

Quarterly Report 4

2020–21

National Red Imported Fire Ant Eradication Program South East Queensland



Report to: National Steering Committee
Period: April–June 2021

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1. Scope of report

The National Red Imported Fire Ant Eradication Program began its 10-year Eradication Plan in July 2017, which focuses on finding, containing and eradicating fire ants in South East Queensland.

Running from 2017 to 2027, the 10-year Eradication Plan's underpinning strategy is subject to verifiable eradication. It includes five phases and three checkpoints before proof of freedom from fire ants is declared (see Table 1 below). Using a staged, rolling treatment strategy from west to east, the aim is to contain the extent of the fire ant infestation (Phase 1) and reduce the size of the infestation in South East Queensland until eradication.

Table 1: Overview of fire ant management strategy

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

This report outlines progress in delivering the 10-year Eradication Plan and the program's annual work plan. This includes relevant key performance indicators for the period of April–June 2021.

2. Key insights

Progress against key performance indicators (KPIs)

Progress against program KPIs is summarised in Table 2. Most KPIs are reported on a yearly and/or three-yearly basis, however since they apply to activities scheduled at different times not all KPIs are reported in the quarterly reports.

Table 2: Progress against KPIs traffic light report as at 30 June 2021

Yearly KPI completed
 On track/progress as anticipated
 Monitoring/minor issues
 Off track/critical issues
 Not required/not relevant

Mobilisation					
Objectives	KPI	KPI target (2020–21)	Progress against KPIs	Status	
1 Stakeholders within, and adjacent to, the fire ant biosecurity zones are aware of the presence of fire ants, risks, controls and options to manage them	a. Percentage of stakeholders aware of the presence of fire ants in South East Queensland	92% of stakeholders report awareness in surveys by June 2021	The report on the first of two surveys this calendar year to determine relevant stakeholder awareness, participation and attitudes was received in late February 2021. Of those surveyed, 95% reported awareness of fire ants. See Mobilisation below for more detailed information about results.		
	b. Percentage of stakeholders aware of the risks posed by fire ants	30% of stakeholders report awareness in surveys by June 2021	The aforementioned February 2021 report showed 98% were aware of the risk which exceeds the target.		
	c. Percentage of stakeholders aware of fire ant biosecurity zones	60% stakeholders report awareness in surveys by June 2021	The aforementioned February 2021 report showed 81% of those surveyed were aware of the risk which exceeds the target.		
	d. Percentage of stakeholders aware of fire ant self-management options	30% of stakeholders report awareness in surveys by June 2021	The aforementioned February 2021 report showed 34% of those surveyed were aware of self-management options which exceeds the target.		
2 Stakeholders within the fire ant biosecurity zones support the program and its activities to eradicate fire ants	a. Percentage of stakeholders opposing NRIFAEP operations	Less than 1% opposition annually	The program received no refusals to treat a property this quarter.		
	b. Percentage stakeholder disclosing to be satisfied with NRIFAEP operations	90% stakeholders disclosing to be satisfied with NRIFAEP operations by June 2021	The aforementioned February 2021 report showed 72% of those surveyed said they were satisfied. It will not be known if the program has achieved a 90% level of satisfaction until early in the 2021–22 year when the next survey is completed.		
3 Stakeholders within the fire ant biosecurity zone actively participate in fire ant self-management actions (i.e., checking yards, reporting fire ants and/or treating fire ants)	Percentage of stakeholders disclosing that they participate in fire ant self-management actions	20% stakeholders participating in fire ant self-management actions by June 2021	The aforementioned February 2021 report showed 98% of those surveyed participated which exceeds the target.		

Containment					
Objectives		KPI	KPI target (2020–21)	Progress against KPIs	Status
4	To mitigate the spread and establishment of fire ants by reducing the relative density and vigour of the fire ant infestation	a. Percentage of stakeholders who treat fire ants themselves (i.e., self-management)	10% increase annually in stakeholders surveyed disclosing that they treat fire ants themselves	A report on the results of the first of two surveys this calendar year to determine relevant stakeholder awareness, participation and attitudes was received in late February 2021. There was no base line data prior to this report to use as a benchmark to measure an increase. However, 7% of people surveyed said they treat fire ants themselves.	●
		b. Percentage of fire ant infestations that are polygyne	Less than 1% of fire ant infestations are polygyne	A backlog in genetic tests exists mainly due to an increase in samples in 2020. In Q4, 6.95% of samples were tested with no polygynes found.	●
		c. Relative spread of fire ants within containment area as measured through population genetics	Maintain at 4 or increase the number of genetically distinct fire ant populations (i.e., family clusters) within South East Queensland	The number of distinct populations for 2020–21 will not be known until the annual analysis report is finalised in February 2022. The 2019–20 annual genetic analysis found 5 genetically distinct fire ant sub-populations. While this is an increase from 4 in 2018–2019, the new cluster was formed by two other clusters merging. All clusters are still in genetic bottleneck, indicating genetic fitness is still low.	●
5	To mitigate spread of fire ants by restricting the movement of fire ant carriers (materials) within, between and beyond the fire ant biosecurity zone	a. Percentage of high-risk stakeholders aware of fire ant movement controls	50% of high-risk stakeholders are aware of movement restrictions/requirements by June 2021	The aforementioned February 2021 report showed 92% of those surveyed were aware, which exceeds the target.	●
		b. Percentage of high-risk stakeholders checked for compliance with human-assisted fire ant movement controls	The top 25% riskiest stakeholders checked for compliance at least once annually	<ul style="list-style-type: none"> 389 audits were undertaken in this quarter. 920 audits have been undertaken for the year, which is 54% of the 1698 (top 25% riskiest stakeholders) planned audit target. 	●
		c. Number of significant detections linked to human-assisted movement	Zero significant detections linked to human-assisted movement	Genetic results indicates that human-assisted movement may be the source of some of the detections found beyond the operational boundary during this quarter. Tracing investigations are underway but a confirmed link to human-assisted movement has yet to be made.	●
6	To mitigate the establishment of fire ants near (within 5 km) and beyond the 2019–20 Operational Boundary.	a. Total area that is surveyed for fire ants near and beyond the operational boundary	Area surveyed in a surveillance season is increased by 25% (7136 ha) from 2019–2020 levels (5709 ha) by June 2021	<ul style="list-style-type: none"> The total surveillance completed within 5km and beyond the 2019–20 operational boundary is 10 178 ha which is an increase of 78% from 2019–2020. As of 30 June, 5500 ha of responsive surveillance had been completed of which 3807 ha is within 5 km of the operational boundary and 1693 ha is outside the operational boundary. In addition to the responsive surveillance totals noted above, 4678 ha of planned surveillance had been completed – 3054 ha of targeted surveillance and 1624 ha of sentinel surveillance. 	●
		b. Percentage of stakeholders living near and beyond the Operational Boundary who look for and/or treat fire ants themselves	50% stakeholder participation by June 2021	The aforementioned February 2021 report showed 49% of those surveyed looked for and/or treated fire ants themselves. Although 1% below target, it will likely have reached 50% by June 2021.	●

