Department of Agriculture and Fisheries

National Red Imported Fire Ant Eradication Program – South East Queensland

3rd Quarter Report (January to March) 2017–18

Queensland Government

This publication has been compiled by Biosecurity Queensland, Department of Agriculture and Fisheries.

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CONTEXT

The National Red Imported Fire Ant Eradication Program (the Program) operates in South East Queensland under the *Ten Year Eradication Plan 2017–18 to 2026–27* (Ten Year Plan).

Implementation of the Ten Year Plan focuses on three core functions: treatment, surveillance and prevention of human-assisted spread. Science, communication and engagement underpin the performance of these core functions, along with the essential support of information services; administration; policy, governance, and legislation; and management.

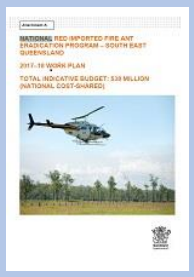
Activities are being carried out across four geographical areas. The 2017–18 effort focuses on delivering three rounds of eradication treatment, planned surveillance, and containment of red imported fire ants (fire ant) infestation to Area 1, which includes parts of the Lockyer Valley, Scenic Rim, Somerset and Ipswich local government areas.

In 2017–18, activity in Areas 2 to 4 has focused on suppressing the spread of fire ants and dealing with high-risk infestations and industry compliance with movement controls.

The operational area defines the geographical extent of planned fire ant treatment activity; however, targeted surveillance is undertaken outside the operational area in an effort to curb the potential for undetected fire ant infestation beyond its boundary. Responsive treatment of fire ant detections outside the operational area is expected to occur infrequently in the early stages of the Program. A map showing the four geographical areas of South East Queensland scheduled for treatment and surveillance under the Ten Year Plan is provided at Appendix 1.

National Fire Ant Eradication Program Ten Year Plan (2017–18 to 2027–28)

2017–18 Annual Work Plan



Third Quarter Report (2017–18)

EXECUTIVE SUMMARY

This quarterly report reflects progress towards fulfilling the measures and targets articulated within the 2017–18 Work Plan over the period 1 January to 31 March 2018 (the third quarter). Achievements against the schedule of work undertaken by the Program for the third quarter 2017–18 include:

Area 1 treatment and surveillance

- completing the first round of eradication treatment and commencing the second round of planned eradication treatment in Area 1 (page 3). Progress on total planned eradication treatment to date is illustrated on the map at Appendix 2
- undertaking targeted surveillance across an additional 1249 hectares (ha) within the 2–5 kilometre (km) zone of Area 1 and 329 ha of the broader South East Queensland (SEQ) area, with 97.4% of the 2–5 km targeted surveillance complete (page 3)

Areas 2, 3 and 4 treatment and surveillance

- commencing the first round of suppression treatment across Areas 2, 3 and 4 in January 2018, with 864 ha (2.7%) completed to date. Interruptions to the supply of casual labour to undertake suppression treatment have impacted on the Program's capacity to fulfil the 2017–18 Work Plan targets (pages 3 and 4)
- commencing quality assurance assessment on the distribution of responsive bait treatment to ensure treatment protocols are maintained (page 4)
- destroying an additional 3936 fire ant nests by direct nest injection (DNI) (page 4)
- surveying 21.7% of the total SEQ area, with locations subject to targeted surveillance over the year to date identified on the map at Appendix 3

Operational area boundary

- managing an infestation at Bridgeman Downs (significant detection), which was reported to the Program in January 2018 (page 4)
- surveying an additional three sentinel sites, with surveillance activities now completed on nine of the initial 17 sites (page 5). A summary of recent surveillance activity at sentinel site locations is at Appendix 5

Preventing human-assisted spread

- undertaking 123 compliance checks that resulted in five cases of minor non-compliance and three cases of serious non-compliance. All minor cases were satisfactorily resolved by the end of the third quarter (page 5). A map that shows the locations where compliance checks were undertaken during the third quarter of 2017–18 is at Appendix 6

Community surveillance

- receiving 2301 reports of suspicious ants from the general public, which yielded just over 1400 samples from the public for diagnosis by the Program (page 6)

Communication and engagement

- undertaking a range of community and industry engagement activities, including on-site fire ant training, school liaison, and attending community events to promote the Program. Progress on these activities is provided in Appendix 8

Science research and development

- trialling insecticides for use by turf farms; testing samples of fire ants for genetic and social form assignment; evaluating the efficacy of responsive surveillance (odour detection dogs); investigating the effectiveness of responsive surveillance training materials; and continuing to engage with the organic certification body to foster acceptance of s-methoprene (pages 6)
- continuing negotiations with the preferred supplier for the remote sensing surveillance tool ahead of seeking approval to proceed with the project pilot (page 7)

Planning, processes and systems

- revising the work plan for the current treatment season and planning the scope of work required in 2018–19 (page 8)
- improving the functionality of Fire Ant Management System (FAMS) through: enabling transmission of multiple SMS messages to clients regarding treatment schedules; improving the cataloguing of fire ant genetic markers; delivering automated reports to replace manually compiled job lists; upgrading the Digital Cadastre Database to ensure property information is current; and upgrading processing software for faster performance and data retrieval (page 8)
- collaborating with the Earth Systems Research Institute (ESRI) on investigating a proof-of-concept pilot for real-time data entry (page 8)

Policy, strategic planning and governance

- convening the Program Steering Committee on 7 February 2018, and progressing the development of key policy strategy and planning documents. Updates on progress of work is provided at Appendix 9
- initiating a review of the Program's risk exposure and risk management approach relating to corporate governance and operational delivery (page 9)

Business support

- monitoring expenditure on Program activities, with quarterly expenditure being less than budgeted expenditure over the quarter. The impact of the Program's delayed commencement of eradication treatment, and lower than forecast expenditure on staff recruitment, have contributed to this under spend, which is forecast at $7.5 m (page 10)
- ongoing recruitment in the areas of Community and Stakeholder Engagement; Science; Operations; Policy, Legislation and Compliance; and Systems and Technology Innovation (11 positions in total)

Taskforce and program ramp-up

- continuing negotiations for short-term lease arrangements with the Berrinba site landlord to allow progressive occupancy of Program staff from 2 April onwards (page 11)
- progressing establishment of a new ant colony facility through ongoing negotiations with key Queensland government agencies (page 11).

AREA 1 TREATMENT

Planned eradication treatment

Annual target: Treat approximately 84 000 ha per round (252 000 ha over three rounds)

Across the range of treatment activities undertaken as part of the eradication effort (see Table 1), the first round of treatment has been successfully deployed. To date, 96% of the total treatment area (80 304 ha) was treated at the end of March 2018. The remaining 3696 ha was not completed due to delays caused by prolonged wet weather in the first quarter. These delays required the Program to revisit its 2017–18 planned treatment target, and the Program now aims to complete two of the three planned eradication treatment rounds by the end of the 2017–18 treatment season. To offset this reduction in planned treatment, increased monitoring within Area 1 will be undertaken to ensure the treatment applied to date has been effective.

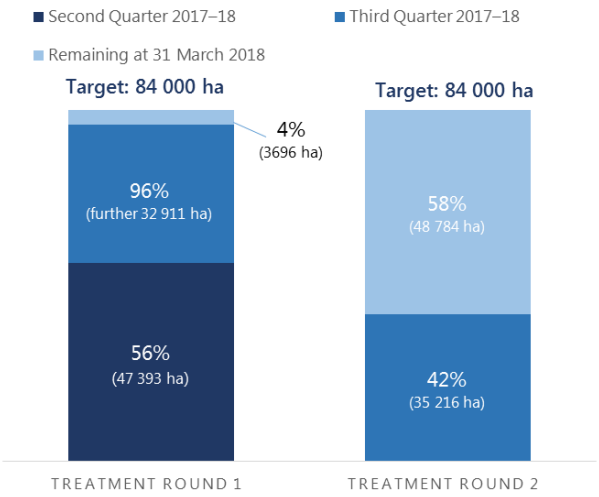


Figure 1: Progress of treatment rounds at the end of the third quarter 2017–18

Round two of treatment commenced in February 2018, with 42% of Area 1 treated by 31 March 2018. This round of treatment will be complete before the end of the 2017–18 treatment season.

Table 1: Breakdown of bait treatment methods employed for eradication treatment in the year to date

METHOD OF BAIT DELIVERY	ROUND 1 % OF AREA AT 31 MARCH 2018	ROUND 2 % OF AREA AT 31 MARCH 2018
Aerial (air)	85	40
Foot	4	1
All-terrain vehicle	0.4	0
Buffering	6	1
Total	95	42
Target (ha)	84 000	84 000

Responsive treatment

Annual target: To destroy all new infestations whether destruction is through planned treatment activities or direct nest injection (DNI) in conjunction with broadcast baiting

The primary method of eradication in Area 1 is planned aerial bait treatment, with responsive treatment only undertaken when an infestation presents a high risk to public safety. Responsive treatment in Area 1 is therefore kept to a minimum, as Area 1 is the designated priority treatment area, and will receive repeated applications of eradication treatment over 2017–18 and 2018–19. During the third quarter, only 28 DNIs of the chemical *fipronil* were carried out. The map at Appendix 2 shows those Area 1 locations that received responsive treatment, and areas where planned eradication treatment has been completed for the year to date.

AREA 1 SURVEILLANCE

Responsive surveillance

All new detections receive the minimum amount of delineation surveillance of 100 m to assess the extent of infestation around fire ant colonies that have received responsive bait treatment (see Responsive treatment section above). Over the third quarter 2017-18, delineation surveillance around newly detected infestations in Area 1 was minimal (38 ha surveyed to date). This is due Area 1 undergoing planned eradication treatment, with multiple rounds of planned eradication treatment to follow in 2018-19.

