Department of Agriculture and Fisheries

National Red Imported Fire Ant Eradication Program – South East Queensland

2nd Quarter Report (October to December) 2017–18

Queensland Government

CONTENTS

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.

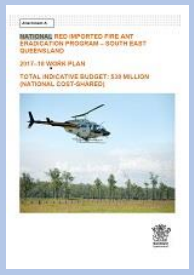
Activities are being carried out across four geographical areas. The 2017–18 effort focuses on delivering three rounds of eradication treatment, planned surveillance, and containment of fire ant infestation to Area 1, which includes parts of the Lockyer Valley, Scenic Rim, Somerset and Ipswich local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

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



Second 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 October to 31 December 2017 (the second quarter).

A main focus for the Program was on recruitment of additional field staff and the delivery of round one of eradication treatment in Area 1.

Achievements against the schedule of work undertaken by the Program for the second quarter 2017–18 include :

- applying eradication treatment to more than 50% of Area 1 (see page 3 for an outline of the area treated). Appendix 2 provides a map of the total area where planned treatment has been carried out to date
- carrying out responsive bait treatment over 804 hectares (ha). The total area treated at 31 December 2017 is 1129 ha, with 11.29% of the budget for responsive bait treatment expended to date. A total of 3111 fire ant colonies were destroyed by direct nest injection over the reporting period (see page 3). A map that shows the known locations of fire ant infestation is provided at Appendix 3
- an extension of the remote sensing surveillance (RSS) submissions out to 10 October 2017, which delayed the project timeframe. Project commencement was rescheduled to March 2018. A revised timetable for the project is included at Table 1 (see page 4)
- undertaking surveillance across 9% (433 ha) of the South East Queensland (SEQ) area from October to December 2017, with 12.9% of the SEQ area now surveyed. A map that shows the areas that have undergone targeted surveillance to date is at Appendix 4. Surveillance on six sentinel sites was also completed, although a number of sites remain partially surveyed due to access issues preventing effective surveillance at the time (page 4). A summary of recent surveillance activity at sentinel site locations is at Appendix 5
- carrying out responsive delineation surveillance across 1234 ha, using a further 12.34% of the budget for this activity. Also, the deployment of odour detection dogs for delineation on high-risk sites and post-treatment surveillance over approximately 324 ha identified no further infestation on these sites (page 4)
- completing the schedule of actions (treatment, surveillance, tracing and investigation) on the significant detections at Lowood and Beaudesert that were identified in the previous quarter (page 5)
- identifying five cases of minor non-compliance during 72 routine compliance checks. All five cases were resolved, with all parties determined as compliant at 31 December 2017. Two cases of major non-compliance, which involved movement of soil to outside the fire ant biosecurity zones, were also investigated (page 5). A map that shows the locations where compliance checks were undertaken during the second quarter of 2017–18 is at Appendix 6
- fulfilling the communication and engagement activity targets as per the 2017–18 Work Plan schedule. A summary of progress to date is provided in Appendix 7
- working with the Organic Industry Standards Certification Council and the Commonwealth Department of Agriculture and Water Resources to alter the status of s-methoprene insect growth regulator to become an allowed input for certified organic production (page 5)
- analysing 1527 fire ant samples for social form, which revealed that colonies detected in SEQ to date are predominantly monogyne (>95%). This finding suggests the genetic diversity of fire ant clusters within the south-east fire ant population will deteriorate over time (page 6)
- identifying 1197 suspect ant samples, of which 71% were diagnosed as fire ants. Approximately half of these samples were sourced from the general public (page 6)
- initiating a comprehensive review of the Program's information and communication technology systems to identify all information system requirements, and locate gaps in services delivered by the current information systems being used (including the Fire Ant Management System). This review involves a thorough analysis of all current business processes employed by the Program (page 7)
- designing a field mobility solution to record treatment and surveillance data in real time, following a workshop with the Environmental Systems Research Institute (page 7)
- commencing business functionality requirements analysis, purchasing a Microsoft Dynamics 365 licence, and configuring the customer relationship management module and web portal as part of the Program's Community and Stakeholder Engagement Solution (page 7)
- convening the Program Steering Committee meeting on 17 November 2017, which included a field trip prior to the meeting (page 8)
- monitoring expenditure on Program activities. The impact of the Program's delayed commencement of eradication treatment was compounded by interruptions to the treatment schedule from prolonged rainfall during much of the second quarter, so expenditure to date is under budget. A detailed breakdown of the 2017–18 second quarter and year-to-date expenditure is also provided (page 8)
- approving advertisement of two management positions and four compliance officer positions, and continuing negotiations on the relocation of Moggill and Richlands staff to new headquarters at Berrinba. A detailed update on the Program's ramp-up activities is provided in Tables 5, 6 and 7 (pages 9 and 10).

TREATMENT

Planned treatment

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

Fire ant infested areas of South East Queensland, areas within 2 kilometres of known infestations, and high-risk areas in between will each receive three rounds of treatment.

Aerial and ground baiting treatment started approximately six weeks later than planned, at the end of October 2017. The subsequent rollout of treatment was also hampered by unusually wet weather. During the second quarter, SEQ experienced its wettest October since weather recording began at the turn of the 20th century, with rainfall up to 150% above the monthly average. These conditions restricted the distribution of bait, which is rendered ineffective when wet.

The delayed start was also compounded by a longer than anticipated timeframe for 'scaling-up' the Program in the area of field staff training and recruitment. The Program's present reliance on manual recording systems has also contributed to delays in planning and allocating work on the scale that is required.

Despite these factors, substantial progress on the delivery of planned eradication treatment has been made over the second quarter (see Figure 1). The map at Appendix 2 shows that section of Area 1 which has received eradication treatment up to 31 December 2017.

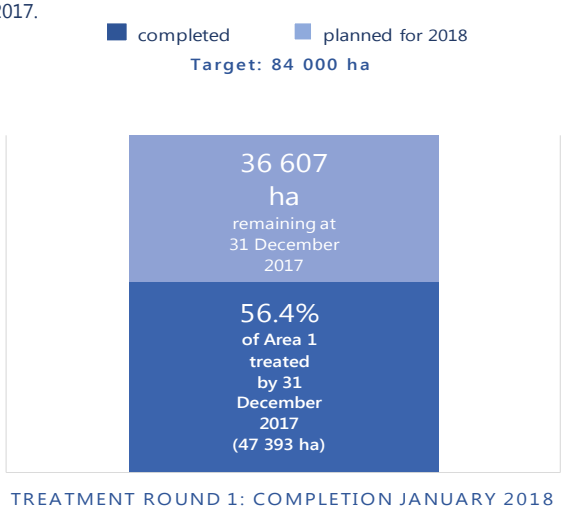


Figure 1: Planned eradiation treatment undertaken between October and December 2017

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

All new infestations undergo a risk assessment to determine if a DNI is a priority, particularly where the infestation poses a public risk.