Objectives		KPI	KPI target (2020–21)	Progress against KPIs	Status
		c. Presence/absence of fire ants following prescribed treatment regime at a site detection of fire ants near and beyond the 2019–20 Operational Boundary	Zero fire ants that are likely to be from original nests remaining alive 12 months after prescribed treatment regime	Post-treatment validation surveillance was conducted on 40 sites near and beyond the Operational Boundary with no remnant infestation found.	●
7	To mitigate the re-establishment of fire ants in eradication and clearance areas from adjoining (within 2 km from; buffer areas) fire ant infested areas	a. Percentage stakeholders living in buffer areas who look for and/or treat fire ants themselves	10% stakeholder participation by June 2023	The aforementioned February 2021 report showed 69% of those surveyed in buffer areas looked for and/or treated fire ants themselves, which exceeds the target.	●
		b. Percentage of buffer area receiving the prescribed treatment regime for fire ant containment (i.e., 2x insecticide treatment)	Prescribed treatment regime applied to 99% of planned area	<ul style="list-style-type: none"> Of the planned 44 989 ha to be treated by 30 June, approximately 42 259 ha has been completed (94%). Due to the treatment season closing and prioritisation of Area 2 and Clearance treatment areas (within Area 1 and Western Boundary), no further planned work was undertaken in the adjoining buffer areas (Western Overlap and Eastern Overlap) since Quarter 3. 	●
		c. Presence/absence of fire ants following application of prescribed treatment regime for fire ant containment at a site detection of fire ants within a buffer area	Zero fire ants remaining from original nests 12 months after prescribed treatment regime completed	There were no fire ants detected on previously infested sites in the buffer areas during Q4.	●
8	Assist with other (outside of SEQ) fire ant detection and eradication activities in Australia as requested	The reported level of stakeholder satisfaction of the program's response to requests for assistance with new fire ant incursions	100% satisfaction reported by stakeholders	Assistance by the program is limited due to movement controls between borders during the COVID-19 pandemic.	●

Eradication

Objectives		KPI	KPI target (2020–21)	Progress against KPIs	Status
9	To effectively eradicate fire ants from targeted areas within South East Queensland	a. Percentage of stakeholders who support NRIFAEP activities within eradication area	Less than 1% stakeholder opposition annually	The program received no refusals to the program this quarter and visited 22 486 sites.	●
		b. Total area receiving prescribed treatment regime for fire ant eradication (i.e. all planned insecticide treatment rounds)	Prescribed treatment regime applied to 99% of planned area	<ul style="list-style-type: none"> Of the planned 185 694 ha to be treated in Area 2, approximately 180 505 ha has been completed (97%). Aerial operations completed Area 2 on 19 May and ground operations ceased on 11 June due to low temperatures meaning fire ants were not foraging. Gap analysis was conducted throughout the season, and where possible, sites that did not receive a treatment during Round 3 period were prioritised for treatment during the final Round 4. 	●
		c. Number of fire ant nest infestations in monitoring (positive control) sites	Zero fire ants present in monitoring sites (Area 1/WB) within three	Area 1/WB monitoring was completed in early 2020 with no fire ants detected following the prescribed treatment regime.	●

Objectives	KPI	KPI target (2020–21)	Progress against KPIs	Status	
	following completion of prescribed treatment regime d. Percentage of eradication area within which fire ants are detected following prescribed treatment regime completion	months of completion of prescribed treatment regime Residual fire ant infestations are detected in less than 1% of the eradication area (Area 1/WB)	Eradication Area 2 monitoring was established but will not have adequate preliminary results until Q1, 2021–2022. <ul style="list-style-type: none"> The eradication area (A1/WB) consists of 23 950 sites (or properties) of which a sample number of sites is surveyed in line with the clearance surveillance priority map. From June 2020 to June 2021 11% of the total number of sites in A1/WB were surveyed. Of those sites surveyed 2.8% were found to have fire ants. The number of fire ant detections in the eradication area (A1/WB) was estimated to decline once the surveillance in the highest risk areas had been completed. It was assumed that there would be little or no residual infestation in the low-risk areas. The majority of the infestation is concentrated in the Scenic Rim local government area, across both high risk and low risk clearance zones. The program destroyed the infestation with a liquid insecticide by direct nest injection. The infestation will receive two rounds of broadcast baiting with an IGR, out to 3 km from the outermost nests, during the 2021–22 treatment season. The program is investigating possible reasons for the residual infestation in Area 1/WB. 	●	
10	To progressively decrease the fire ant infestation in South East Queensland through targeted eradication	Increase in the operational area that has effectively completed a prescribed treatment regime for fire ant eradication (as in obj 9)	33% of the 2019–2020 operational area by June 2021	<ul style="list-style-type: none"> Treatment continued in Area 2, the Western Overlap and Eastern Overlap areas in Q3. By June 2021 (following the current treatment season) the total area to have received treatment as a proportion of the total operational area will be 33% (Total area of WB, EA1 and A2 = 211 580.65 ha; Total area of operational boundary = 645 105.25 ha). 	●
11	To reduce the cost of fire ant eradication treatment, monitoring and surveillance activities while meeting KPIs	a. Average per hectare cost of the program's prescribed treatment regime to effectively eradicate fire ants	Average per hectare cost of applying prescribed treatment regime for fire ant eradication is reduced by 10% from 2019–20 costs	The calculation for this KPI is being finalised and will be reported by June 2022. Preliminary data indicates that the program has achieved significant savings during 2020–21: <ul style="list-style-type: none"> The average combined spend per hectare for all treatment and surveillance for Q1 in 2020–21 is \$337. This compares to \$143 per hectare for the Q1 period in 2021–22. For Q2 the cost per hectare was \$139 For Q3 this was \$161 For Q4 this was \$161 Further analysis will be reported in future reports.	●
		b. Average per hectare cost of the program's fire ant monitoring and surveillance regimes to effectively eradicate fire ants	By June 2023, average per hectare cost of monitoring and surveillance regime is reduced by 10% from 2019–20 costs	The calculation for this KPI is being finalised and will be reported by June 2022. See 11a for preliminary combined surveillance and treatment spend per hectare.	●