Planned targeted surveillance [1]

Annual target: Survey 5000 ha, including a minimum of 2500 ha within the 2 to 5 km target surveillance zone of Area 1

Between January and March 2018, planned surveillance was undertaken across 1249 ha in locations that border the southern and western boundaries of Area 1. Specifically, planned surveillance is carried out within the 2–5 km zone between the inside boundary of the operational area and the external boundary of the Area 1 treatment zone. Total planned surveillance of Area 1 completed to date is 2435 ha (97.4% of target 2500 ha).

The map at Appendix 3 highlights the locations where planned surveillance was undertaken of Area 1 during the third quarter.

AREAS 2, 3 AND 4 TREATMENT

Suppression treatment

Annual target: Treat approximately 32 000 ha per round (64 000 ha over two rounds)

Suppression treatment will be applied to up to 19 500 ha throughout the western Brisbane suppression area (Area 2), and a further 14 000 ha in the Gold Coast suppression area (Area 4). In the year to date, suppression treatment has been undertaken across 6624 ha in the western Brisbane area, and 864 ha in the Gold Coast suppression area. Additionally, a small amount of ground-based planned suppression treatment was carried out beyond Area 1 in the Ipswich, Gold Coast and Logan local government areas during the third quarter.

1 The majority of planned targeted surveillance is undertaken between June and August each year

The retention of casual field staff and interruptions to the supply of casual labour to undertake suppression treatment (i.e. performance and suitability issues) has impacted on the Program's capacity to fulfil the 2017–18 Work Plan targets. In light of this situation, preparation of a revised eradication and suppression treatment plan for the remainder of the 2017–18 treatment season is underway. Under the revised plan, the Program will complete only one of the planned two rounds of suppression treatment in Area 2 by the end of 2017–18. This round will focus on aerial treatment initially, with ground treatment to follow should time and minimum temperatures permit. The revised plan not only provides for increased monitoring in Area 1 to ensure treatment rounds to date have been effective, but also additional surveillance of the Area 1 outer perimeter as a precaution against infestations spreading beyond the Area 1 planned treatment area.

Responsive treatment

Annual target: Destroy all new infestations whether destruction is through planned treatment activities or DNI in conjunction with broadcast baiting

Use of DNI is required alongside the application of bait using an insect growth regulator (IGR) on infestations found outside Area 1 but within the operational area boundary, and there is capacity to treat 10 000 ha with responsive bait treatment over 2017–18. Table 2 below details the number of new infestations detected and DNI to date across SEQ (excluding the Area 1 treatment area).

Table 2: New detections and nest destruction by the Program on a quarterly basis to 31 March 2018

NEST INJECTIONS	Q1	Q2	Q3
Nests untreated (carried over)	-	5478	3453
Number of (new) infestations/nests detected	10 763	1722	2731
Less: nests destroyed via DNI	-5285	-3747	-3936
Remaining nests to be treated	5478	3453	2248

Responsive bait treatment conducted over year to date is presently undergoing a quality assurance (QA) assessment to ensure all applications of IGR have been applied according to the treatment protocol. IGR is rendered ineffective in wet conditions, and the prolonged wet weather over the second quarter and early January 2018 has hampered the Program's ground baiting efforts. Outcomes of the QA assessment will be available in early 2018–19.

Table 3: Area of ground treated with responsive bait treatment over the year to date

RESPONSIVE BAIT TREATMENT	Q1 (ha)	Q2 (ha)	Q3 (ha)
Area of ground treated	382	806	982

The map at Appendix 4 highlights those locations within the operational area where infestations have been detected over the third quarter 2017-18.

AREAS 2, 3 AND 4 SURVEILLANCE

Planned targeted surveillance [2]

Annual target: Survey 5000 ha, including a minimum of 2500 ha within the 2 to 5 km target surveillance zone of Areas 2, 3 and 4

Between January and March 2018, planned surveillance was undertaken across 329 ha within the 2–5 km zone of Areas 2, 3 and 4. This brings the total area of targeted surveillance in Areas 2, 3 and 4 to 543 ha for the year to date. A total of 24 new detections were made by Program staff. The map of surveillance activity at Appendix 3 indicates the locations of these positive detections.

Responsive surveillance

Between January and March 2018, responsive delineation surveillance was undertaken across 1367 ha in connection with 3936 DNIs of fire ant nests (see Table 2). In the year to date, delineation surveillance has been carried out across 5044 ha in total.

Post-treatment validation surveillance

All outlier detections, significant detections and outlying infestations receive validation surveillance in accordance with Program protocols. Between January and March 2018, post-treatment validation surveillance was undertaken across 133 ha. In the year to date, the total area subject to post-treatment validation surveillance is 433 ha.

OPERATIONAL AREA BOUNDARY

Significant detections

Annual target: Detections of importance receive extended treatment, surveillance and other Program activities as outlined in Program protocols

At the beginning of the third quarter, a fire ant infestation was discovered on the edge of a sports field in Bridgeman Downs, north of Brisbane. The infestation was located approximately 1.4 km from the operational area boundary. The Program's response to this detection involved:

- nest inspection by Program personnel, which revealed only worker ants and worker pupae. Subsequent genotyping revealed the nest was the outcome of nuptial flight between a queen from the Bracken Ridge infestation and a male from the Fitzgibbon infestation
- nest injection with *fipronil* and simultaneous application of IGR out to 10 m from the nest took place during inspection by Program personnel. A second round of IGR was applied to a radius of 500 m around the nest one week later
- delineation surveillance of 86 ha around the site's perimeter was also undertaken, with additional targeted surveillance of 236 ha completed on adjacent high-risk sites. No further infestations of fire ants were identified in those areas of land surveyed adjacent the nest.

Total cost of the Program's response was $135 318.

[2] Refer to Footnote 1

Sentinel site surveillance

Annual target: Survey 17 sentinel sites (sentinel site areas or sentinel site locations) across the entire perimeter of the SEQ infested area

During the 2017–18 year, sentinel sites are being used to provide the Program with intelligence about the presence or absence of fire ants in areas beyond the known areas of infestation. Consistent monitoring of these sites yields a reliable source of data with for determining the likelihood of infestation.

Between January and March 2018, three more sentinel sites were surveyed, with surveillance now complete on nine of the 17 sentinel sites. In March 2018, a decision was made to abandon the Keperra site due to its inaccessibility for surveillance by Program staff and odour detection dog teams. In view of this, the adjoining suburb of Warner has been included as a substitute sentinel location.

A detailed breakdown of the current status of each sentinel site is provided at Appendix 5.

PREVENTING HUMAN-ASSISTED SPREAD

Annual target: Support the Program's aim of eradication by monitoring compliance with and enforcing the legislated movement controls

During the third quarter, 123 compliance checks were undertaken across 94 organisations that yielded five cases of minor non-compliance and three cases of major non-compliance. Appendix 6 provides a map that shows the vicinity in which these compliance checks were carried out, and a breakdown of these organisations (by sector or fire ant carrier) is provided at Appendix 7.

Table 4: Summary of actions regarding case investigations of non-compliance between January and March 2018

Major/ Minor	Type of Breach (BIP/GBO)	Action by the Program	Remedial action by client	Status
Minor				
1	General biosecurity obligation (GBO): failed to comply with post-treatment requirement not to interfere with bait.	Advised client in Area 1 the Program will be in contact prior to next round of treatment as a reminder of their GBO. Follow-up in April 2018.	No further ploughing of paddocks in the 48 hours after treatment.	Closed
2	GBO: received mulch without a permit.	Advised client that movement of mulch requires a biosecurity instrument permit (BIP), and advised client to apply for a BIP.	Client undertook to comply in future.	Closed
3	GBO: moved mulch without a permit.	Advised client that movement of mulch requires a BIP, and advised client to apply for a BIP.	Client applied for BIP.	Closed
4	GBO: moved mulch without a permit.	Advised client that movement of mulch required a BIP.	Client undertook to comply in future.	Closed
5	GBO: moved hay without a permit.	Low risk; moved to site in close proximity where it is converted to bagged mulch via rigorous processing. Advised client to apply for a BIP.	BIP applied for and issued.	Closed
Major				
1	BIP: not compliant with terms relating to mechanical disturbance of road profiling.	Advisory letter issued and treatment planned at receiving site. Program staff to meet with client and is waiting for meeting confirmation.	Client has made some enquiries about disturbance options.	Open
2	BIP: not compliant with terms regarding mechanical disturbance of quarry material and soil blends.	Follow-up visit by senior Program staff to assess compliance and negotiate outcome.	Client has made changes to internal procedures to ensure future compliance with BIP.	Closed
3	GBO: movement of soil without a permit.	Initial investigation undertaken. All relevant parties interviewed. Advisory letters to be issued.	Clients undertook to comply in future and change policy to ensure compliance, and has communicated with > 250 subcontractors to make them aware of their GBO obligations.	Open

COMMUNICATION AND ENGAGEMENT

Annual target: *Communication and engagement activities delivered to suburbs within the priority area (Area 1) and continued engagement activities within the wider South East Queensland infested area*

During the third quarter, the Program made further progress towards fulfilling its engagement activity targets as per the *2017–18 Treatment Season Communication and Engagement Plan* (the Plan). The Plan supports the Program's targeted eradication treatment program as outlined in the Ten Year Plan. Progress on the Program's communication and engagement activities undertaken during the third quarter 2017–18 are provided at Appendix 8.