Fire ant bait uses insect growth regulator (IGR), and is distributed over fire ant nests to be destroyed by DNI, particularly in areas where nests present a risk to the public, local native fauna, and domestic and farm animals.

Additional IGR is not applied to new infestations detected within an area delimited for planned eradication treatment (e.g. Area 1); however, for all new infestations detected outside a planned treatment area, broadcast baiting is applied out to a 100 m radius from the fire ant nest.

Performance for the second quarter 2017–18

Between October and December 2017, there were 3111 fire ant colonies destroyed by DNI using the chemical *fiprinol*. Responsive bait treatment was also applied to 1129 ha during the second quarter, which represents expenditure of 11.29% of the budget for responsive bait treatment. Year-to-date expenditure for DNI remains within budget, with 42% of the budget spent to date.

The locations of fire ant infestations detected throughout the second quarter are shown on the map at Appendix 3.

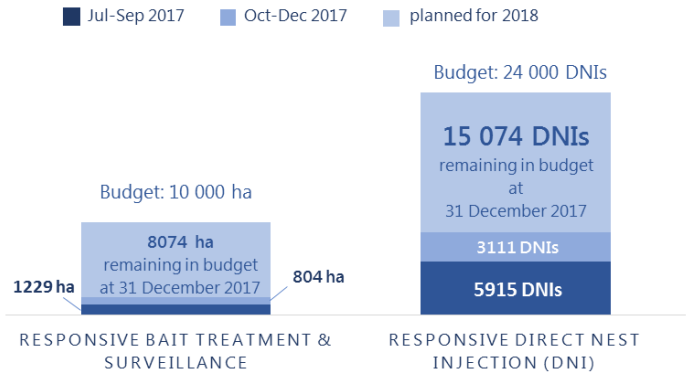


Figure 2: Responsive bait and DNI eradication treatment applied between October and December 2017

SURVEILLANCE

Visual surveillance is most effective when undertaken during wet weather and in the cooler months. During wet weather in particular, fire ants become active in maintaining their nests, which serves to increase the visibility of fire ant mounds to the naked eye.

Planned targeted surveillance

Annual target: Survey 5000 ha, including a minimum of 1500 ha within the 2 to 5 km target surveillance zone of Area 1

Surveillance is undertaken to determine levels of infestation in those areas that provide a highly suitable habitat for fire ants. Between July and December 2017, surveillance was undertaken across 31.6% of the total land area of Areas 1, 2, 3 and 4.

Performance for the second quarter 2017–18

Despite the favourable surveillance conditions, no surveillance of the Area 1 boundary was undertaken during the second quarter. This was due to the deployment of existing field resources to eradication treatment activities prior to the Program's ramp-up plans being fully operationalised. Planned targeted surveillance is scheduled to increase in May and June 2018 following completion of the 2017–18 planned treatment season.

In total, 9% (433 ha) of Areas 2, 3, and 4 were surveyed between October to December 2017, with 12.9% of the SEQ area surveyed by the end of the quarter. The map at Appendix 4 highlights specific locations within SEQ that have undergone targeted surveillance to date.

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

These sites provide a highly suitable habitat for fire ants and are therefore the most likely locations for infestations to be found.

During the second quarter, surveillance was completed on six sentinel sites—three housing development sites, two crop farms and one turf farm, with no fire ants detected at any of these sites. To date, eight sentinel sites remain partially surveyed because of either the ground being too wet to survey at the time, farming activity, or inaccessibility due to dense vegetation or grass. These sites will be scheduled for completion during the cooler months when the vegetation and grass have died off, and through arrangement for improved access to enable effective surveillance. Appendix 5 provides a complete list of sentinel sites that have been subject to recent surveillance activity.

Community surveillance

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

Surveillance by the general public is essential to detections of new infestations in areas the Program has not otherwise targeted for planned treatment and surveillance activities. Between October and December 2017, the Program received 1590 reports of suspicious ants from the general public via various channels, including calls to the customer service centre, online submissions and social media enquiries.

How the Program determines whether a sample is to be collected is based on information provided by the public. In instances where a report suggests fire ants are present, or where the photographic evidence provided shows suspect ants, the Program will collect a sample of these ants for diagnosis. Where reports don't indicate fire ants are present, a sample kit is sent out to the individual with a request that they collect a sample and send it back to the Program for identification. A spike in suspected ant reports occurred during October 2017 with 719 reports received by the Program. This is a 63% increase on the monthly average of the last financial year (440).

Remote sensing surveillance

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

The 2017–18 Work Plan highlights the fact that RSS activities (flights and ground component) will not be operational in 2017–18, although progress of the research and development (R&D) phase will be monitored through key project milestones. Deployment of the new technology will support verification of eradication as the Program shifts to full eradication mode.

Procurement for RSS technology progressed to the invitation to offer (ITO) phase in the first quarter of 2017–18, with 10 submissions received by the deadline of 10 October 2017. An assessment panel comprising independent and Program experts evaluated all submissions and identified preferred suppliers.

Negotiations are underway with these suppliers to determine what can be provided given the project's $2 million budget, with the Program exploring options to expand the budget if necessary. Extension of the ITO submissions deadline and the 2017–18 end of year holiday season delayed progress by approximately two months. Project deliverables impacted by this delay are: finalisation of the R&D contract, development of the R&D project plan, and commencement of the R&D project components.

Table 1: Indicative timeframe for RSS project deployment

Key deliverables	Estimated due date	Status
ITO released to market	September 2017	Complete
ITO closed	10 October 2017	Complete
Evaluation of ITO responses	October 2017	Complete
Negotiations with supplier(s)	November 2017	Commenced
R&D contract(s) finalised	January–February 2018	Not commenced (rescheduled from Dec 2017)
• Development of project plan, including time frames 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	February 2018	Not commenced (rescheduled from Dec 2017)
Commence project (as specified above)	February–March 2018	Not commenced (rescheduled from Jan 2018)

Responsive surveillance

All new detections receive the minimum amount of delineation surveillance of 100 metres. Responsive delineation surveillance is conducted around the infestation to determine its extent and severity at the same time that responsive bait treatment is applied. Responsive delineation surveillance was carried out across 1234 ha during the second quarter, using 12.34% of the budget. In the year to date, delineation surveillance has been undertaken on 5840 ha, which represents 58.4% of the budget for this activity.

Odour detection dogs were deployed with field staff in early October 2017 to complete delineation surveillance of approximately 65 ha surrounding the significant detection identified in Beaudesert during the previous quarter. Furthermore, dogs were engaged to conduct subsequent high-risk site surveillance over 150 ha adjacent to the Beaudesert site, with no further fire ants detected.