Clearance				
Objective	KPI	KPI target (2020–21)	Progress against KPIs	Status
12 To detect and destroy any residual fire ant infestations and gather evidence to support the demonstration of freedom from fire ants in clearance areas	a. Searches of locations ² deemed to be at highest risk of residual fire ants	The top 10% riskiest locations ³ have been searched by June 2021	<ul style="list-style-type: none"> No further clearance surveillance in Area 1 was conducted during Quarter 4 therefore the program will not meet this target. Of the top 10% riskiest locations (5000 ha) to be surveyed by 30 June 2021, 2 502 ha (50%) has received proactive or planned surveillance. In addition, approximately 1237 ha of responsive surveillance has occurred in the zones which, combined with completed planned surveillance, would account for the zones having 74% of the search area surveyed (3739 ha). 	●
	b. Total area searched for the presence/absence of fire ants	Every clearance zone has at least 5% of the area ⁴ surveyed by June 2021	<ul style="list-style-type: none"> Ninety out of the 92 have had at least 5% surveyed. One of the zones had infestation detected and therefore clearance surveillance ceased, and delineation surveillance (approximately 160 ha — 35% of zone) was undertaken (as represented in KPI 12a). One zone was not surveyed as field teams were unable to safely access viable habitat in the zone (i.e. no access roads). 	●
	c. Presence/absence of fire ants in areas searched	Zero fire ant detections at locations other than the top 20% riskiest locations	This target was not met. Twenty-four (24) of the twenty-seven (27) detections made in the clearance area this quarter were outside the top 20% riskiest locations.	●
	d. Presence/absence of fire ants following application of prescribed treatment regime for fire ant clearance at a site detection of importance	Zero fire ants remaining from original nests 12 months after prescribed treatment regime completed	<ul style="list-style-type: none"> Twenty-seven (27) detections were made in the clearance area in Q4. 24 of the 27 detections in Q4 were on previously infested sites with 10 of these potential survivors: <ul style="list-style-type: none"> 5 were destroyed by DNI but had inadequate IGR bait coverage so possible ants were survivors. 5 were confirmed as polygyne. 6 rounds of baiting are recommended to treat polygyne. From 2017–19 these were treated 6 times but not at optimal intervals, so could be survivors. These sites will receive 6 rounds of bait during 2021–22, alternating and a toxicant. 10 had received the prescribed treatment rounds so unlikely to be survivors. 4 were confirmed on old monitoring sites (2018–19), with prescribed treatment rounds so unlikely to be survivors. Treatment will be undertaken to ensure zero fire ants remain from original nests 12 months after the prescribed treatment regime is completed. 	●

1. Re Objective 10: The program Work Plan stated 38% instead of 33% and was a calculation error that will be corrected in a future update of the 2020–21 Work Plan. 2. Re Objective 12a: 'Sites' has been replaced by 'locations' for this KPI due to a change in terminology made after the 2020–21 Work Plan was completed. It will be corrected in a future update of the Plan. 3. Re Objective 12a Clearance zones are prioritised in line with the Clearance and Proof of Freedom Surveillance Optimisation Framework residual ant risk score based on the history of treatment in the zone. 4. Re Objective 12b: Areas with a viable habitat to survey only.

Summary of planned treatment and surveillance

Planned treatment includes eradication, suppression treatment and clearance.

Table 3: Planned treatment program schedule 2020–21 as at 30 June 2021

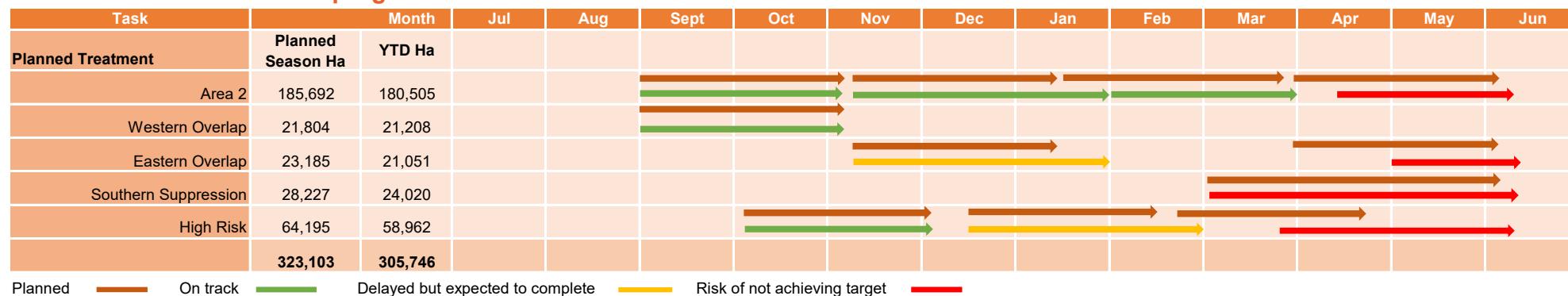


Table 4: Planned treatment as of 30 June 2021

Area	No. of hectares			
	Planned year total	Planned YTD total	YTD actual	% YTD
Location				
Area 2	185 692	185 692	180 505	97.40
Western Overlap	21 804	21 804	21 208	97.64
Eastern Overlap	23 185	23 185	21 051	92.62
Southern Suppression	28 227	28 227	24 020	85.67
High Risk ¹	64 195	64 195	58 962	90.29
Total	323 103	323 103	305 746	94.63

¹. High Risk includes Clearance treatment and treatment responding to southern significant detections at Wyaralong Dam, Canungra, and Mount Nathan.

See Appendices [1a](#), [b](#), [c](#), and [d](#) to view the progress maps.

Table 5: Planned surveillance program schedule 2020–21 as at 30 June 2021



Each clearance area is assigned a residual fire ant risk score—based on the history of treatment in this area—and ranked by risk relative to each other. The 10 clearance areas with the highest relative risk are high priority and assigned to receive 125 ha of clearance surveillance while all other clearance areas are to receive 15 ha of clearance surveillance.

Table 6: Surveillance progress—planned and responsive—2020–21

Surveillance task*	Year to date completed area (Ha)	Planned area year to date (Ha)	Year to date sites completed	Planned sites (year)
Sentinel	1 6224	1 570	312	265
Clearance	8 986	13 250	1 664	1 560
Targeted	3 753	2 630	2 155	2 864
Responsive	19 316	8 960**	18 927	N/A
Total	33 679	26 410	17 806	4 689

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

The surveillance season commenced in late June 2020 and concluded at the end of August 2020. The program will continue surveillance in the clearance areas for the remainder of the financial year. See [Appendix 2](#) to view the progress map.

3. Mobilisation: Activities to generate and maintain stakeholder awareness, support and participation that enables fire ant elimination from South East Queensland.

Raising stakeholder awareness

Major projects—advertising, branding and website

Advertising campaigns

The Queensland Government's Advertising and Communication Committee (GACC) approved an application to support all known program advertising for 2021–22. This will streamline and significantly speed up advertising campaign planning for the year. Greater efficiency has also been achieved by providing shorter campaign overviews as opposed to a full campaign rationale for advertising materials. This means, larger GACC applications can now be finalised in one stage rather than three, saving up to two months. The first campaign submitted under this new process was the community surveillance campaign (see below).

An agency has been engaged to develop a suite of creative materials and key messaging to encourage industry and community stakeholders to undertake behaviours that will help eradicate fire ants from Australia. This includes include brochures, posters, radio, print and social media advertising encouraging stakeholders to:

- Look for and report fire ants.
- Provide access to their properties so our teams can carry out treatment.
- Treat fire ants themselves.
- Not spread fire ants.

Final campaign imagery will be delivered next quarter.

