, in accordance with the Program Treatment Protocol. Infestation in areas that are not in the current priority area receiving treatment will receive suppression treatment. The intent of suppression treatment will be to mitigate spread from and in the areas, which have not yet undergone focused and coordinated eradication activity.
Surveillance	An official process that collects and records data on pest occurrence or absence by survey, monitoring or other procedures.
Ten Year Plan	<i>Ten Year Eradication Plan for the National Red Imported Fire Ant Eradication Program South East Queensland 2017–18 to 2026–27.</i>
Treatment	The application of chemical solution, or substance impregnated with a chemical solution, for the purposes of destroying an infestation of red imported fire ant.
Treatment season	Treatment is undertaken during the warmer months when fire ants are more likely to forage. The season generally is from September to May.
Work Plan	Detailed plan outlining the eradication activities that will be undertaken in the upcoming financial year.

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National Red Imported Fire Ant Eradication Program
South East Queensland