Post-treatment validation surveillance

Annual target: All outlier detections, significant detections and outlying infestations receive validation surveillance in accordance with Program protocols

Post-treatment validation tasks are mainly concentrated on infestations beyond the northern, western and southern extent of Area 1. During the second quarter of 2017–18, post-treatment validation surveillance was undertaken over 109 ha using odour detection dogs.

Detections of importance

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

Application of the full schedule of Program activities (treatment, surveillance, tracing and investigation) is complete for the two significant detections identified at Lowood and Beaudesert during the first quarter. Significant detection reports for both of these locations are now finalised and were submitted to the Program Steering Committee on the 6 November 2017 (Lowood) and the 20 December 2017 (Beaudesert).

PREVENTING HUMAN-ASSISTED SPREAD

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

Under the *Biosecurity Act 2014*, biosecurity zones have been established in areas of SEQ where fire ants have been detected or where it is likely fire ant infestation exists. The regulatory provisions relating to biosecurity zones legally restrict movement of substances carrying fire ants in order to contain and prevent human-assisted spread.

Compliance checks

Seventy-two compliance checks were undertaken during the second quarter 2017–18, which resulted in five cases of minor non-compliance being identified. The cases of minor non-compliance are summarised below:

- In October 2017, the Program received advice that a landscape supplier located outside the boundary of the fire ant biosecurity zones had received unprocessed soil and other material. The matter was investigated, with an advisory letter sent to the organisation and a follow-up inspection scheduled for February 2018.
- Two additional cases (one in October and one in November 2017) related to the non-compliant practices of nurseries/plant providers regarding storage and inappropriate treatment of infestation. Both cases were resolved in November 2017, and both operators are now compliant with the regulation.
- In November 2017, two members of the public were found not to have met their general biosecurity obligation not to disturb or water their land following treatment. Both parties are now compliant.

Managing serious non-compliance

At the commencement of the second quarter, two investigations were underway into alleged movements of soil from within the fire ant biosecurity zones to outside the zones. The biosecurity risk was managed, with the destination sites treated with toxicant bait. Advisory letters were subsequently issued to each of the parties, and all issues were resolved and cases closed in October 2017.

In December 2017, an engineering and construction company notified the Program that one of its subcontractors had inadvertently moved soil from within the biosecurity zone to two locations outside the zone. The subcontractor voluntarily treated the soil with toxicant bait. This treatment will be repeated in February 2018. The Program has sent advisory letters to the company and the subcontractor involved.

COMMUNICATION AND ENGAGEMENT

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

During the second 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.

Communication before and during the treatment season is critical to notify residents of treatment activities occurring; alleviate concerns about the treatment process; raise awareness of residents' general biosecurity obligation after treatment has been applied for best efficacy; and advise that Program officers are authorised to enter any property to conduct treatment for fire ants as per the *Biosecurity Act 2014*.

The progress of the Program's engagement activity against the 2017–18 Work Plan targets are provided in Appendix 7.

Stakeholder engagement

In response to enquiries about the potential impacts of fire ant bait treatment on the certification status of certified organic farmers, the Program approached Australia's organic industry peak body, the Organic Industry Standards Certification Council (OISCC), as well as the Commonwealth Department of Agriculture and Water Resources, to have the status of s-methoprene (i.e. insect growth-regulating bait treatment used by the Program) altered so it becomes an allowable input for certified organic production. Presently, allowable inputs for certified organic produce in Australia are prescribed in the *National Standard for Organic and Bio-Dynamic Produce*.

The Program will continue to work with the OISCC and the Commonwealth in 2018, with a view towards altering the current status of s-methoprene to an allowable input.

Science, Research and Development

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*

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 Siesta® at Purga, and for Siesta® and Synergy® at Chuwar, were impeded due to higher than average rainfall in the south-east over much of the second quarter. In particular, the Chuwar plot was an open-cut coalmine, with the owner now rehabilitating the site to its former topography. Dense regrowth of wild vegetation has concealed the plot's treated infestations and prevented access for ground treatment and scientific monitoring purposes. Numerous plots previously designated as trial sites are also now substantially overgrown and inaccessible for monitoring by Program staff. New sites will subsequently be sought to conduct additional trials (see Table 2).

Genetic analysis and genotyping

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

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

Program resources were redirected in the second quarter of 2017–18 to clear the backlog of samples that had accumulated due to a shortage of trained staff in the first quarter.

Social form analysis has been undertaken on 84% of the samples received by the Program between 1 October and 31 December 2018 with 1527 samples analysed during the quarter. Results from genetic analyses over the life of the Program to date have consistently revealed fire ant colonies in SEQ to be predominantly monogyne (>95%). This is remarkable when compared to analyses undertaken on fire ant infestations in other parts of the world, where the proportion of polygyne colonies is relatively higher.[1] Recent scientific analysis by the Program demonstrates the genetic diversity of the remaining clusters within the Brisbane fire ant population is deteriorating over time, despite the noticeable increase in colony numbers and broader spatial distribution of the infestation.[2]

Table 2: Summary of scientific bait trial status

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	Delayed	Lengthy delay experienced in fulfilment of the bait order. This trial has been rescheduled to late April 2018, weather permitting.
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.

Diagnostic support

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

During the second quarter, the Program identified 1197 suspect ant samples, with 71% of these samples diagnosed as fire ants. The population of samples tested was sourced from the Program and the general public, with approximately half of these samples (49.8%) derived from community surveillance activity. All samples submitted during the second quarter of 2017–18 were diagnosed within two working days.

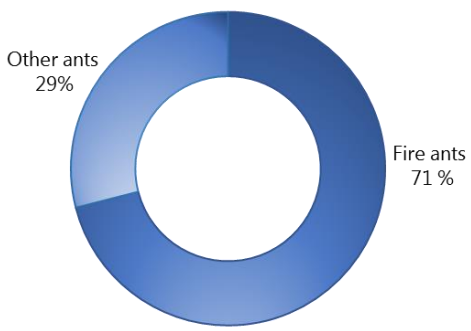


Figure 3: Proportion of samples diagnosed as fire ant

[1] 15% to 50% in southern parts of the USA (Tschinkel 2006); 23% to 92% in Taiwan (Yang et al. 2008).

[2] Unpublished data, National Program.

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*

Treatment and surveillance planning will commence in February 2018. A draft 2018–19 Work Plan will be submitted to the Steering Committee in early May 2018. The Manager, Planning and Quality Assurance position was advertised in December 2017 (vacant until then). Once this position commences, senior planning and senior quality assurance positions will be advertised.