Website and program brand

The first phase of the program's new brand was soft launched on 30 June. This includes a shortened name 'National Fire Ant Eradication Program,' new logo, website and URL—fireants.org.au. The new brand will be rolled out across all relevant documentation in time for the start of treatment season (September 2021), including communication and marketing collateral. Work will also continue refining and migrating all website content onto the program's new site.

Other projects

The program is not currently tracking sentiment on social media posts or advertising due to the change to the social media strategy. The change favours paid advertising over organic posts (which have been reduced to monthly posts on all channels). Sentiment is reviewed however, the program is no longer able to provide percentages of positive, neutral and negative sentiment.

Major campaign—Eradication treatment

The eradication treatment campaign ceased in Quarter 4 with residents in Area 2 receiving digital communication reminding them of the last treatment rounds for 2020–21. The third and final phase of the eradication treatment social media advertising campaign also ended in June. This geo-targeted campaign included a selection of new posts, videos and imagery as well as previous high-performing posts. A total of 29 894 people in Area 2 were reached and more than 1000 people engaged with the content. This engagement rate was more than three times the industry average of 1%. (see [Table 7: Social and digital media report](#) for a more detailed summary).

The results of the online advertising through NewsCorp publications also ran during April and June. The results have been sought from MediaCom but it has yet to be received. These will be provided in the Q1, 2021–22 report.

Major campaign—community treatment projects

Three self-treatment pilot projects were completed this quarter; in Yarrabilba, where Round 2 of treatment took place, and Gold Coast and Tamborine Mountain where community participants undertook Round 1 of fire ant treatment.

Yarrabilba

- 430 households participated in Round 2 of treatment in May following the first round in March 2021. This equated to 10% of total residential properties. The suburb was divided into ‘Program’ and ‘Community’ treatment areas that were randomly selected to test effectiveness of community treatment against program treatment. However, an absence of formal surveillance makes it difficult to draw entomological conclusions from this trial.
- The second treatment weekend was scheduled for late May, but delivery and treatment were moved to the following week due to the availability of field resources. Two schools and Logan City Council were also provided with bait to self-treat their land twice.
- The social media campaign for the Yarrabilba project reached more than 25 000 people, with true engagement from nearly 300 (see [Table 7: Social and digital media report](#)). The six-phase campaign was designed to encourage residents to register for the treatment project and spread the bait during the allocated two treatment weekends.
- Overall, the Yarrabilba project demonstrated that community, council, and schools can take a proactive stance against this pest. There was clear interest from communities to participate in fire ant management, however, the project did reveal flaws in the program’s systems and internal communication structures which need to be rectified if scale up is to be achieved.

Gold Coast

- This community fire ant treatment project was the program’s first scaled project to trial a whole-of-community approach to the containment of fire ants. The project targeted four suburbs—Arundel, Parkwood, Pacific Pines and Maudslan.
- A one-month awareness campaign secured 1836 registered homes (12.5% of residential properties). The suburbs were grouped in two, and then randomly assigned a treatment type: Program treatment (Arundel and Parkwood) and Community treatment (Pacific Pines and Maudslan). The latter were provided with treatment kits to treat their own yards, whilst the others were baited by a program field team.
- The five-phase social media campaign reached more than 326 162 people with impressions of over 1.6 million in the four blitz suburbs. Unlike Yarrabilba, this campaign targeted a new audience so it was designed to first raise awareness of fire ants and inform the audience of the impact the pest can have, before encouraging them to register for the treatment blitz. The engagement rate of this campaign was also more than three times the industry average (see [Table 7: Social and digital media report](#)).
- Treatment was scheduled to take place over several days in late May, however, problems with pushing data through the system and then a reduction in dedicated field resources meant the timeline needed to be extended. Work took several weeks. Almost 300 houses missed out on bait treatment due to the delay overlapping with a cold start to winter i.e. when baiting would be less effective. These properties received surveillance only with no fire ant nests found. Properties that missed out on program baiting will receive a free bait kit in the next stage of this project.
- Gold Coast City Council was also supplied fire ant bait, enabling them to treat 115 ha of their land.
- Overall, the Gold Coast project showed communities want to be active in the fight against fire ants and are very willing to receive bait and use it. Most found this easy to do. However, like Yarrabilba, this pilot project highlighted flaws in the program’s systems, internal communications structures and resource availability which need to be rectified.

Tamborine Mountain

- This project tested whether a community group/s can be equipped to engage with, recruit participation from and deliver bait to a discreet community. The critical measure was whether partnering with a trusted community group would increase success in building awareness, support and participation in a treatment project.
- The partnership pilot took place in Tamborine Mountain in the Scenic Rim, and included the suburbs of Mount Tamborine, North Tamborine and Eagle Heights. It did not include surrounding suburbs. There were 4066 residential sites identified and marketing was directed at these households to gain participation, including mail out, community activations, outdoor signage and a closed Facebook group. Four schools on the Mountain also agreed to share information.
- Four partnering groups committed to working with the program, helping store and distribute bait or treat land: Tamborine Mountain Landcare, Tamborine Mountain Chamber of Commerce, Tamborine Mountain Visitor and Information Centre and the Tamborine Mountain Botanic Gardens.
- There were 665 registrations (68 were outside the pilot project area and could not participate). The final eligible registrations were 597 (14.6% of households) exceeding the 10% goal. Participants collected their bait from the visitor centre and were asked to apply treatment on the upcoming weekend.
- The social media campaign focused on the community's environmental interests by providing information on how fire ants impact the environment before encouraging residents be part of the project. The campaign reached more than 53 000 people. The engagement rate was lower than the other treatment campaigns by more than 1%, likely due to the mountain's larger retired population where the content did not resonate enough (see [Table 7: Social and digital media report](#)).
- Many properties are larger size blocks, meaning properties over one acre received two bait shakers. In addition, schools were given free fire ant bait to treat their land. The Mountain's one sporting field (owned by Council but leased by many communities sporting clubs) also treated.
- Overall, Tamborine Mountain project showed the residents of the mountain wanted to keep their community free of fire ants. Their participation was a great start to making this happen with community sentiment positive and supporting the continued treatment of fire ants.
- Partnerships proved to be successful in creating groundswell for the project and it is recommended that this approach continue to be used.

Detections of importance campaigns

The program alerted industry and residents in the areas of Charlwood, Clarendon, Coulson, Fitzgibbon, Mount Sylvia, Boonah and Teviotville to check their properties for fire ants and report any suspect ant nests. Activities included:

- **Direct notifications:** emailed to 1233 businesses and 305 local community groups and sporting clubs and flyers delivered to 15 452 residents and businesses across the seven target suburbs and surrounding areas.
- **Roadside signage:** placed in 15 locations across the seven target suburbs and surrounding areas.
- **Social media:** ran two-week social media campaigns in Charlwood, Clarendon, Coulson, Fitzgibbon, Mount Sylvia, Boonah and Teviotville advising residents to take action which reached more than 95 000 people and achieved 4154 engagements and video plays (more than three-seconds) of nearly 12 000.