Community surveillance

Annual target: *Maintain high levels of public reporting of suspected fire ant infestations to the Program. This is reflected through the number of public reports received*

Public reporting continues to account for a significant proportion of new detections for response by the Program. For 2017–18, the community engagement activities have focused on encouraging community surveillance and reporting beyond the Area 1 treatment area to include the adjacent 2–5 km 'targeted surveillance zone'.

Over the third quarter for 2017–18, there were 2301 reports of suspicious ants from the general public. Of these reports, just over 1400 samples were collected for diagnosis, with 67% of these samples positively diagnosed as fire ants. In the year to date, the Program's communication and engagement activities have yielded 4926 public reports of suspected fire ant infestations. The majority of these public reports have come from within the operational boundary.

Industry engagement

Since late 2017, the Program has advocated for the status of *s-methoprene* (i.e. IGR bait treatment used by the Program) to be altered so that it becomes an allowable input for certified organic production.

Australia's organic industry peak body—the Organic Industry Standards Certification Council (OISCC)—subsequently endorsed actions to change the status of s-methoprene to mitigate the risk to farmers of losing their organic certification status. Additionally, on 4 January 2018, the Department of Agriculture and Water Resources (DAWR) released a statement indicating support to protect the certification status of farms that had received chemical treatment to comply with Commonwealth, state or territory law. While the Program's scientific personnel have communicated with relevant certifiers, acceptance of the DAWR's advice by these parties and dissemination of this advice to organic growers has been slow. To date, some growers have indicated their opposition to this change in status. The Program continues to engage with the OISCC and industry stakeholders on this issue.

SCIENCE, RESEARCH AND DEVELOPMENT

Fire ant bait assessments

Annual target: *Ensure monitoring results of science trial sites are provided to both the Program and cost-share partners*

Planned bait trials for Synergy®, Advion® and Distance Plus® were impeded due to higher than average rainfall in the south-east over much of the third quarter, and the status of these trials remains unchanged from the last quarter as seen in Table 5 below. The Chuwar plot has been abandoned as a trial site due to dense overgrowth preventing access.

Trials of insecticides for use by turf farms

During the third quarter, the Program assessed the effectiveness of the insecticide chlorpyrifos (CPF) when applied to infested turf as a quarantine treatment to control fire ants within turf farms within the fire ant biosecurity zones. The assessment found CPF was not effective at removing fire ants from turf production areas when applied at the required rate of 2 L/ha . Given this result, the Program will undertake to assess the effectiveness of bifenthrin to control fire ants in turf.

Table 5: Summary of scientific bait trial status for the third quarter of 2017–18

TRIAL LOCATION	CHEMICAL/BAIT TRIALLED	NUMBER OF TREATMENT ROUNDS	TIMEFRAME	STATUS	STATUS UPDATE
Willowbank (Area 2)	Distance Plus® (*pyriproxyfen*+ attractant) and Distance® (*pyriproxyfen*)	6	March 2016 to January 2017	6th round delayed by rain	All colonies in the plots treated with Distance Plus® Ant Bait and Distance® Ant Bait were dead after five rounds of treatment.
Chuwar (Area 2)	Distance Plus® (*pyriproxyfen* + attractant)	4	November 2017 to December 2018	Cancelled	This site has been abandoned as a trial site due to dense overgrowth.
Purga (Area 2)	Synergy® (*pyriproxyfen* and *hydramethylnon*), Distance® (*pyriproxyfen*) Advion® (*indoxacarb*)	4	November 2017 to December 2018	In progress	Two rounds of Distance® Ant Bait applied. Application of Synergy® and Advion® are due in April–May 2018, weather permitting.

Application of bifenthrin will be applied at the same concentration used in the USA as a fire ant quarantine treatment (i.e. 3 L /ha). To mitigate the ongoing risk of moving infested turf, the Program is applying IGR treatment to a radius of 500 m around infested turf farms on a biannual basis in combination with routine surveillance, and responsive DNI of all detected infestations.

Scientific support of program activities

Annual target: *Provide ongoing support for key Program functions. This can be reported through diagnostic samples delivered, science-based trials for risk mitigation purposes, and scientific principles for key Program policies and protocols*

Enhancing odour detection capability

The Program relies heavily on scientific research, advice and technical expertise provided by scientists employed under the Program. Over the third quarter, the Program has pursued its scientific agenda through the following activities:

- *Dog team validation testing*: the Program requires a minimum 80% successful detection (hit) rate by its odour detection dogs. In recent times, some anecdotal evidence has emerged to suggest variation in the dogs' hit rate. In March 2018, the Program undertook a statistical analysis of each dog's hit rate as recorded by dog handlers over 2016–2017. It is expected that results of this analysis will help determine if variation in sensitivity is idiopathic to individual dogs; correlated to data recording methods; or due to other external factors that influence odour detection performance.
- *Effectiveness of responsive surveillance training materials*: issues with manufacture of the odour-impregnated cloths (i.e. dollies) used for training and imprinting the dogs with fire ant odour, and validating dogs for field deployment, have been identified and are under investigation. Gas chromatography is being used to evaluate other chemicals and substances found in the dollies, and determine the levels at which an odour (chemical) is present between batches. Program scientists are designing a case-controlled study to evaluate and compare the effectiveness of current and new odour-impregnated materials and substances used to train dogs in odour detection. A report on outcomes from the study is expected by October 2018.

Genetic analysis and genotyping

Annual target: *Ensure the results of genetic analysis and research are reported to both the Program and cost-share partners*

Sub-target: *Social form testing to determine whether a colony is monogyne or polygyne undertaken within 30 working days*

During the third quarter, 1734 samples of fire ants were tested to determine whether they were monogyne or polygyne colonies of fire ant. Fire ants are tested for social form genetic markers by identifying different expressions of the allele Gp-9 (i.e. monogyne fire ants: Gp-9B, and polygyne fire ants: Gp-9Bb). Test results identified Gp-9Bb was present in only 5.6% of samples, which is consistent with the second quarter results and indicates that fire ant colonies throughout SEQ remain predominantly monogyne (i.e. >95%). Monogyne colonies are easier to treat due to only having one queen. Currently, all social form testing of samples is completed within 30 days. Clearance of the backlog of samples as a result of previous staff shortages is now complete.

DNA sequencing of 917 samples took place during the third quarter, with subsequent results added to the microsatellite profile database. This data is continually used for comparison with genotype data from new incursions (population assignment), if any, monitoring genetic fitness trends, and tracing the origins of outlier infestations. A full report of analyses undertaken for 2017–18 will be provided in the first quarter of 2018–19.

Diagnostic support

Annual target: *All samples are diagnosed within two working days*

Samples of suspicious ants for diagnosis are collected from the public and from routine surveillance by Program staff. During the third quarter, 1650 suspicious ant samples were collected for diagnosis and all were diagnosed within two working days from date of receipt. Results of a small proportion of these (6%) could not be recorded on time due to FAMS system configuration issues. These results continue to support prompt risk assessment and prioritisation of response activities.

Remote sensing surveillance

Annual target: *Test new technology in preparation for flight trials scheduled in future financial years*

Work Plan target 2017–18: *Remote sensing surveillance activities (flights and ground component) will not be operational in 2017–18. Progress of the research and development phase will be monitored through key project milestones*

Discussions with the two suppliers shortlisted during the invitation to offer process continued early into the third quarter, with a preferred supplier selected by the Program's selection panel. Negotiations with the supplier are being finalised prior to seeking approval to proceed with the pilot. The Project Board will meet early 2018–19 to consider the project's forward schedule, management plan and structure. Table 6 below provides revised timeframes for the project.

Table 6: Indicative timeframes for remaining deliverables for remote sensing surveillance deployment

KEY DELIVERABLES	DUE DATE	STATUS
Research and development contract(s) finalised	April 2018	Underway Due date updated from January–February 2018
Development of project plan, including timeframes for: • specific spectral bands and related sensors tested/validated • detection algorithm development based on any imagery collected from sensor validation (if possible) • prototype image capture solution developed	May–June 2018	Due date updated from February 2018
Commence project (as specified above)	June 2018	Estimated due date updated from February–March 2018

PLANNING, PROCESSES AND SYSTEMS

Eradication planning: treatment and surveillance

Annual target: *Deliver treatment and surveillance planning requirements for 2018–19 by the end of March 2018*

As highlighted earlier in this report, the third treatment round for 2017–18 was deferred, in part due to delays in establishing additional treatment teams, but predominantly because of lost days due to wet weather. The Program will foreshadow the likely impacts of this deferment with the Steering Committee at its May 2018 meeting, with a revised work plan for the remainder of the current treatment season and scope of work being planned for 2018–19. Moreover, the Program is continuing to develop its treatment and surveillance plans for 2018–19, and will seek approval for these plans from the Steering Committee at its subsequent meeting in August 2018.

Quality assurance

Annual target: *Develop quality assurance measures for treatment and surveillance undertaken in 2017–18*

Implementation of the quality assurance agenda for the Program has been delayed pending the establishment of a quality assurance team. The position of Manager, Planning and Quality Assurance has been now been filled (to commence April 2018) and action to fill remaining team positions has commenced.

Information systems

The initial phase of the comprehensive review of 2017–18 of the Program's ICT Systems (the ICT Systems Review) continued in the third quarter, focusing on identifying future efficiencies in aerial treatment. Business processes were documented and key activities of concern were examined (e.g. follow-up ground buffering treatment post-completion of aerial baiting). This phase of the ICT Systems Review is expected to be completed in the last quarter of 2017–18.