Quality assurance

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

Work in this area will commence once the Manager, Planning and Quality Assurance is appointed and the quality assurance team is recruited.

Information systems

A comprehensive review of the Program's ICT systems was initiated in the second quarter of 2017–18. The ICT Systems Review aims to identify all Program information system requirements and locate gaps in services delivered by the current systems available to the Program, including the present Fire Ant Management System (FAMS). It will involve an independent analysis of existing departmental systems and external market offerings, with a view to providing options and recommendations for a future state that will best support the 10-year program. The initial phase of this project has commenced with a thorough analysis of current business processes employed by the Program.

Fire Ant Management System

The primary information system used by the Program to plan, create, and record the progress of treatment and surveillance task processing is FAMS. A program of work to enhance FAMS functionality is being developed, which will provide the Program with improved analysis of its activities for the expanded scope of work. The FAMS enhancement work is being informed by findings from the ICT Systems Review to address the priority requirements. During the second quarter 2017–18, the following FAMS work program milestones were met:

- delivered functionality to send SMS messages to clients on upcoming, completed and rescheduled aerial treatment
- delivered functionality to load treatment scope for eradication and suppression areas to facilitate progress reporting
- continued progress towards upgrading the Digital Cadastre Database to confirm property information in FAMS is current
- implemented latest technology upgrade to support spatial reporting and future field mobility functionality.

Field mobility

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

Recording of treatment and surveillance activity requires field staff to manually record their activities on paper job sheets, which are then returned for data entry. These practices increase the chances of human error, as well as damage to and loss of physical records; and increase the time for access to performance data to monitor and forecast resource requirements for planning and completing treatment and surveillance activities. Field mobility provides a solution to replace this manually driven process and provide a flexible and integrated data-recording mechanism that interfaces with FAMS and other contemporary data-recording systems.

During the second quarter of 2017–18, significant progress was made towards designing field mobility functionality, and analysis of the Program's business requirements is now complete. A workshop with the Environmental Systems Research Institute[3] was also undertaken to conceptualise a potential prototype using novel technological applications.

Community and Stakeholder Engagement Solution

In the first quarter of 2017–18, the Program commissioned the development of a Community and Stakeholder Engagement Solution (CaSES) using Microsoft Dynamics 365. This solution includes a customer relationship management (CRM) system that will support a customer web portal to enable the public to report suspicious ants, register for awareness training, complete a property information form, and create an account to stay up-to-date with Program activities. A key benefit of CaSES will be its ability to upload publicly generated data, which is captured by the web-based portal, that will interface with FAMS to reduce double handling of data. CaSES will provide a means to effectively manage and report on events and activities undertaken by the Community and Stakeholder and Engagement team, and will also provide for the comprehensive capture of queries and complaints that need to be addressed by all business groups within the Program.

During the second quarter of 2017–18, the Program purchased the Microsoft Dynamics 365 licence, commenced configuration of the CRM and web portal, and carried out a business functionality requirements analysis.

Policy, strategic planning and governance

Policies, strategies and plans

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

Progress on the development of key policy, strategy and plan documents over the second quarter is provided in Appendix 8.

[3] Environmental Systems Research Institute is an international supplier of geographic information systems software.

Significant meetings

The Program Steering Committee met for the second time in Brisbane on Friday 17 November 2017, and approved:

- the revised Program's Ten Year Plan and summary of the Ten Year Plan to be published on the Queensland Department of Agriculture and Fisheries website once the government's caretaker period is complete
- a communiqué to be published once the Program's scheduled progress reports are approved.

Risks

During the second quarter, the wet weather that prevailed over the south-east region for most of the period resulted in delays to planned and responsive treatment. Heavy rain impacts the delivery and effectiveness of ground treatment and surveillance in various ways. Rapid growth of grass and wild vegetation caused by such rain in non-urban infested areas obstructs surveillance and subsequent chemical treatment, while wet soil reduces treatment effectiveness. Intermittent work for a largely casual workforce as a result of wet weather resulted in a high attrition rate and loss of trained workers.

Climatic events were identified as a risk consequence in the Program's current Risk Management Plan. Consistent with the plan, the Program is implementing mitigating actions to ensure that additional surveillance and treatment is undertaken whenever weather permits (including weekends). The Program will undertake further risk management and planning in 2018 to develop a revised strategy to meet its treatment and surveillance targets.

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*

At 31 December 2017, total year-to-date expenditure for the Program was $11 263 514, which is less than the budgeted expenditure of $16 097 834.

A large portion of this underspend has arisen from implementation of the revised response plan for 2017–18, specifically, lower than expected spending on operating costs directly linked to the engagement of staff, and other higher cost activities associated with the scale-up of the Program's planned and responsive treatment regime.

A major contributor to the relatively lower than expected operating costs has been the delayed commencement of treatment activities in the first quarter. Moreover, the effect of this delay was compounded by interruptions to the planned treatment schedule arising from above average rainfall during most of the second quarter of 2017–18.

A detailed breakdown of year-to-date expenditure at the conclusion of the 2017-18 second quarter is provided in Table 3.

Table 3: Breakdown of quarterly financial expenditure at 31 December 2017

Activity	2nd quarter (actual) $	2nd quarter (budget) $	Year-to-date (actual) $	Year-to-date (budget) $
Directorate[4]	64 724	82 881	128,665	154 986
Administration, procurement, WH&S, HR	783 037	889 449	1 436 051	1 671 270
Policy, governance	124 839	130 690	251 938	332 581
Compliance	159 065	113 527	304 906	356 935
Community engagement	268 841	295 833	517 931	593 100
Science	365 908	343 428	693 445	706 085
Planning, QA	428 972	317 706	757 358	648 328
Planned and responsive eradication	4 589 432	6 533 013	5 839 282	9 893 267
Ramp up activities	316 539	284 290	664 751	680 745
RSS R&D	30 598	14 166	67 011	189 988
IT development	389 918	383 250	602 176	488 250
Total	7 521 873	9 388 233	11 263 514	15 715 535

Staffing

At the end of the second quarter, 222 personnel were employed by the Program. This figure comprises 126 field and office-based contractors, as well as 96 full-time employees. The table below provides details on the vacant positions that were also advertised during this period.