General awareness

The program continued its monthly stakeholder newsletter—Fire ant news—in Quarter 4, with all three newsletters being opened by an average of 32.78% of the subscriber database. About 100 people unsubscribed from the newsletter across April, May and June. This is a result of combining a large number of program databases at the end of 2020 (the database currently stands at 10 440 people). The prominence of a 'subscribe to our newsletter button' on the program's new website hopes to boost subscribers further.

In addition to the aforementioned campaigns, program key messaging continued to be released through minor and micro social media campaigns and program updates. A total of 16 social media posts (organic) resulted in audience reach of 278 335 and culminating in 40 834 engagements. A small amount of funds was allocated to boosting organic social media posts (see [Table 7: Social and digital media report](#)).

Sentiment of these posts was a mainly neutral, with the odd positive and negative comment. On Facebook—the program's highest performing platform—fire ant messages reached 270 387 people.

Our main webpage daf.qld.gov.au/fireants received 11 479 page views during this quarter, with people spending an average of three minutes on the page.

Other general awareness activities included both static and interactive displays in key community locations including libraries, schools and supermarkets around the western boundary and self-treatment area with close to 2500 people engaged with directly.

Table 7: Social and digital media report Quarter 4, 2020–21

Campaign	Reach	Impressions	Engagement	Video plays (3 seconds or more)	Cost
Significant detections campaigns	95 336	236 943	4154	11 976	\$3167.48
Gold Coast treatment blitz	326 162	1 670 487	10 725	336 985	\$17678.22
Tamborine Mountain treatment blitz	53 620	171 919	1054	19 922	\$2299.76
Yarrabilba treatment blitz	25 307	88 560	290	9952	\$1016.87
Fire ant biosecurity zone changes	191 463	495 397	9140	17 014	\$2500
Treatment 2020 — Area 2, Phase 2	29 894	144 040	1083	47 770	\$1925.46
Boosted organic social media posts	128 284	201 958	1391	N/A	\$1500
Total	850 066	3 009 304	27 837	443 619	\$30087.79

Media

Engagement with media outlets continued with a range of stories about community fire ant treatment projects, fire ant biosecurity zones and program review shared. The three media releases distributed to south east Queensland media and information or interview requests received from media outlets resulted in 63 media mentions—more than double the previous quarter.

The media releases about the Gold Coast community fire ant treatment project and the biosecurity zone changes had the highest reach, however the media outlets were more interested in hay compliance challenges in Clarendon and significant detections in Tarome and Boonah. A total of 124 746 people were reached using traditional media, which equated to an advertising spend rate of \$104 026 over this quarter.

While the program's media monitoring software no longer determines a story's sentiment, the program considers 49 of the 63 stories as neutral or positive.

Training

The program delivered fire ant awareness and treatment training to 324 stakeholders during Quarter 4. The program continues to develop online courses, that will provide self-driven courses to targeted groups. These online modules will cover fire ant impacts, the eradication program, movement controls and self-treatment. The initial pilot will provide targeted training to the building and development industry.

Councils

Local councils continue to be a focus area of program engagement. As well as monthly reports, several councils are now engaged as part of treatment project activities.

Scenic Rim Regional Council and Logan City Council have been cooperating with our community and stakeholder engagement team to include fire ant material in their council displays at local events and shows. Scenic Rim Regional Council also helped advertise the Tarome community conversation and a representative was in attendance on the night.

Building stakeholder support

Industry

A small campaign to promote changes to the fire ant biosecurity zones took place this quarter with 10 new suburbs added to the fire ant biosecurity zones and 20 suburbs moved from zone 2 into zone 1. Communications and engagement activities included:

- Update of interactive map and decision-tree for fire ant carriers
- E-notification to industry contacts across SEQ
- Industry e-Hub, hosting detailed information about requirements
- Fire ant news e-newsletter article
- Industry publications article
- Social media advertising (see [Table 7: Social and digital media report](#))
- Telephone engagement with key stakeholders
- Webinar, open to anyone in SEQ (attendance = 91)

On 25 May 2021, the program conducted a *Hay Field Day* in Kents Lagoon in the Scenic Rim Regional Council area, requested by farmers who attended a Hay Industry Collaboration Group in December 2020. Twenty-four hay farmers and dealers participated in the practical showcase on movement controls involving hay. Our science and compliance staff spoke about the importance of correctly storing and moving baled hay as fire ant spread through hay is a significant concern for Queenslanders. The feedback was very positive, and another Hay Field Day is planned for August 2021, in the Somerset Council area.

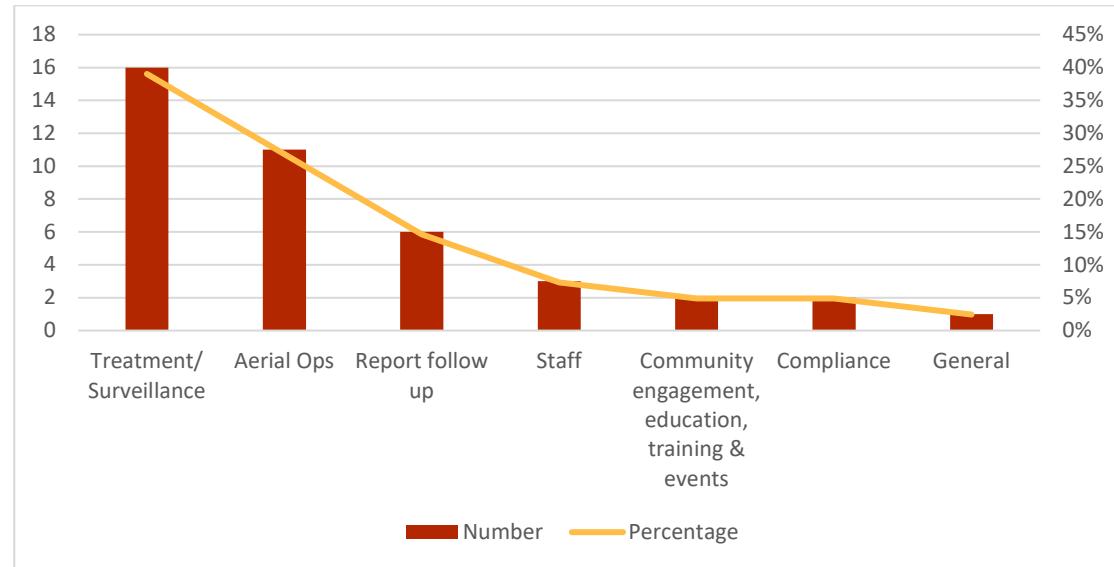
Complaints and feedback

In addition to reports of suspect fire ants, 1815 contacts were received by the department's Customer Service Centre about fire ants this quarter. For 636 of those contacts, the centre referred the contact to the program for action. Overall, there were 41 complaints (2%), 6 compliments (<1%), and 1767 enquiries (97%).

The majority of complaints were related to treatment and surveillance activities (39%), followed by aerial operations (27%) and report follow-ups (15%). Complaints about treatment and surveillance were varied, but included issues such as powers of entry, scheduling and treatment efficacy. Complaints about aerial operations were consistent with other quarters and were mainly about helicopter noise and bait treatment issues. Report follow up complaints focused on timeframes for treatment and nests being missed or reappearing. All complaints are addressed and responded to promptly by the relevant team within the program.