Fire Ant Management System

During the third quarter 2017–18, the following FAMS work program milestones were met:

- enhanced functionality to enable sending multiple SMS messages to clients regarding upcoming, completed and rescheduled aerial treatment
- delivered functionality to improve cataloguing of genetic markers for fire ant samples
- delivered automated reports to replace manually compiled lists of schedules for aerial treatment
- continued progress towards upgrading the Digital Cadastre Database to confirm property information in FAMS is current, including the ability for real-time retrieval of allotment information without intervention using ArcGIS
- upgraded underlying software architecture to latest versions to support faster performance and improved user experience in future enhancements.

Field mobility

Annual target: *Provide all operational field staff with field mobility solutions*

Program is progressing the preliminary assessment of mobile computing solutions to support field operations:

- During the third quarter 2017–18, the Environmental Systems Research Institute (ESRI) delivered a high-level technical document to outline the potential system architecture for a field mobility solution using its technology, which can be integrated with FAMS.
- A proof-of-concept pilot to demonstrate a mobile solution for DNI treatment is being investigated with ESRI. Milestones to be set once the project is established. The pilot will assess the feasibility of job information flowing between FAMS and mobile devices and back with minimal operator intervention or manual work. This will inform the development of field mobility requirements, with a view to reducing the reliance on paper-based forms and manual data entry.

Community and Stakeholder Engagement Solution

Development of the Community and Stakeholder Engagement Solution (CaSES) continued in the third quarter, with progress in the following areas:

- development of the customer portal that members of the public will use to report suspected fire ants, register for fire ant awareness training, and provide property information updates
- analysis of data input requirements and configuration of events, training, accounts, contacts and suspect ant reports
- completion of solution design and commencement of integration between the customer relationship management system and FAMS.

Solution development and resourcing issues have resulted in some slippage in project timeframes and associated budget. The delivery date for the final product has been postponed to the latter half of the fourth quarter 2017–18 from the original planned date of delivery in April 2018. This has been recommended and endorsed by the Project Board in the interests of ensuring quality of the end product, and effective change management for Program staff. The estimated financial impact of these changes is in the order of $153,000, representing a revised total budget of $847,412.

Policy, strategic planning and governance

Annual target: *Deliver on the key policy documents as outlined in the 2017-18 Work Plan*

Progress on key policy, strategy and planning documents over the third quarter is provided in Appendix 9.

Risks

The Program has commenced reviewing its risk exposure and risk management approach relating to corporate governance and operational delivery. A risk review workshop is scheduled to coincide with the May 2018 Program Steering Committee meeting. A summary of current risk-related issues and Program responses to these issues is provided in Table 7 (see next page).

Table 7: Summary of risk issues and responses for the third quarter of 2017–18

Issue	Response
Continuing higher than anticipated instances of wet weather	• Continued use of additional weekday and weekend teams to maximise opportunities for treatment • Review schedule of treatment to assess viability of third round of treatment to Area 1 in 2017–18
Loss of contract labour due to field crews seeking more constant work (due to wet weather stand downs)	• Greater engagement and explanation of operational decisions impacting on field operations • Advanced planning of surveillance workforce requirements post-treatment season to provide greater certainty around employment opportunities
Concern over efficacy of existing chemical treatments for turf	• Collaborative trial of different chemical treatment regimes with infested turf farms
Project delay and associated costs to the delivery of CaSES and FAMS upgrades	• Issues escalated to ICT Project Boards, resulting in revised schedules, scope, and approved costs
Timely access to properties to undertake treatment	• Engagement with industry peak bodies relating to organic certification • Identification of training needs and a requirement for revised work instructions for field staff addressing right of entry powers and approaches/messaging to property owners
Significant detections (three by the end of the quarter)	• Monitor and evaluate emerging trends in detection that have the potential to challenge the validity of planned treatment strategies • Delivery of eradication treatment and delimiting surveillance to the identified sites and areas
Increasing numbers of new infestations detected and the public's expectations of the Program response	• Review the planned and responsive treatment of Areas 2 to 4 • Consider additional licensed pest management technicians to deliver responsive treatment • Develop a policy position regarding treatment by land owners/licensed pest management technicians
Time taken to obtain real-time data to support operational decision making and reporting (reliance on manual systems)	• Establish key performance indicators for field crew lodgement of paperwork data post-treatment and manual entry of data • Progress options to improve processes, including automation of work management systems and associated reporting capabilities
Lack of harmonisation between fire ant movement controls and interstate market access requirements	• Continue dialogue with peak industry bodies representing commercial nurseries • Consider establishment of a Scientific Advisory Panel to validate risk mitigation measures reflected in current regulation

Significant meetings

The Steering Committee met for the third time in Brisbane on Friday 7 February 2018. At this meeting, the Steering Committee was informed of developments in remote sensing surveillance technology, including the possibility of unmanned aerial vehicle (e.g. drone) deployment. Also tabled for discussion at this meeting were:

- the draft Compliance Strategy, which will undergo additional consideration once a penultimate draft is finalised
- the suitability of current fire ant carrier movement controls and scientific evidence that supports these controls, and the potential for applying these controls across other jurisdictions
- the Program's Risk Management Plan and future risk management approach and risk register, with a view to the Steering Committee participating in a risk review workshop at its next meeting in May 2018
- the Program's draft Collaborative Funding Agreement.

BUDGET AND FINANCE

Annual target: *Monitor and ensure that the cost of delivering eradication plan activities does not exceed the indicative budget of $38 million for 2017–18*

For the second consecutive quarter this financial year, quarterly expenditure was less than budgeted expenditure. Deferment to 2018–19 of round three planned eradication treatment in Area 1, as well as lower than forecast expenditure on staff recruitment, contributed to this underspend. The Program's recruitment initiative and round two of planned eradication treatment for Area 1 are both on track for completion in the final quarter of 2017–18. A detailed breakdown of the third-quarter expenditure, as well as year-to-date expenditure, is provided in Table 8.

The forecast underspend for 2017–18 of about $7.5 million will, subject to approval, be applied to treatment deferred to 2018–19, and provide sufficient resources to implement the revised and proposed treatment and surveillance plan in 2018–19.

Table 8: Breakdown of quarterly financial expenditure at 31 March 2018

Activity	3rd quarter (actual) $	3rd quarter (budget) $	Year-to-date (actual) $	Year-to-date (budget) $
Directorate*	97 996	78 116	226 661	233 102
Administration, procurement, WH&S, HR	896 570	1 082 772	2 332 621	3 136 340
Policy, governance	143 796	234 449	395 734	567 030
Compliance	171 967	328 249	476 873	685 184
Communications & engagement	306 127	443 349	824 058	1 036 449
Science	370 119	419 386	1 063 563	1 125 471
Planning, QA	381 877	400 939	1 139 234	1 049 267
Planned and responsive eradication	7 196 265	9 441 537	13 035 546	19 334 804
Ramp up activities	371 325	23 975	1 036 077	704 720
RSS R&D	46 287	177 762	113 297	367 749
IT development	407 722	280 329	1 009 898	768 579
Total	10 390 049	12 910 862	21 653 563	29 008 695

Staffing

At the end of the third quarter, the Program had the equivalent of 99 full-time personnel (FTE) employed on a permanent basis. This is an increase of three FTE from the start of the quarter. The Program finished the third quarter with a total of 126 contract personnel on staff in field and administrative positions. There was no change in the number of contract staff numbers over the quarter, although the Program has experienced some turnover in contracted staff during the reporting period. Extended rain periods created uncertainty and variability in the demand for field staff, which contributed to attrition. Performance and suitability issues also contributed to turnover. The Program is reviewing its workforce strategy, including consideration of a continuous approach to recruitment that will better meet the needs and demands of the Program for contracted staff.

Table 9: Program positions advertised during the third quarter 2017–18

Position	Closing Date	Status
Information Systems Officer	1 February 2018	Filled
Principal Compliance Officer	9 February 2018	Finalised
Science Manager	27 February 2018	Short-listing underway
Principal Operations Coordinator	2 March 2018	Short-listing underway
Principal Community Engagement Officer	2 March 2018	Filled
Community Engagement Officer x 2	13 March 2018	To be re-advertised
Events Officer	13 March 2018	Filled
Senior Scientist (Entomologist)	13 March 2018	Short-listing underway
Experimentalist	14 March 2018	Short-listing underway
Field Coordinator	14 March /2018	Short-listing underway
Manager	11 April 2018	Short-listing underway

* Management costs and Steering Committee Chair remuneration.