Table 4: Program positions advertised during the second quarter 2017–18

Position	Closing Date	Status
General Manager Directorate	1 November 2017	Application shortlisting in progress
Director Operations	1 November 2017	Application shortlisting in progress
ICT Project Coordinator Systems and Technology Innovation	19 December 2017	Application shortlisting in progress
Compliance Officer (x 4)	19 December 2017	Application shortlisting in progress
Manager Community and Stakeholder Engagement	19 December 2017	Application shortlisting in progress
Manager Planning and Quality Assurance	19 December 2017	Application shortlisting in progress
RSS Project Coordinator	12 January 2018	Advertised

[4] 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 5: Summary of progress made on accommodation for the National Program headquarters – October to December 2017

Deliverable	Due date	Status
Finalisation of contract for head office	30 November 2017	Negotiations for Wayne Goss Drive, Berrinba, progressed to financial commitment being sought in January 2018.
Select satellite depot sites	30 November 2017	The Program identified and negotiated occupancy of two sites within Area 1 at Laidley and Mutdapilly. Field teams are operating from both of these sites. Negotiations are continuing with Lockyer Valley Regional Council to secure the site for a longer period.
Relocate Moggill and Richlands staff to new site	1st stage: 31 December 2017 2nd stage: April 2018	Relocation cannot occur until the head office site at Berrinba is secured and fitted out for Program requirements.
Establish satellite site in Gatton	DAF site 28 February 2018	To deploy field teams from the departmental site in Gatton required significant capital works. The current site within reasonable proximity at Laidley, which meets the Programs requirements without significant fit-out, negates the need for the Gatton site.
Establish satellite site at Mutdapilly	28 February 2018	The former departmental site at Mutdapilly has been established, with field teams operating from this site. Negotiations are continuing to formalise the contractual arrangements for a longer period.
Secure aircraft facility at Wacol	October 2017	Aircraft continue to operate from the Wacol facility. The enhanced development is subject to the departmental capital works submission and awaiting departmental processes. The site upgrades will reduce operating costs, with fortnightly maintenance able to be conducted on site rather than machinery being ferried on and off site.
Aerial landing sites identified and secured	October 2017	The site at Mt Walker has aircraft operating from it, with contractual arrangements in place. Negotiations continue for four other sites, including one on the east.

Lower value contracts

Table 6: **Summary of progress on the execution of lower value contracts between October and December 2017**

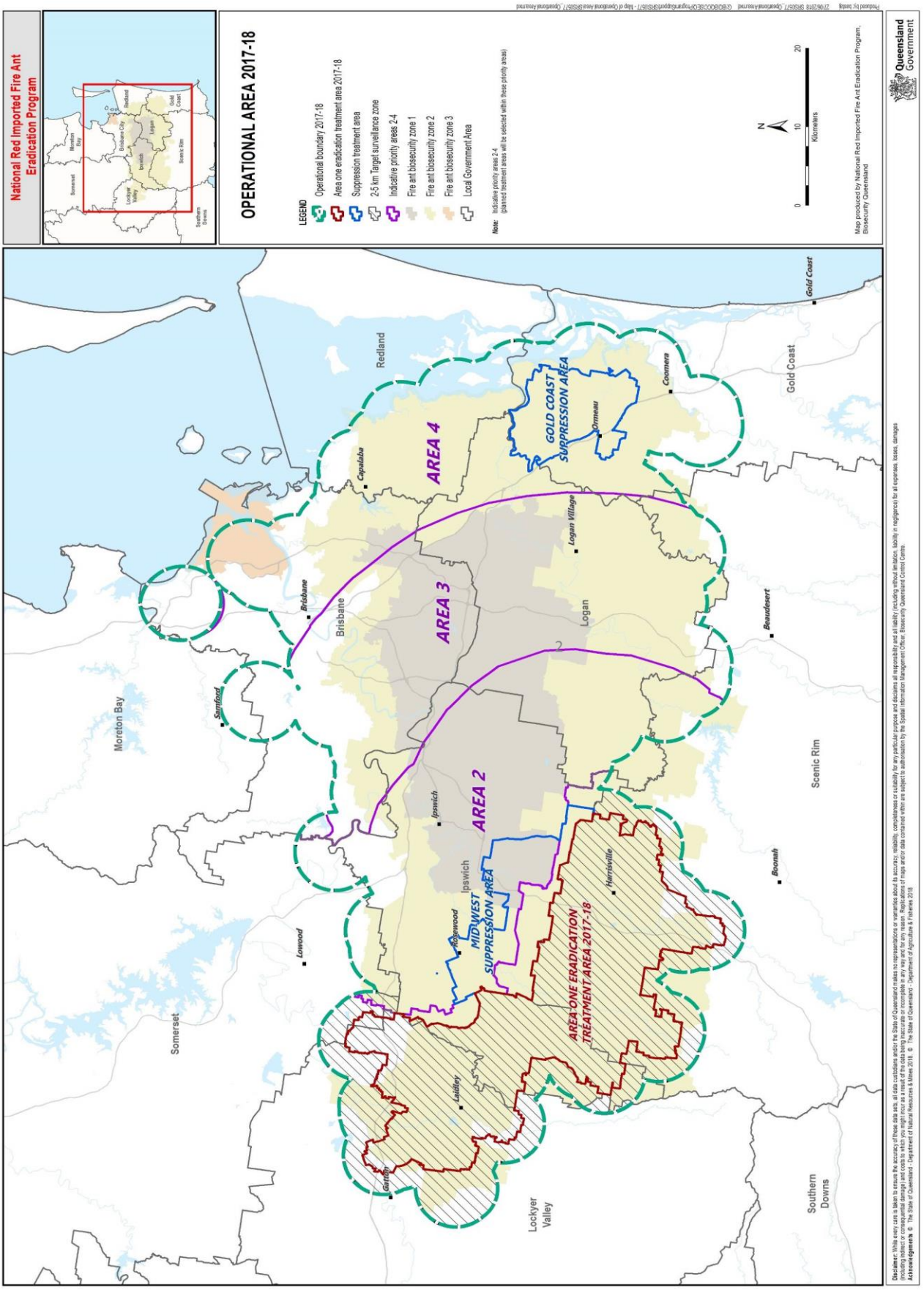
Supply	Due date	Status
Operational strategy option modelling	September 2017	The project has been delayed. Negotiations continue to revise timelines for delivery of the final report.
Skip bins for remote sites	December 2017	This was completed in November.
Genetics analyser maintenance agreement (1 year extension)	31 October 2017	This was completed and the contract maintenance agreement is in place.
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	Offer sent to evaluation panel for assessment. Evaluation panel is scheduled to meet in January 2018 to review and finalise arrangements.
Licensed pest control contract	30 September 2017	Interrogation of an existing contract arrangement enabled increasing licensed pest control personnel. This requirement will be incorporated into the new labour hire SOA (see Table 7).