To help address these issues targeted messaging is included in communications materials.

Figure 1: Complaints—number and percentage in Quarter 4 2020–21



Refusing treatment by the program

No landowners refused treatment on their property this quarter. Some site owners refused entry by ground crews entering their properties after aerial baiting had been completed however, negotiations with landowners resulted in all sites being treated.

Empowering stakeholder support

Self-treatment initiative

The community fire ant treatment projects wrapped up in June (see **Major campaign—community treatment projects** for details). The strategies for the future community self-treatment projects have been drafted, and concepts approved by the Self-Management Project Board. These are:

- Gold Coast Community suppression project, a hybrid model of treatment across a larger area of the local government area.
- Tamborine Mountain phase 2, continuing to work with our community partners to deliver bait to those who want to protect their neighbourhood.
- Community responsive treatment project, enabling communities to undertake responsive treatment in the Calamvale Ward of Brisbane.

The program has continued to work with the Department of Education to progress the **education self-treatment project**. Communications are now in place with training for state schools due to proceed. Unfortunately, the process for approvals with the Department of Education is lengthy, and training of field staff has not commenced. Commencement date is still unclear.

All 20 **sports and recreational facilities** completed their fire ant treatment this quarter. Stakeholders were very willing participants. The project enabled the proactive treatment of 84.5 hectares of land, two times. The project has proven that engaging directly with sporting and recreational facilities is a viable means of community collaboration in the suppression of fire ants.

An online training course for the Building and Development Industry has been developed. Production is underway in partnership with Plant Health Australia. The educational asset will be a self-driven, modular course that covers what fire ants are, their impacts, how to treat them and movement controls relevant to this industry. This pilot course will be tested and promoted broadly across the industry. It will set a standard for developing more courses for other industry and community groups.

4. Containment: Activities to prevent the spread of fire ants within and beyond the program Operational Area.

While eradication remains the primary focus of the program, containment through the suppression of the existing infestation in non-eradication areas and preventing further spread remains a high priority. This includes prioritising detections of importance (DOI) at or near the operational boundaries, work with high-risk material industries to ensure compliance and vigilance to prevent spread through the human-assisted movement of fire ants, and working with the community to suppress the pest in areas with a heavy ant population. Landowners and residents in South East Queensland also play a critical role in suppressing the pest by treating properties or land they own or manage. This helps reduce the size and scope of the eradication task and degrades the genetic integrity of fire ant colonies.

Boundary containment

The program uses a risk-based approach to surveying for and eradicating fire ants from near the operational boundary. This includes sentinel surveillance in high-risk habitats and targeted surveillance around operational boundary areas to detect new or returning ant infestation. Clearance surveillance is also done using new monitoring sites within planned eradication areas to detect any residual ants.

Surveillance

The surveillance season commenced in late June 2020 and concluded at the end of August 2020. The program suspended surveillance in the clearance areas (Area 1 and the Western Boundary) for the remainder of the financial year to focus on meeting treatment targets. Clearance surveillance using remote sensing cameras mounted in helicopters will begin in the 2021–22 surveillance season to locate any residual infestation. See [key insights](#) above to view surveillance data for this quarter and [Appendix 2](#) to view the progress map.

Through proactive surveillance and communications encouraging people to check their yards and report suspect ants there were 33 detections found outside of the operational boundary and 22 detections within 5 km inside of the operational boundary (see [Detections of importance](#) for further information). The program acted immediately to destroy these infestations and ensured there were no further nests near the detections. Risk assessments will be undertaken on detections of importance and adapt responses as needed.

Eradication area protection

Suppression

Suppression treatment concluded in the Southern Suppression in May 2021 as the priority was the completion of Area 2. No aerial buffering was undertaken in the Southern Suppression treatment area and ground treatment was restricted to a certain sub area, which was completed in April. Progress is outlined in [Table 8](#).

Table 8: Planned suppression progress at 30 June 2021

Round 1		No. of hectares			Round 2	No. of hectares			
Location	Planned year total	Planned YTD total	YTD actual	%	Location	Planned year total ¹	Planned YTD total	YTD actual	%
Western overlap	21 804	21 804	21 208	97.67	Western overlap	NA	NA	NA	NA
Eastern overlap	20 030	20 030	17 772	91.08	Eastern overlap	3 156	3 156	3 124	99.00
Southern suppression	28 227	28 227	24 020	85.67	Southern suppression	NA	NA	NA	NA
High-risk ¹	23 737	23 737	20 079	82.19	High-risk ²	17 628	17 628	16 993	96.81
Total	93 798	93 798	83 079	88.57	Total	20 784	20 784	20 117	96.79
Round 3		No. of hectares			Round 4	No. of hectares			
Location	Planned year total ¹	Planned YTD total	YTD actual	%	Location	Planned year total ¹	Planned YTD total	YTD actual	%
Western overlap	NA	NA	NA	NA	Western overlap	NA	NA	NA	NA
Eastern overlap	NA	NA	NA	NA	Eastern overlap	NA	NA	NA	NA
Southern suppression	NA	NA	NA	NA	Southern suppression	NA	NA	NA	NA
High-risk ¹	17 628	17 628	17 053	96.68	High-risk ²	5 202	5 202	4 837	85.65
Total	17 628	17 628	17 053	96.68	Total	5 202	5 202	4 837	85.65

1. The total planned treatment differs to that budgeted because treatment activity is responsive to the changing needs for each week/month of the treatment period. See Finance below for further information. 2. High Risk includes Clearance Treatment and southern significant detections at Wyaralong Dam, Canungra, and Mount Nathan.

Responsive treatment

Responsive treatment is delivered when the community reports suspected fire ants and they are identified as positive. It is also delivered when positive sightings are found by program field staff in the normal course of treatment and surveillance work. These are prioritised according to level of risk. Detections presenting a high risk to public safety (such as those in schools, parks and sporting grounds) are given the highest priority along with fire ant detections outside or near the program's operational boundary (see [Detections of importance](#) for more information).

Community reports of fire ants

There were 5849 public reports of potential fire ants this quarter, which is a 62% increase from the same quarter last year (2882). Only two of these reports were residents confirming that they checked their yards and found nothing.

The top 10 suburbs to report fire ants were Jimboomba (Logan City), Park Ridge (Logan City), Redbank Plains (Ipswich City), Greenbank (Logan City), New Beith (Logan City), Logan Reserve (Logan City), Ripley (Ipswich City), Pallara (Brisbane City), Spring Mountain (Ipswich City) and South Ripley (Ipswich City). These 10 suburbs made up 27% of reports made this quarter.

Most suspect ant reports were located at a residence (61%), with roadsides or footpaths as the second most common location (10%) (figure 3). What made people report suspect ants (figure 4) was mainly 'just noticed something different' (23%) and 'I disturbed a nest while mowing/gardening' (16%). Notably, 484 people reported that they, or someone they know was stung, and 616 people actively went looking for fire ants.