TASKFORCE AND PROGRAM 'RAMP-UP'

Annual target: Deliver satellite accommodation; undertake general procurement; recruit additional staff; and procure aerial charter services, additional vehicles and additional bait supplies

Accommodation

Table 10: Summary of progress made on accommodation for the Program headquarters – January to March 2018

DELIVERABLE	DUE DATE	STATUS
Finalisation of contract for head office	30 November 2017	Negotiations for Wayne Goss Drive, Berrinba are continuing with a short-term lease secured to allow progressive occupancy from 2 April 2018
Select satellite depot sites	30 November 2017	The Program is currently evaluating possible helicopter landing sites offered by The University of Queensland (Gatton Campus) Laidley and Mutdapilly satellite depots have been secured for five years
Relocate Moggill and Richlands staff to new site	1st stage: 31 December 2017 2nd stage: April 2018	Negotiations for short-term lease arrangements to allow progressive occupancy from 2 April 2018 are complete and, pending departure of the vacating tenant, staged relocations will occur between June and November 2018
Establish satellite site in Gatton	DAF site 28 February 2018	Alternative site in Laidley established for five years
Establish satellite site at Mutdapilly	28 February 2018	Site is fully established as a satellite site
Secure aircraft facility at Wacol	October 2017	Part of capital works submission
Aerial landing sites identified and secured	October 2017	Mt Walker: secured Mt Mort: to be finalised in final quarter of 2018 Gatton: under consideration with landlord Gold Coast: numerous sites still under consideration. Final sites to be settled prior to 30 June 2018

Major contracts

Table 11: Summary of progress made on the execution of major contracts between January and March 2018

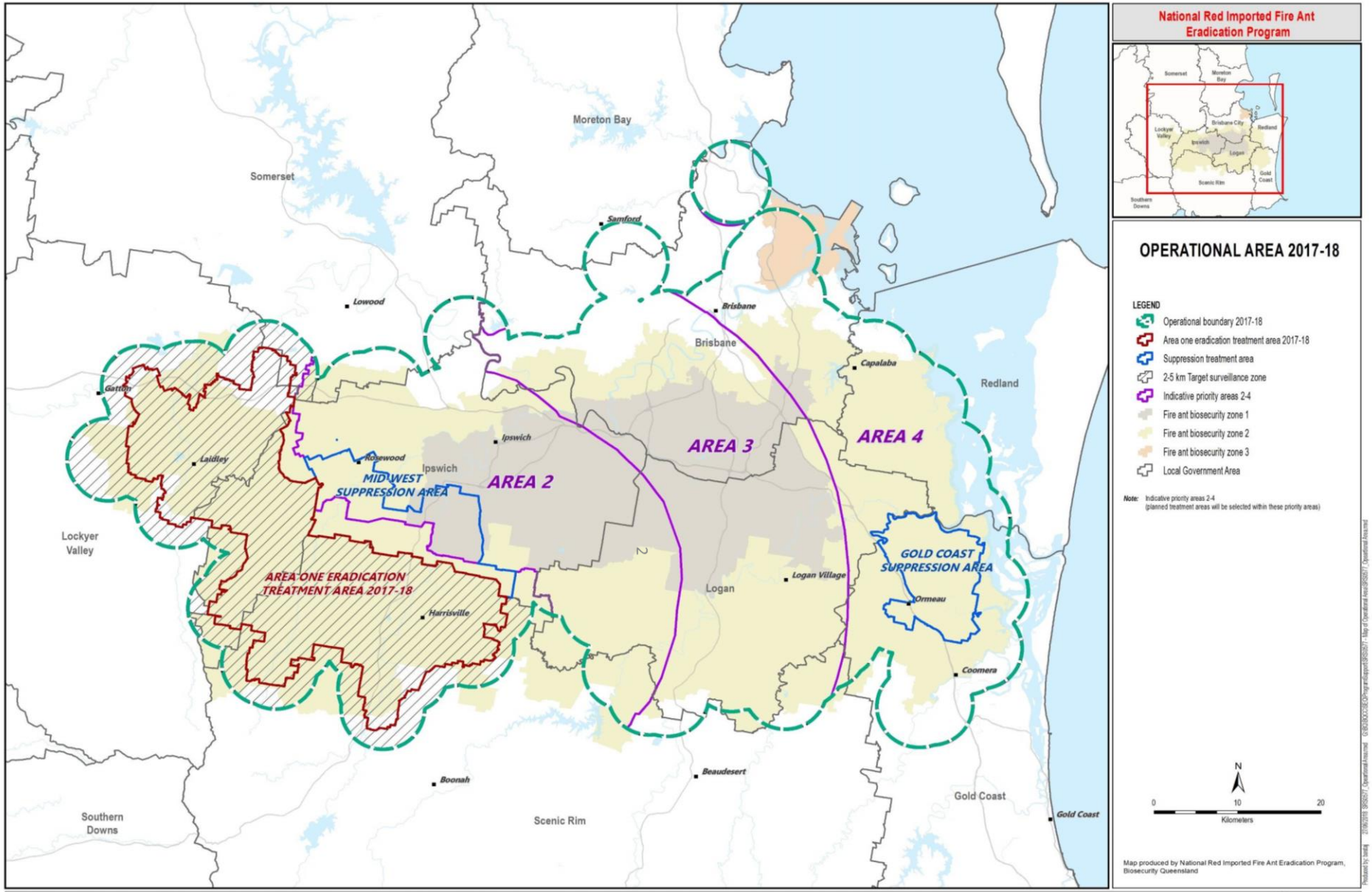
SUPPLY	DUE DATE	DELIVERED DATE	STATUS
Aerial charter (new)	30 September 2017	November 2017	Complete
Labour hire (new)	31 October 2017	-	Dedicated standing offer arrangement (SOA) not in place and the Program continues to rely on TMR. Consideration of a dedicated SOA and related requirements for the Program will be considered in 2018–19
Vehicle hire (new)	March 2018	-	SOA released. Vehicle resourcing plan outlining all vehicle hire arrangements complete
Bait (1 year extension)	31 December 2017	October 2017	Complete
Office contractors (SOA)	31 October 2017	December 2017	Complete
Ant colony facility (new)	28 February 2018	-	Work in progress through the Department of Natural Resources, Mines and Energy and Department of Housing and Public Works
Odour detection dogs, training services and kennelling (new)	1 July 2018	-	Planning in progress
Manufacture, supply and delivery of chemical bait for tramp ant eradication (new)	1 July 2018	-	Planning in progress

Lower value contracts

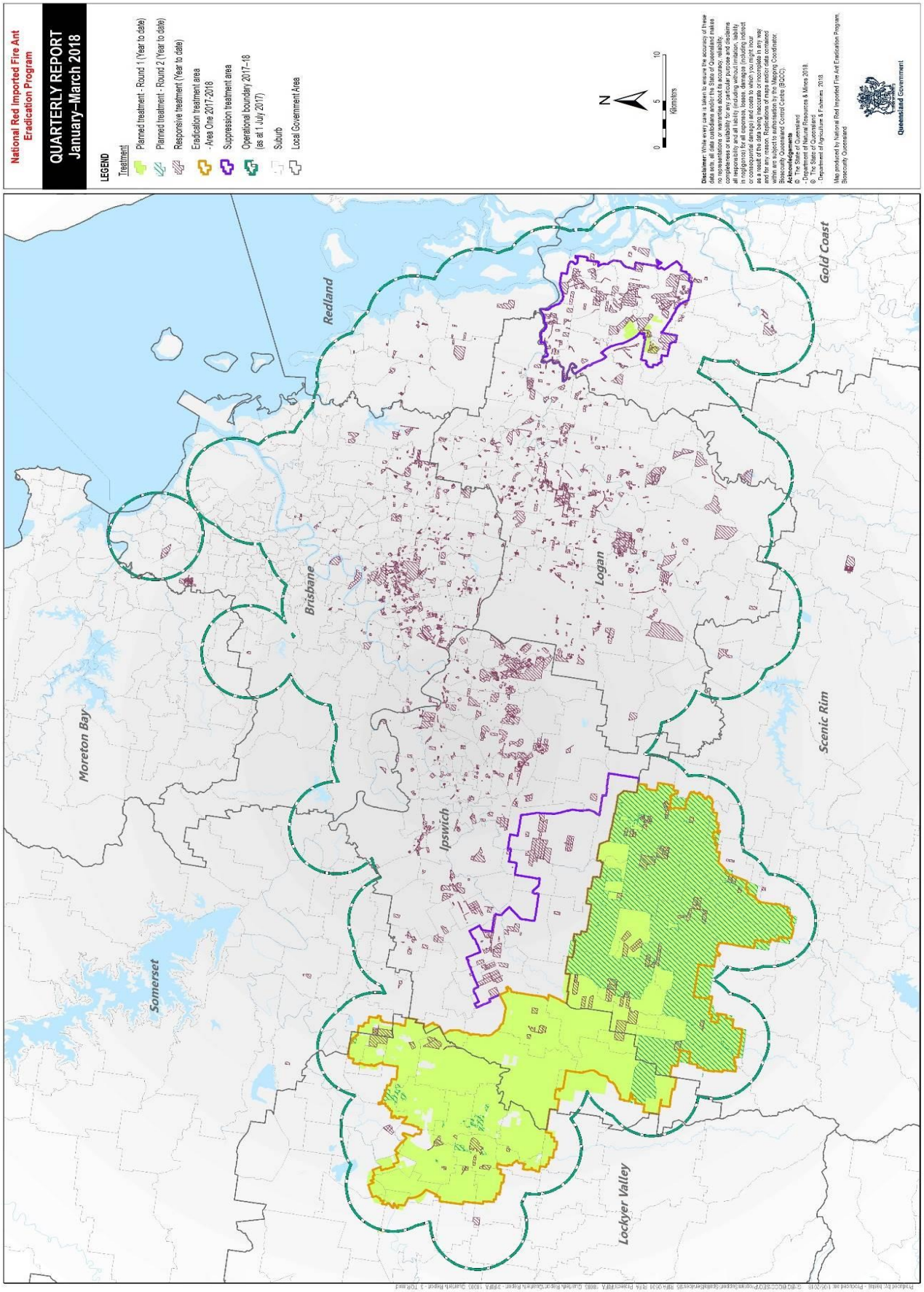
Table 12: Summary of progress on the execution of lower value contracts between January and March 2018