Major contracts

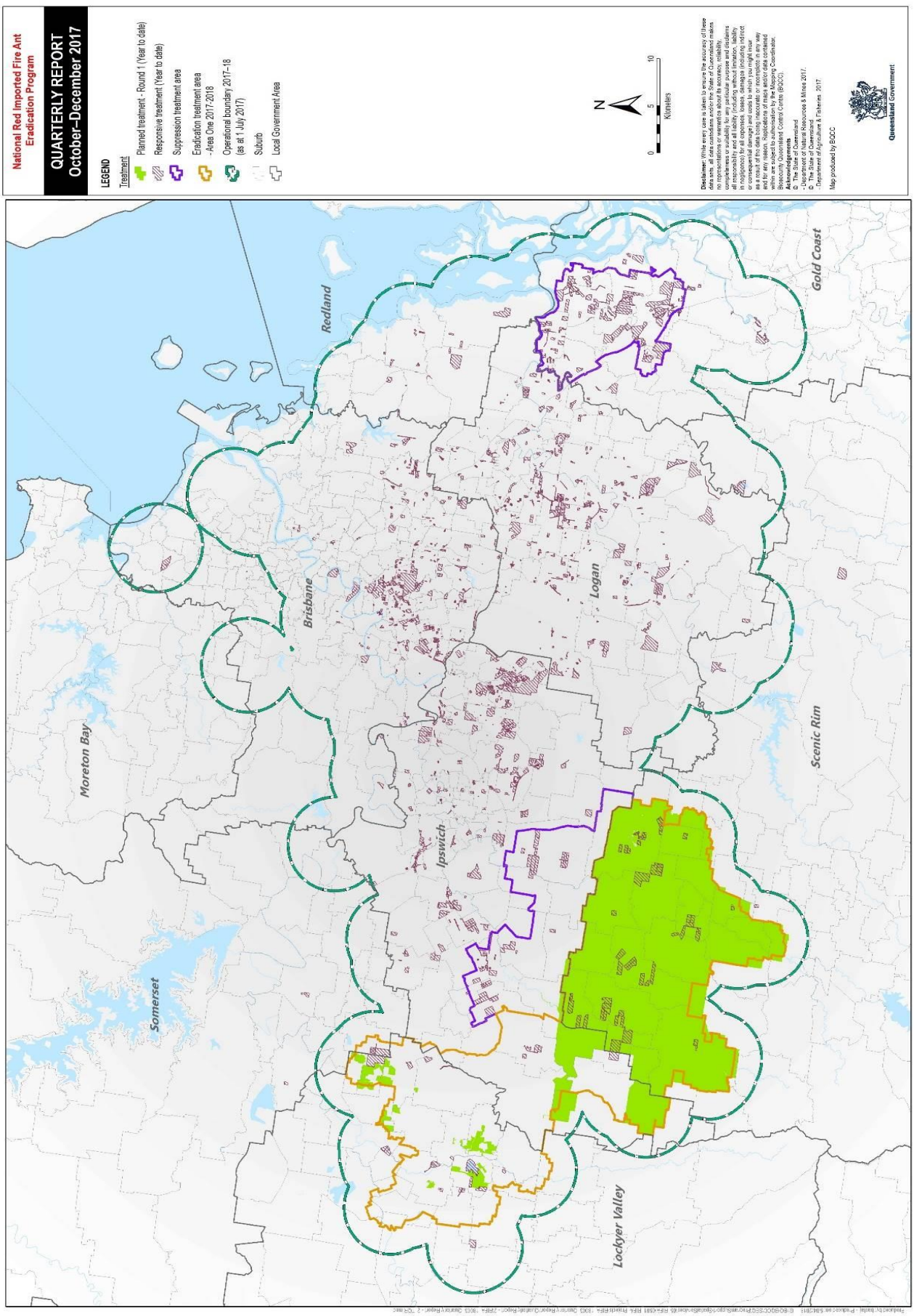
Table 7: Summary of progress made on the execution of major contracts between October and December 2017

Supply	Due date	Delivered date	Status
Aerial charter (new)	30 September 2017	November 2017	Purchase orders for aerial charter under the whole-of-government brokerage arrangements were placed in August to enable commencement in September. The significant procurement plan outlining major procurement activities was approved by Governor in Council in August. A direct contract with the supplier was completed in September.
Labour hire (new)	31 October 2017	-	Arrangements were implemented to operate under the Transport and Main Roads contract in August. The future plan is to develop a specific labour hire contract for the Program's needs.
Vehicle hire (new)	March 2018	-	Discussions with the Qld Government vehicle provider (QFleet) and contracted short-term vehicle hire companies identified suitable options for seasonal fleet management. Vehicle resourcing plan being developed.
Bait (1 year extension)	31 December 2017	October 2017	An extension to the previous bait contract was approved, with purchase orders placed under that contract in August to enable commencement in September. The significant procurement plan outlining major procurement activities was approved by Governor in Council in August. A direct contract with the supplier was completed in October.
Office contractors (SOA)	31 October 2017	December 2017	The existing whole-of-government arrangements were used and purchase orders for the engagement of office-based contractors to meet the immediate expanded Program needs were completed.
Ant colony facility (new)	28 February 2018	-	Investigations continued through the Department of Natural Resources and Mines and Department of Housing and Public Works into fit-for-purpose facilities at existing government scientific facilities. Negotiations commenced for suitable facilities at the Qld Health Coopers Plains facilities.
Odour detection dogs, training services and kennelling (new)	1 July 2018	-	The contract extension option of one year was used and completed in August. The Program requirements for the future year are being assessed before progressing the development of future contract requirements.
Manufacture, supply and delivery of chemical bait for tramp ant eradication (new)	1 July 2018	-	Planning commenced for the specifications for future bait and chemical supply requirements.