The maximum days for the program to treat reported suspect fire ants this quarter was 12 days.

Figure 2: Public reports and maximum days to direct nest injection (DNI) treatment from January 2021 to June 2021

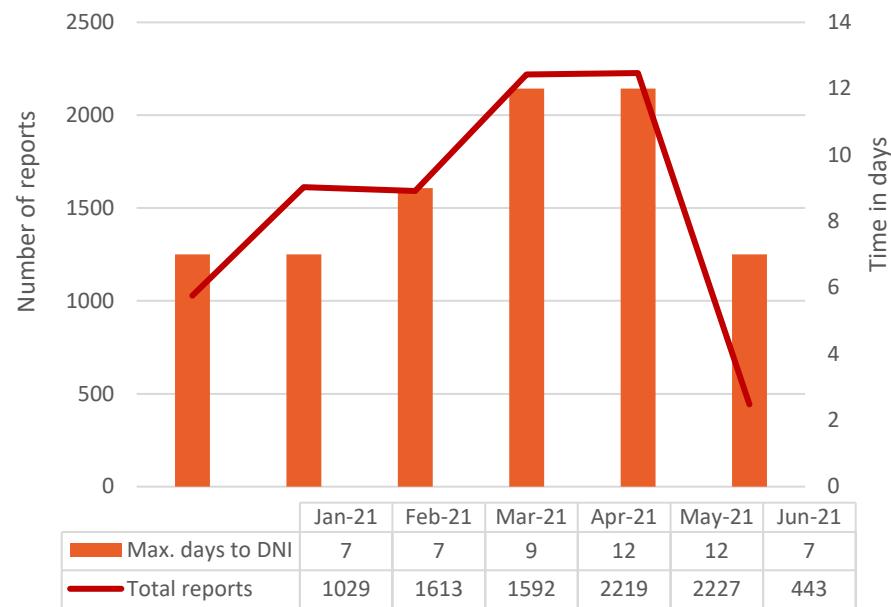


Figure 3: Where suspect ants were found in Quarter 4, 2020–21

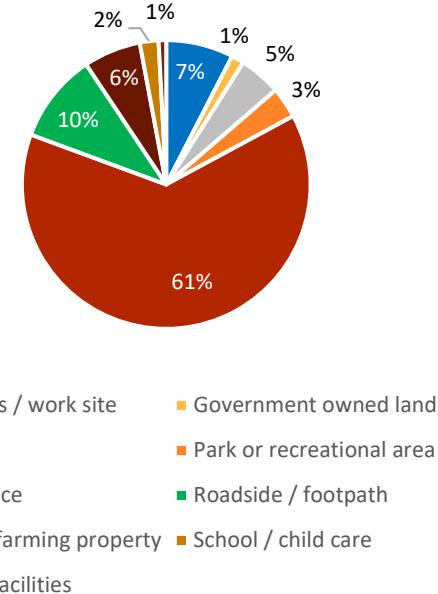


Figure 4: What made people report suspect ants in Quarter 4, 2020–21

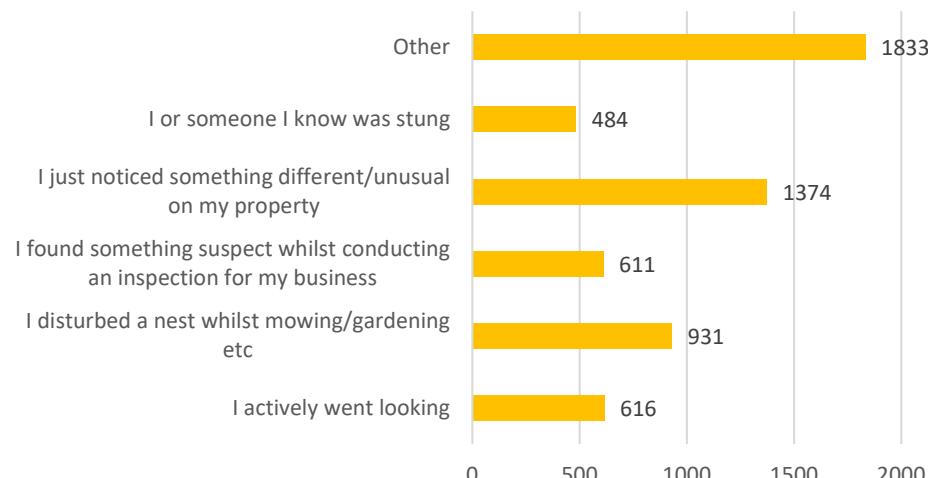
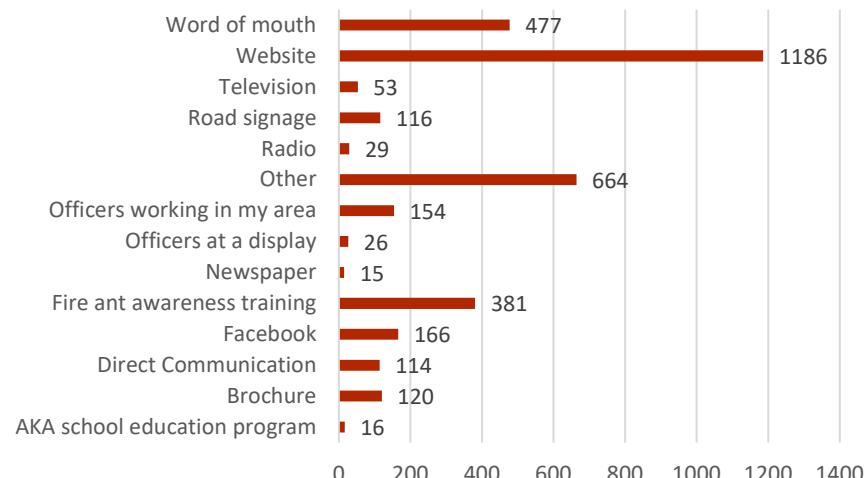


Figure 5: How people reporting suspect ants heard about the program in Quarter 4, 2020–21



Detections of importance

Detections of importance pose a heightened risk to the achievement of the program objectives and overall success and receive urgent attention. They include detections outside the operational boundary, detections up to five kilometres inside the operational boundary in place at the time of detection and detections located within areas that are currently undergoing clearance and freedom activities.

Eradication treatment activities continued during this quarter with the focus on Area 2 and targeted treatment areas in Area 1 and Western Boundary. Due to the high number of detections made in the first quarter (100), surveillance activities continued throughout each quarter. A slightly reduced number of detections of importance were found in the fourth quarter (82) in comparison to that of the first quarter (100), though this number is much higher than those found in the second (23) and third (26) quarters. The program is undertaking a risk assessment of these detections to determine whether further action is required.