Supply	Due date	Status
Operational strategy option modelling	September 2017	The project has been delayed, negotiations occurred for delivery of final report. DAF Legal Services advice to be sought regarding terminating this contract
Skip bins for remote sites	December 2017	Complete
Genetics analyser maintenance agreement (1 year extension)	31 October 2017	Complete
Fabric and production of dog dollies (imprint material and dog toy)	TBA	It is intended that this be incorporated into the proposed contract for odour detection dog supply and training for the future year
Vehicle equipment storage (new)	January 2018	Complete
Licensed pest control contract	30 September 2017	Currently using an SOA to engage individual contractors. This will be incorporated into the new labour hire SOA (see *Major contracts*). Commencing a procurement process for a pilot to determine the feasibility of outsourcing some of the outstanding tasks in conjunction with Program staff
Aerial training services	September 2018	This training is a requirement of the Specific Task Analysis and Risk Assessment.. Evaluation in progress.
Additional non-operational insulated bait storage containers	May 2018	In progress
DNI chemicals	November 2018	Contract arrangement to replace ad hoc credit card purchases. Planning in progress

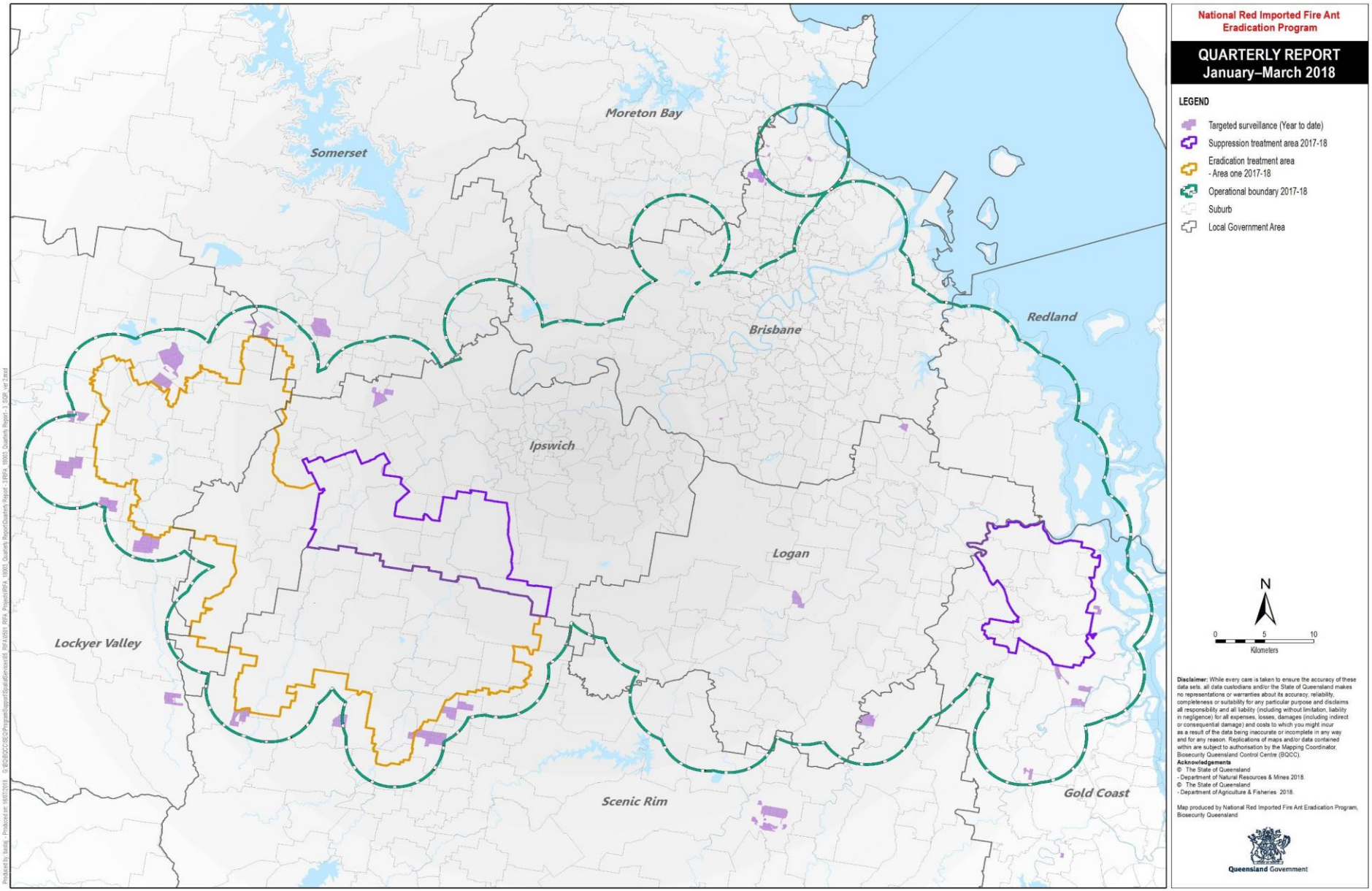
Appendix 1: Map of the operational area



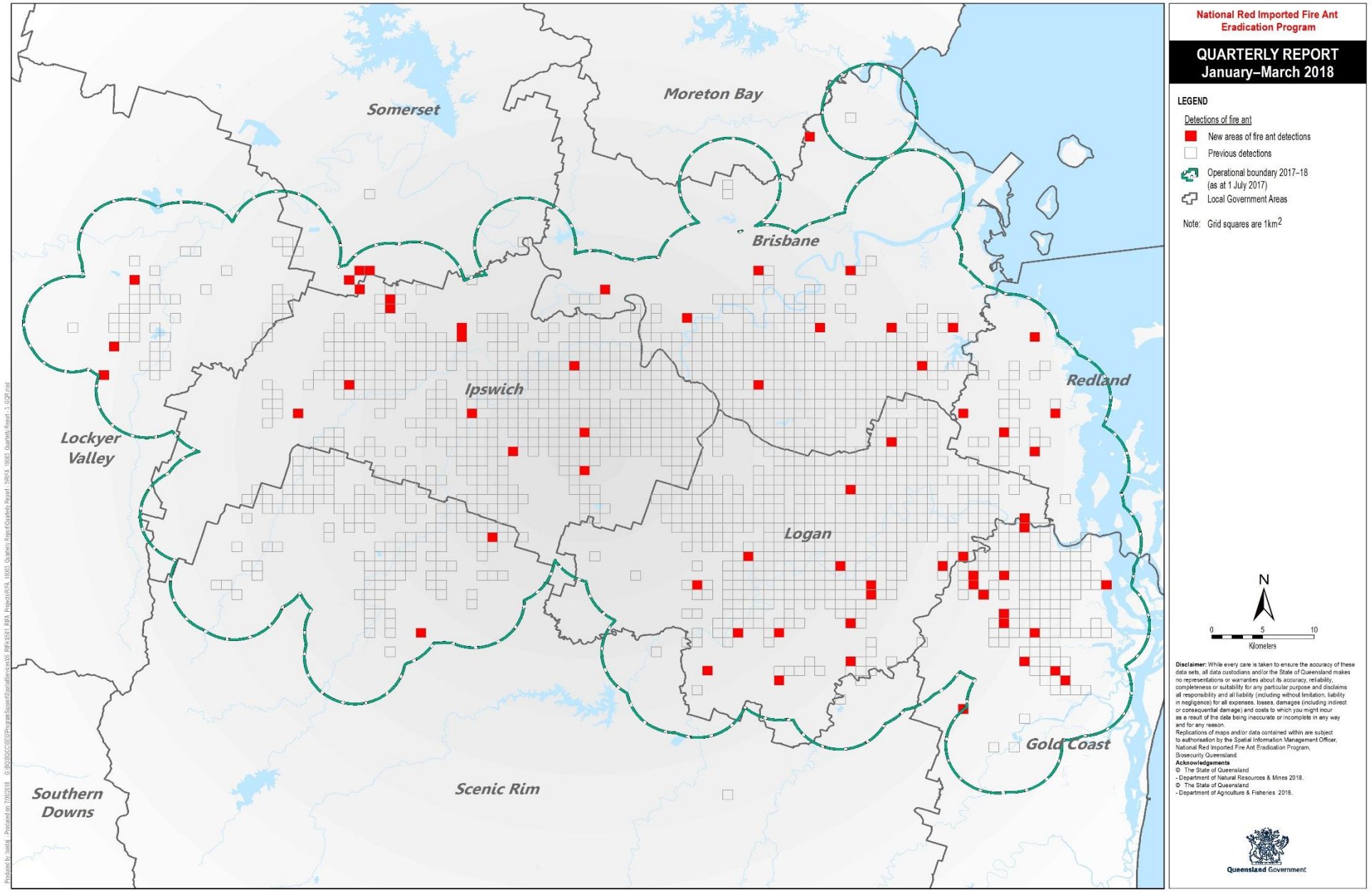
APPENDIX 2: MAP OF COMPLETED ERADICATION TREATMENT (YEAR TO DATE)



Appendix 3: Map of planned targeted surveillance (completed)