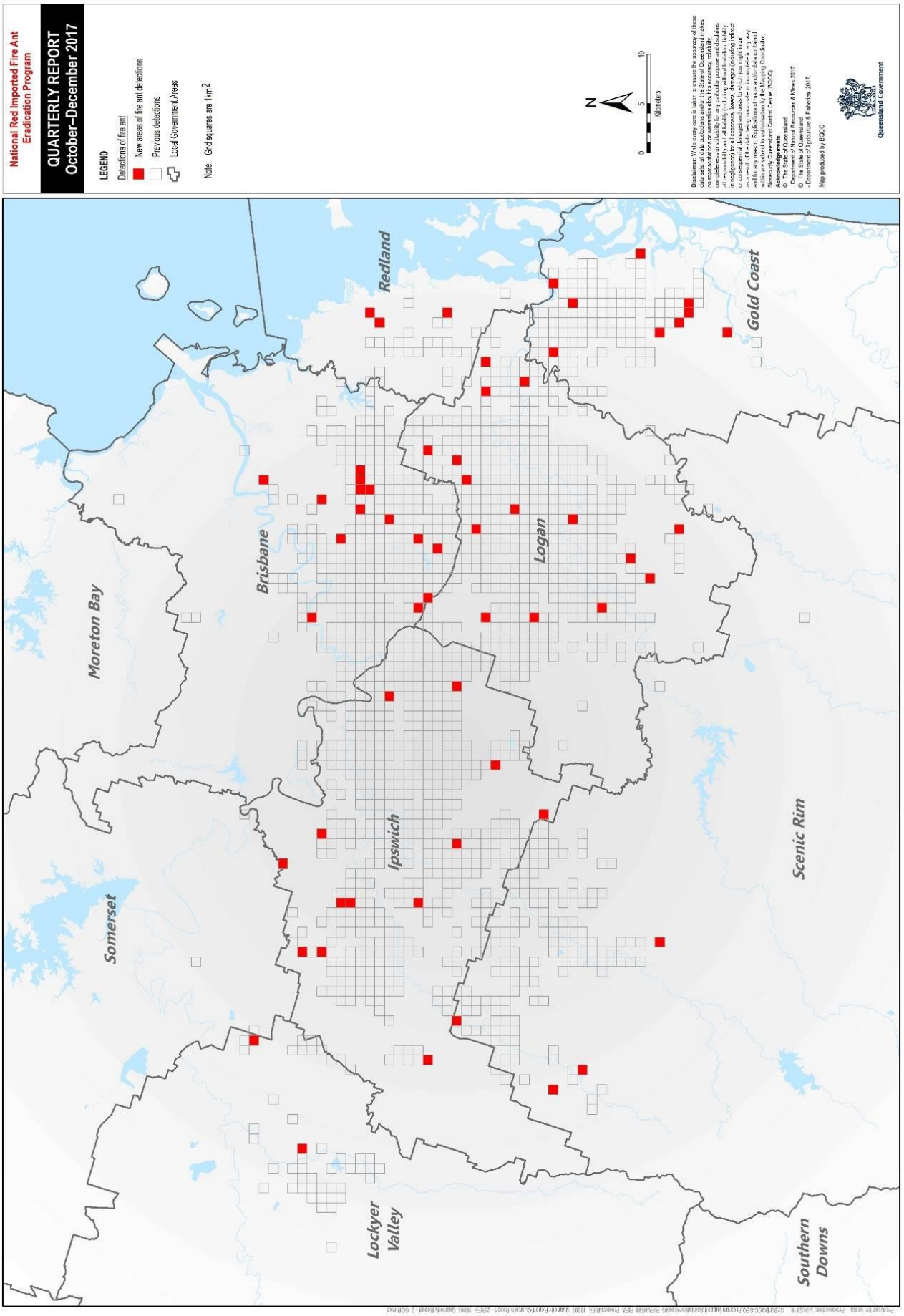
APPENDIX 1: MAP OF OPERATIONAL AREA



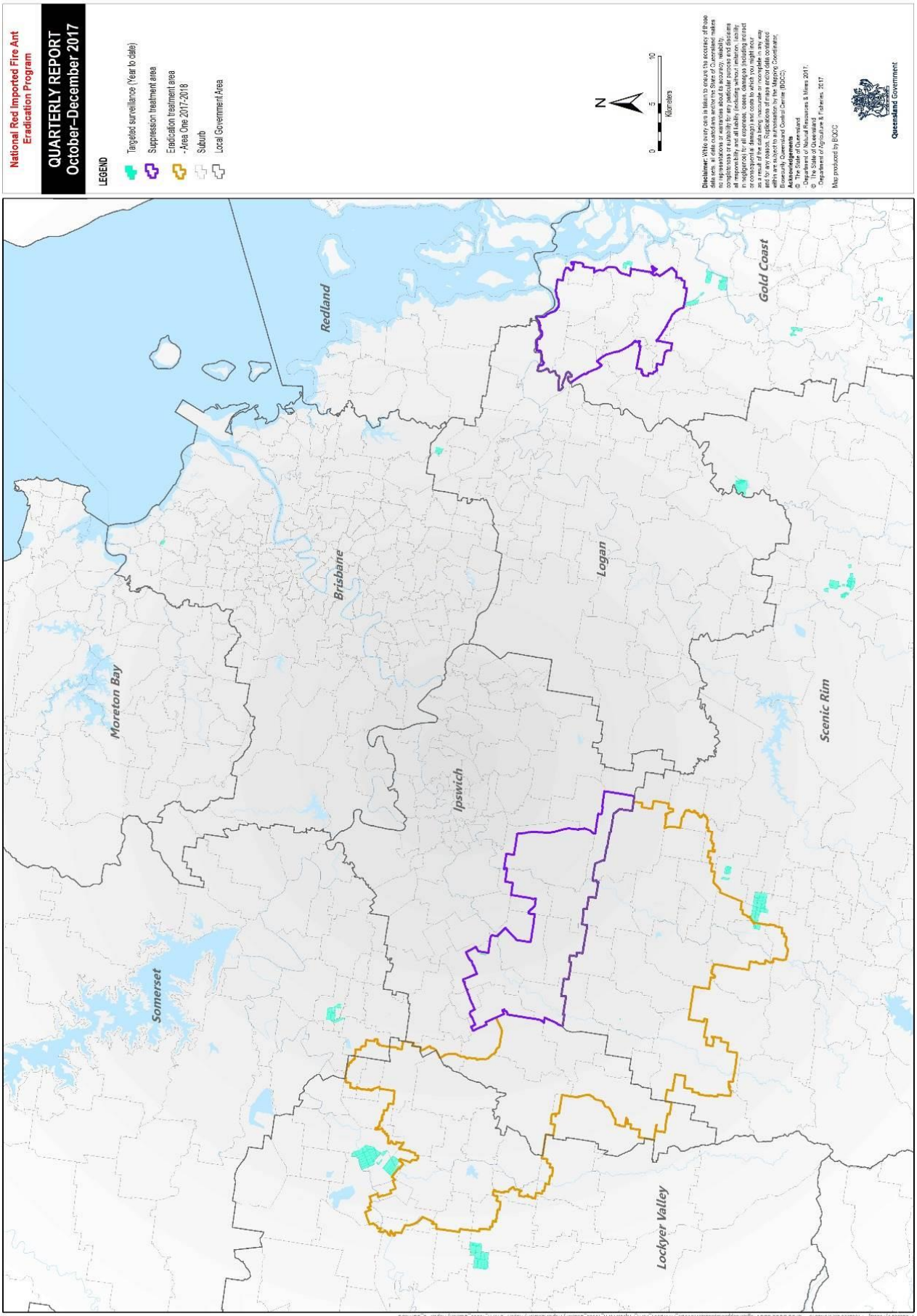
APPENDIX 2: MAP OF COMPLETED TREATMENT (SECOND QUARTER 2017–18)



APPENDIX 3: MAP OF DETECTED INFESTATIONS (SECOND QUARTER 2017–18)