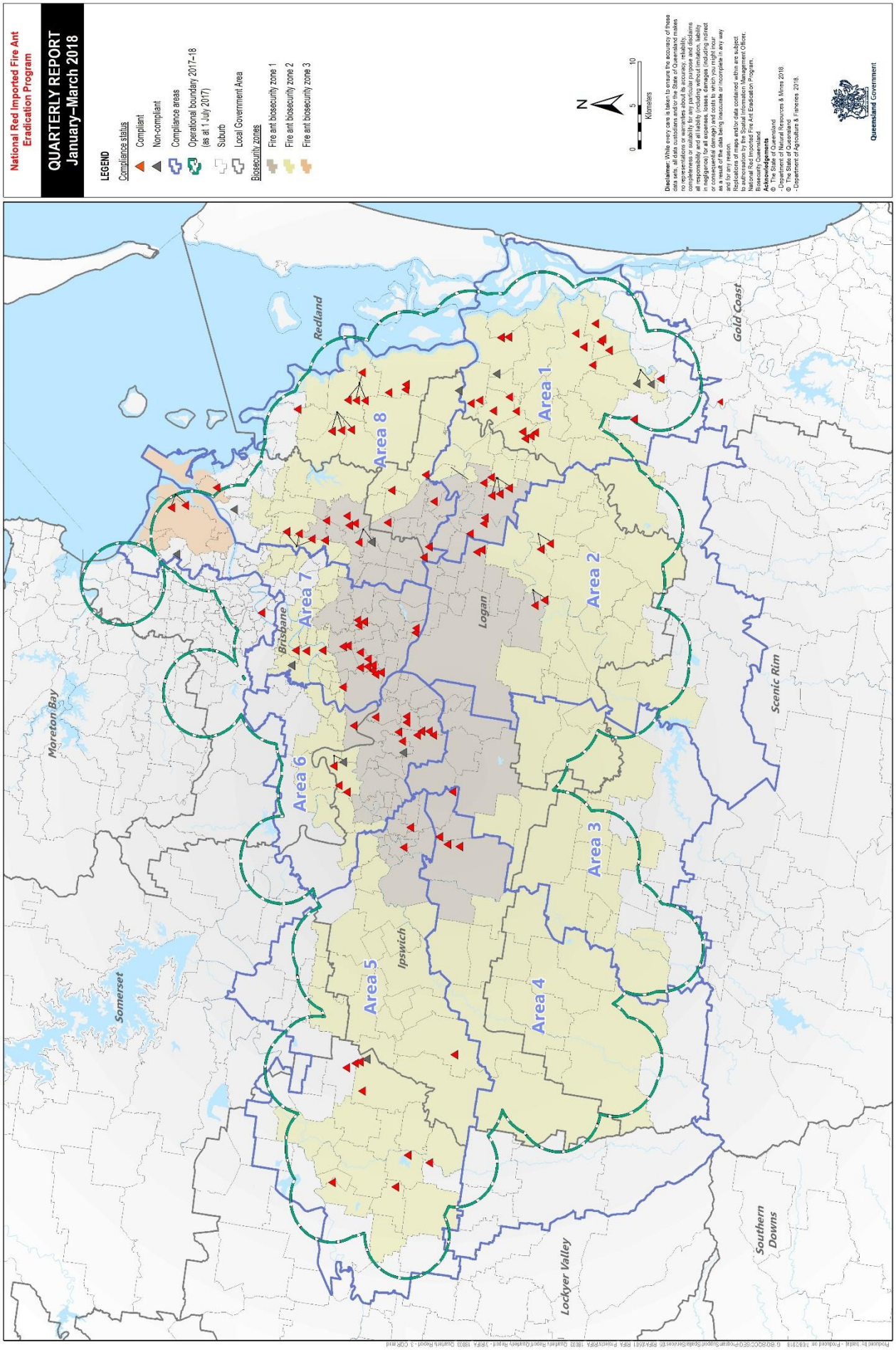
Appendix 4: Map of detected infestations (third quarter 2017–18)



Appendix 5: Surveillance of sentinel sites at 31 March 2018

Locations	Land use	Expected completion date	Target ha	Ha completed (YTD)	Surveillance date	Fire ant detected	Status/follow up
Beaudesert	Housing development	30 Jun 2018	89	89	19 Sep 2017	Yes	Complete (significant detection)
Gatton	Housing development	30 Jun 2018	99	99	21 Sep 2017	No	Complete
Lowood	Housing development	30 Jun 2018	32	32	10 Aug 2017	Yes	Complete (significant detection)
Fernvale	Housing development	30 Jun 2018	14	14	21 Sep 2017	No	Complete
Gleneagle	Turf farm	30 Jun 2018	218	218	2 Aug 2017 to 22 Aug 2017	No	Complete
Mulgowie	Cropping	30 Jun 2018	20	20	1 Aug 2017	No	Complete
Lawnton	Housing development	30 Jun 2018	52	52	22 Sep 2017 to 26 Sep 2017	No	Complete
Adare	Cropping	30 Jun 2018	56	56	13 Sep 2017	No	Complete
Adare	Housing development	30 Jun 2018	40	40	11 Sep 2017	No	Complete
Coominya	Turf farm	30 Jun 2018	142	96	1 Sep 2016 and 9 Sep 2016	No	62% complete – inaccessible boundary due to dense vegetation/ forest that prevents further surveillance. Target ha to be amended
Gilston	Development	30 Jun 2018	34	10	24 Aug 2017	No	29% complete – dense bushland prevents further surveillance
Fassifern Valley	Cropping	30 Jun 2018	75	22.1	Partial Oct 2017	No	30% complete – cropping has prevented further surveillance
Upper Tenthill	Cropping	30 Jun 2018	32	12.5	29 Sep 2017	No	35% complete – cropping has prevented further surveillance
Bromelton	Waste facility	30 Jun 2018	66	52	2 Nov 2017	No	79% complete – dense, long grass and creek bed prevent further surveillance
Kalbar	Cropping/farm	30 Jun 2018	52	28	6 Oct 2017 to 9 Oct 2017	No	54% complete – ground is too wet. Need to revisit
Boyland	Turf farm	30 Jun 2018	126	118	16 June 2017	No	94% complete – remaining ground area is too wet to survey
Warner	Housing development	30 June 2018	32	0	Scheduled for end of May 2018	To be advised	Scheduled for end of May 2018

APPENDIX 6: COMPLIANCE CHECKS (THIRD QUARTER 2017–18)



APPENDIX 7: COMPLIANCE ACTIVITY

Breakdown of organisations subject to Program compliance activity

INDUSTRY SECTOR OR CARRIER	NUMBER OF ORGANISATIONS	NUMBER OF NON-COMPLIANCE CASES
Construction, earth moving, and civil works providers	77	6
Soil providers	4	Nil
Hay providers	7	1
Turf farms and nurseries	3	Nil
Public sector	3	1

Appendix 8: Community and stakeholder engagement activity

Engagement activities

Engagement source	Engagement activity	Target (year)	Actual (third quarter)	Actual (year to date)
School program	School visits	70	12	43
	Students attending	7000	1688	5696
General awareness training (including both industry and community)	Training sessions provided	80	25	75
	Number of trainees	2000	690	2310
Events attended (event season Mar–Sep)	Number of events attended	70	6	42
	People directly engaged	20 000	1498	15 227

Community and industry engagement activity

Industry	Date	Activity	Suburb	Number of Attendees
SEQ industries*	16/01/2018	On-site fire ant training**	RICHLANDS	3
Village community	25/01/2018	Community talk	CARINDALE	23
SEQ industries	30/01/2018	On-site fire ant training	RICHLANDS	28
Garden club	1/02/2018	Community talk	WAVELL HEIGHTS	40
Garden club	8/02/2018	Community talk	CARSELDINE	68
Utilities	9/02/2018	On-site fire ant training	KUNDA PARK	27
SEQ industries	13/02/2018	On-site fire ant training	RICHLANDS	25
Toowoomba Regional Council	14/02/2018	On-site fire ant training	WELLCAMP	21
Toowoomba Regional Council	14/02/2018	On-site fire ant training	WELLCAMP	17
Contractor induction	16/02/2018	Staff training	RICHLANDS	13
Ipswich City Council	22/02/2018	On-site fire ant training	RIVERVIEW	47
Contractor induction	22/02/2018	Staff training	RICHLANDS	29
SEQ industries	27/02/2018	On-site fire ant training	RICHLANDS	31
Federal government	2/03/2018	On-site fire ant training	AMBERLEY	25
Brisbane City Council	6/03/2018	On-site fire ant training	FORTITUDE VALLEY	23
Garden club	7/03/2018	Community talk	CABOOLTURE	40
SEQ industries	13/03/2018	On-site fire ant training	RICHLANDS	29
Contractor induction	14/03/2018	Staff training	RICHLANDS	20
Brisbane City Council	15/03/2018	On-site fire ant training	STAFFORD	38
Community action group	19/03/2018	On-site fire ant training	SANDGATE	30
Village community	22/03/2018	Community talk	DURACK	21
Construction contract agency	23/03/2018	On-site fire ant training	NUNDAH	24
SEQ industries	27/03/2018	On-site fire ant training	RICHLANDS	21
Contractor induction	31/03/2018	Staff training	RICHLANDS	33

Community and industry engagement activity (continued)

Industry	Date	Activity	Suburb	Number of Attendees
SEQ industries*	16/01/2018	On-site fire ant training**	RICHLANDS	3
Village community	25/01/2018	Community talk	CARINDALE	23
SEQ industries	30/01/2018	On-site fire ant training	RICHLANDS	28
Garden club	1/02/2018	Community talk	WAVELL HEIGHTS	40

NOTE:

*SEQ industries include: infrastructure, utilities, building, landscaping, construction, nursery, waste management, community, defence, federal government, development, engineering, council, transport and environment.

**On-site fire ant training was delivered to businesses coming from the following suburbs: Amberley, Banyo, Beenleigh, Bli Bli, Brisbane, Browns Plains, Bundamba, Buccan, Clayfield, Craigieburn, Darra, Eagle Farm, Eagle Heights, Forest Hill, Fortitude Valley, Hope Island, Ipswich, Marrickville (NSW), Marsden, Mermaid Waters, Milton, Ormeau, Port of Brisbane, Runaway Bay, Redwood, Robina, Rocklea, South Brisbane, Stafford, Sumner Park, Thornborough, Toowong, West End, Woolloongabba and Yatala.

Appendix 9: Progress of policy, strategy and plan documents

Policies

Task	Focus	Status
Waste facilities		Draft discussion paper is under revision to reflect recent changes to waste management in SEQ (Ipswich waste facilities, Rochedale landfill end-of-life strategy, waste levy and recycling)
Managing large-scale disturbance (e.g. large greenfield developments and land clearing)		Not yet commenced
Dealing with non-compliance (with movement controls)		To be addressed as part of Program Industry Collaboration and Compliance Strategy
Fire ant biosecurity zones		A paper on the proposed fire ant biosecurity zones to be presented to the Steering Committee for consideration prior to public consultation and formal amendment processes
Treatment for fire ants by general pest management technicians		Conceptual framework developed as a precursor to a pilot with industry and local authorities
Treatment by landowners/businesses		This will be progressed following industry pilots with pest management technicians
Genetics		To be incorporated within the Science program of work for 2018–19
Declaration of proof of freedom		Not yet commenced

Plans and strategies

Task	Focus	Status
Ten Year Eradication Plan		Approved by Steering Committee
2017–18 Work Plan		Approved by Steering Committee
2017–18 implementation guide		Not required
Compliance strategy		Considered by Steering Committee at its February 2018 meeting. Revised strategy to be presented to Steering Committee for consideration in 2018–19
Communication and engagement plan		To be submitted for Steering Committee consideration at its meeting in August 2018
2018–19 Work Plan		To be considered by Steering Committee at its meeting in August 2018 following finalisation of annual budget
Reporting guide/data dictionary		The 2017–18 guide to be updated for 2018–19. Program is resolving FAMS issues to automate reporting of information where possible

Key	
	Priority in 2017–18
	Priority in future years

APPENDIX 10: GLOSSARY

TERM	DEFINITION
Areas 1, 2, 3 and 4	Sub-areas within the operational area boundary that will receive coordinated and focused eradication activity in accordance with a staged approach. The boundaries of each area (as per the map at Appendix 1) are indicative and will be updated as a part of the biennial review of the Ten Year Plan to be endorsed by the Steering Committee.
Biosecurity instrument permit	If businesses are unable to comply with the conditions outlined in the Biosecurity Regulation 2016, they may apply for a biosecurity instrument permit to move high-risk products from within the fire ant biosecurity zones.
Biosecurity zone	Fire ant biosecurity zones (zones) are designated areas of SEQ where fire ants have been detected, or where it is likely that fire ant infestations exist. Zone regulatory provisions restrict movement of fire ants and fire ant carriers to help prevent human-assisted spread.
Broadcast baiting	A highly efficient method for delivering insecticidal active ingredients, predominantly an insect growth regulator (IGR), to fire ant colonies via a range of methods, namely aerial application from rotary aircraft, by all-terrain vehicle, or on foot using a handheld fertiliser spreader.
Colony	A number of ants that co-habitate and depend on each other for reproduction and survival.
Community surveillance	Search activity to detect fire ants, which is undertaken by members of the general community, industry and other government agencies. Also referred to as passive surveillance.
Compliance officer	A person appointed as an inspector under the Queensland *Biosecurity Act 2014*.
Consequence	The outcome of a risk event that impacts on organisational objectives. Consequences can be either positive or negative.
Coordinated and focused eradication activity	Combination of activities undertaken at set times and durations in order to achieve fire ant eradication.
Delimited area	The boundary of the infestation as confirmed by Monash modelling of Program delimitation activities undertaken 2012–2015, adjusted for infestation spread since delimitation was completed.
Delineation surveillance	Surveillance undertaken around new detections to confirm the extent of the infestation.
Direct nest injection (DNI)	The injection of a chemical insecticide directly into a nest or mound to destroy the colony.
Fire ant	Red imported fire ant or *Solenopsis invicta Buren*, 1972.
High density infestation	Definition to be reviewed. In the past the definition has been an infestation that is more than 10 mounds in a 500 m radius.
Independent Review	Independent Review of the National Red Imported Fire Ant Eradication Program: Report of the Independent Review Panel (2016).
Infested areas	Areas where productive fire ant colonies have been identified.
Local area freedom from fire ants	When fire ants are no longer detected in an area following completion of coordinated and focused eradication activity.
Monogyne	One of two social forms used to classify fire ants derived from a colony, in this case with one egg-laying queen (also see *Social form*).
Mound	A visible pile of soil associated with a colony of ants (also see *Nest*).

TERM	DEFINITION
National Red Imported Fire Ant Eradication Program – South East Queensland Steering Committee	The National Red Imported Fire Ant Eradication Program – South East Queensland Steering Committee provides strategic oversight of the 10-year program. The Steering Committee, accountable to the Agriculture Senior Officials Committee, will provide guidance and support to the Program on all aspects of the Program's delivery.
Nest	A structure formed by ants that is used for reproduction and survival (also see *Mound*).
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.
Outlier detection	An infestation that has been detected beyond the fire ant biosecurity zone.
Outlying area/outlier	An outlier is a new detection found beyond 5 km from the operational area boundary.
Passive surveillance	See *Community surveillance*.
Pest	For the purposes of this report, 'pest' means red imported fire ant.
Pest-free verification process	Demonstration of proof of freedom of fire ants through structured surveys and other targeted methods.
Planned treatment area	Areas targeted for intensive or suppression treatment, which are determined via a rigorous planning process based on the highest densities of confirmed fire ant sites, anticipated dispersion patterns, and highest risk of pest spread.
Polygyne	One of two social forms that is used to classify fire ants from a colony, in this case with multiple egg-laying queens. Such colonies are of particular concern; they tend to have higher nest densities, higher rates of reproduction, and rapid capacity for founding new colonies when dispersed. Moreover, they require increased surveillance, challenge eradication efforts, and create significant economic, public health and environmental problems due to their rapid capacity to multiply and spread (also see *Social form*).
Post-treatment validation surveillance	Surveillance undertaken following treatment to detect the presence or absence of ants as an assessment of the efficacy of the eradication activities. This is also referred to as validation surveillance.
Program	National Red Imported Fire Ant Eradication Program in SEQ.
Progressive rolling strategy	Focused eradication activities in infested areas on the outer south-western and southern perimeter of the operational area, shifting eradication effort inwards to areas with persistent infestation.
Proof of freedom	No evidence of live fire ant infestations found via structured surveillance or other methods.
Red imported fire ant	*Solenopsis invicta Buren*, 1972.
Regulation	Biosecurity Regulation 2016, which specifies procedures that must be followed when moving or storing a fire ant carrier.
Remote sensing surveillance (RSS)	First generation camera technology has been superseded, and the Program plans to evaluate replacement image capture and aerial deployment technologies (including higher resolution imagery, use of different spectra and drone aircraft) with a view to achieving cost and efficiency gains. Deployment of the new technology will support verification of eradication as the Program moves back into full eradication mode. The efficiency of RSS could be enhanced through refining the detection algorithm, which will circumvent the need for manual screening of points of interest. RSS involves cameras mounted on helicopters that fly over broad areas of land to capture visible, near infrared and thermal images of possible fire ant mounds
Risk-based eradication planning	The process of prioritising eradication activity in target areas based on the highest density and risk of fire ant spread. This will involve rigorous planning for eradication activity (particularly focusing on treatment and surveillance), using mathematical spread, optimal eradication strategy, and land use and habitat classification.
Risk event	An occurrence, several occurrences or a non-occurrence that has consequences on organisational objectives. A solitary risk event can have more than one consequence.
Sentinel sites	Term used to describe areas of land that are used frequently to monitor for the presence or absence of fire ants.
Social form	A classification based on a genetic trait that differentiates among fire ant populations (see *Polygyne* and *Monogyne*).

Term	Definition
Staged approach	Priority areas will receive coordinated and focused eradication activity in three phases. Underpinning this approach, each area will receive an optimal treatment regime of up to six treatments over two years during Phase 2.
Staged clearing of suburbs	The process following completion of treatment where targeted areas are confirmed as free from fire ants. The size of the operational area will progressively reduce as suburbs are 'cleared'.
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, but which present a significant risk to eradication areas or future spread beyond the operational boundary (i.e. areas to receive targeted treatment in a later stage) 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 coordination eradication activity.
Surveillance	Various investigative activities that are undertaken for official purposes, and are used to monitor and collect data on pest occurrence (or absence). Activities can involve visual (sight) surveillance, aerial surveillance, RSS or sniffer dogs.
Target area	An area of land to receive planned treatment, which is part of a main treatment area.
Tramp ant	A diverse group of ant species that are readily moved across the world via numerous transport pathways.
Treatment	The application of chemical solution, or substance impregnated with a chemical solution, for the purpose of destroying an infestation of red imported fire ants.
Treatment season	Time of year when treatment is undertaken. The season requires that ground temperatures are consistently warm (above 20 degrees Celsius), which promotes ant foraging activity, and therefore increases the cost efficiency of bait being collected by fire ants. This is generally between September and May.
Work Plan	Detailed plan outlining the eradication activities that will be undertaken in the upcoming financial year.
Zone	Refer to *Biosecurity zone*.

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