APPENDIX 4: MAP OF TARGETED SURVEILLANCE (SECOND QUARTER 2017–18)

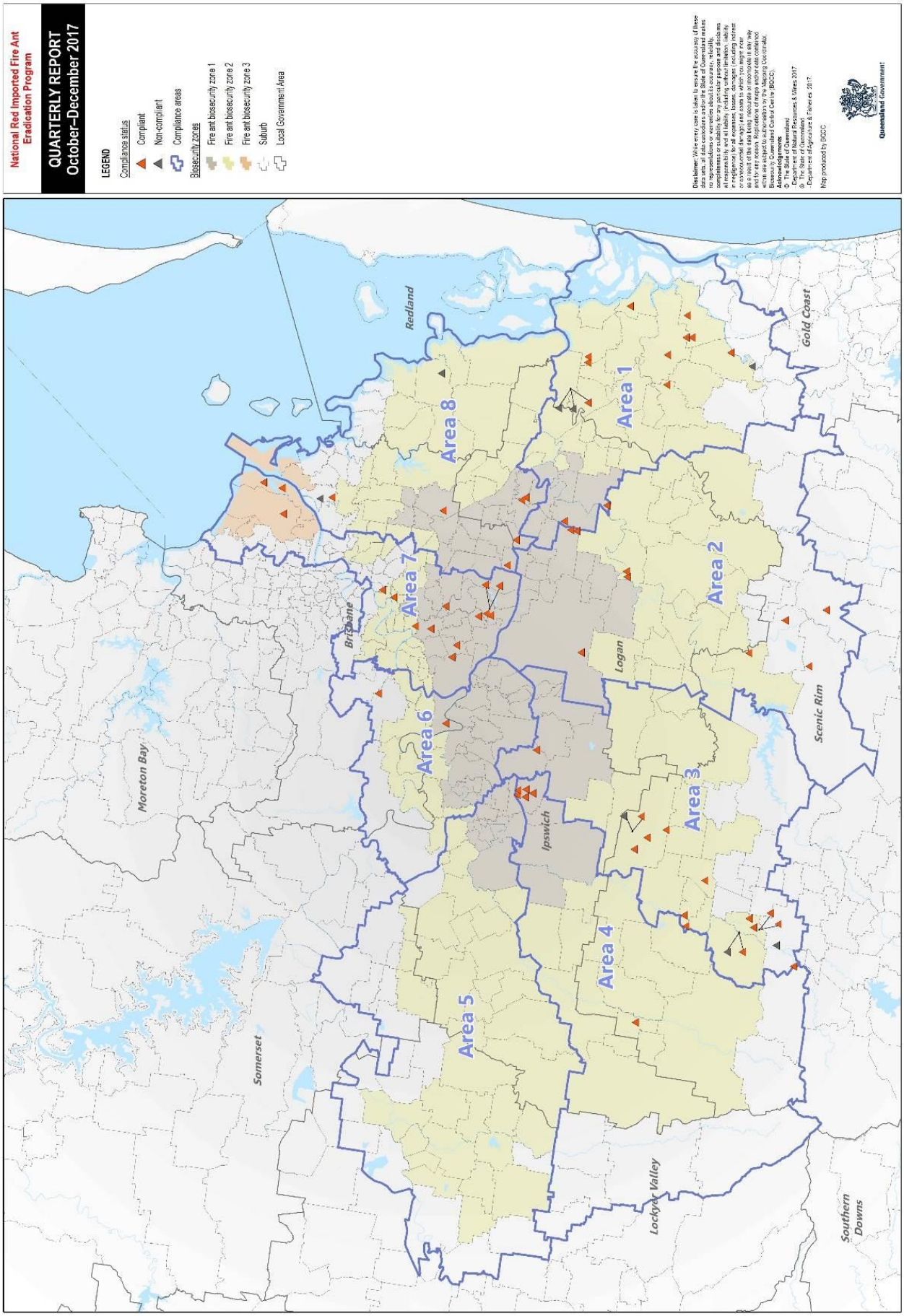


Appendix 5: Surveillance of sentinel sites at 31 December 2017

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	Significant detection Complete
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	Significant detection Complete
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	22–26 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	72% complete – dense vegetation/forest at boundary of farm prevents further surveillance
Gilston	Development	30 Jun 2018	34	10	24 Aug 2017	No	30% complete – dense bushland prevents further surveillance
Fassifern Valley	Cropping	30 Jun 2018	75	0	28 Sep 2017 onwards	-	To commence in 2018
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	0	2 Nov 2017	-	No start date
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
Keperra	Old quarry site	30 Jun 2018	58	0	N/A	N/A	Not possible to survey as property is fenced off
Boyland	Turf farm	30 Jun 2018	126	118	16 June 2017	No	94% complete – remaining ground area is too wet to survey

[1] Todd Road (Rivers Edge estate)
[2] Millers Road
[3] Blue Grass estate

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



Appendix 7: Community and stakeholder engagement activity (Second quarter 2017–18)

Engagement source	Engagement activity	Target (year)	Actual (second quarter)	Actual (year to date)
School program	School visits	80	12	31
	Students attending	7500	2039	4007
General awareness training (including both industry and community)	Training sessions provided	96	17	37
	Number of trainees	2400	459	1154
Events attended (event season Mar–Sep)	Number of events attended	5	13	28
	People directly engaged	24 000	606	13 066

Appendix 8: Progress of policy, strategy and plan documents

Policies

Task	Focus	Status
Waste facilities		Discussion paper and policy paper drafted
Managing large-scale disturbance		Discussion paper to be drafted
Dealing with non-compliance (with movement controls)		Drafting of the standard operating procedure has commenced
Fire ant biosecurity zones		Drafting of discussion paper with proposed amendments to the regulation
Treatment for fire ants by general pest management technicians		Discussion paper drafted
Treatment by landowners/businesses		Discussion paper drafted and undergoing revision
Genetics		Under discussion
Declaration of proof of freedom		Not 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 commenced
Compliance strategy		Drafting has commenced
Communication and engagement plan		Drafting has commenced
2018–19 Work Plan		New. Not commenced
Reporting guide		Drafted. Program support resolving FAMS issues to automate reporting of information where possible

Key	
	Priority in 2017–18
	Priority in future years

APPENDIX 9: 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 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 is 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	Areas of land that are frequently monitored for the presence or absence of fire ants.
Significant detection	Discovery of a fire ant infestation that lies beyond the boundary of the operational area. The boundary of the operational area is a 5 km buffer around the entire area of known infestation (see *Operational area*).

Term	Definition
Social form	A classification based on a genetic trait that differentiates among fire ant populations (see *Polygyne* and *Monogyne*)
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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