Table 9: Fire ant detections of importance Quarter 4, 2020–21

Type*	No.	Location/s
Significant	5	Clarendon, Mount Sylvia, Coulson, Charlwood and Boonah
Outside Boundary	28	Canungra (1), Clarendon (6), Coulson (2), Tamborine Mountain (1), Tarome (17) and Wyaralong (1)
Boundary	22	Allenvale (2), Beaudesert (1), Boyland (1), Clarendon (2), Flinders Lakes (2), Kholo (2), Mundoolun (3), Rifle Range (1), Tabragalba (1), Tamborine (2), Teviotville (3) and Wongawallan (2)
Clearance area	27	Coleyville (6), Crowley Vale (2), Glen Cairn (1), Harrisville (3), Mount Forbes (1), Mount Mort (2), Mount Walker (6), Peak Crossing (1), Rosevale (3) and Teviotville (2)

*Significant = A new detection found outside the program Operational Area boundary. Outside boundary = A detection found outside the program Operational Area boundary that is an extension of a significant detection. Boundary = A new detection found up to 5 km inside the program Operational Area boundary. Clearance area = Former eradication area undergoing surveillance and residual ant search and destroy activities.

Significant/outside boundary detections

- Five significant detections and 28 detections outside the program operational area boundary were found during the fourth quarter in the following local government areas: 25 in the Scenic Rim, seven in the Somerset and one in the Lockyer Valley. While this is a higher number than desired, the program prioritises extended treatment and surveillance actions to ensure the infestation is destroyed.
- Each new significant detection is reported to the program's cost-shared partners and the Queensland Minister for Agricultural Industry Development and Fisheries, with five reports submitted this quarter.
- During this quarter 28 of the 33 detections made were not considered new detections for reporting purposes as they were additional nests found close to the original significant detection property and are part of the response to that significant detection.
- Nests at the sites were immediately destroyed and treatment and surveillance activities between a minimum of 500 m and up to 2 km beyond the infestation took place.
- Investigations were undertaken into the movement of inbound and outbound fire ant carriers onto and from each site, specifically focussing on the last 12 months.
- If materials that can carry fire ants needed to be removed from the site, co-operation was sought with the companies/landowner to implement measures prior to the movement.
- Genetic analysis was conducted to determine if the nests are related to the existing SEQ population and the fire ant colony's social form (monogyne or polygyne). All the detections were from the current infestation and were monogyne.
- Further testing was also undertaken to identify relatedness to nearby colonies and investigations carried out into related fire ant carrier product movements. No direct linkages were found in genetic tracing activities to-date, however further testing will be completed periodically as more samples come in.

Boundary detections

- There were 22 boundary detections (detections made within 5 km of the operational boundary) during the fourth quarter in local government areas of Scenic Rim (10), Logan City (5), Somerset (3), Gold Coast City (2), and Brisbane City (2).
- The program assessed the risk associated with each detection and responded in accordance with program protocols as outlined for significant detections above.
- All nests were promptly destroyed with an insecticide by either applying direct nest injection or broadcast baiting, depending on risk. Scope of treatment ranged from a minimum of 100 m from the nest to 2 km beyond the infestation.
- The number of detections around the boundary presents a significant risk to the program's containment objectives. The program's southern suppression treatment will ensure two rounds of broadscale baiting with an IGR are applied to the areas to the south of the program's operational area, where the majority of the infestation was detected, during the 2021–22 treatment season.

See [Appendix 4](#) for more a map of detection locations and [Appendix 5](#) for further detail on their circumstances and management.

Polygyne detections

Genetic analysis of the social form of fire ants is undertaken to determine treatment activities required. Multi-queen colonies (polygyne) have increased risk of spread from human-assisted movement and strengthen the colony by increasing the genetic diversity within the population compared to single queen colonies (monogynes). As such, one of the KPIs of the program is to maintain ~1% or less polygyne sites within the South East Queensland infestation. This is far less than overseas polygyne proportions, which are often between 40% to 70% or higher.

Table 10: Ant samples analysed in Quarter 4, 2020–21

Quarter	No. ant samples for analysis	Proportion polygyne sites	No. untested [▲]
2020–21 Quarterly average	1 967	0.96%	83 (4%)
1	911	1.25%*	2 (0.22%)*
2	1 622	1.19%*	12 (0.91%)*
3	2929 [†]	1.1%*	794 (32.91%)*
4	3418 [†]	0%	3172 (92.8%)

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

During the quarter there were no sites with polygyne infestations and the few samples that were collected have been analysed.

A considerable backlog in genetic tests is still present for both the current and previous quarter. This is due to an increase in the number of samples in 2020 as well as difficulty in purchasing genetic laboratory consumables because of COVID-19 demand. While this has been partially rectified in our genetics laboratory, the backlog has now shifted to the earlier stage where samples are decontaminated prior to genetic analysis at the Berrinba laboratory. Methods to increase throughput are currently being investigated.

Human-assisted spread mitigation

Human-assisted spread poses a significant risk to containment where fire ants are transported via fire ant carriers like soil, mulch, turf, hay and potted plants. To manage these risks the program promotes voluntary compliance through stakeholder education (see [Mobilisation](#) above) and targets industries most likely to transfer fire ants through compliance audits. Changes to fire ant biosecurity zones in May 2020 introduced new suburbs within the zones and meant several businesses and

Individuals were subject to the Biosecurity Regulation 2016 for the first time. Given both their general limited knowledge and previous contact with the program, if found non-compliant this group has been made aware of the requirements and generally given two weeks to achieve compliance.

Compliance audits

The *Compliance Scheduled Activities Plan 2020–21* (compliance plan) was developed to ensure the highest risk industries undergo compliance assessment over the fiscal year with the results of these assessments creating reliable inferences of overall industry compliance levels each year. These businesses fall into a number of broad industry types. These include landscaping services, hay producers, poultry farms, earthmovers, waste facilities, civil construction, builders and developers and quarries. Based on available information within the program's FAMS database and other online business advertising platforms such as Yellow Online, the total number of operators within these industries totals approximately 7000.

The industries that were selected for this quarter were major residential and industrial development sites. These were prioritised on factors such as proximity to high density infestation and biosecurity zone boundaries which impact the risk of human-assisted spread. Compliance activities were diverted from the scheduled audit plan to assist Plant Biosecurity and Product Integrity in auditing ICA-40 accredited nurseries and conducting audits on hay producers due to the infestation levels in the Clarendon area.

During this quarter 389 audits were conducted, predominantly within the building and civil construction industry.

Table 11: High risk industry audits—numbers compliant versus non-compliant

High risk industry	No. audits	No. non-compliant	% non-compliant	Outcome
Pool builders	3	1	33%	Advice notice issued in relation to a breach of the Soil Movement Guideline (SMG)
Hay	38	11	29%	7 Advice Notices issued so immediate action was taken. Some of these were complied with however others required additional enforcement and were issued a Biosecurity Order. In total, 8 Biosecurity Orders were issued to the hay industry
Earthmoving	115	8	7%	9 Advice Notices were issued due to a breach of the SMG. 3 Penalty Infringement Notices were issued to earthmoving businesses for moving soil out of zone
Civil construction and builders	134	3	2%	3 Advice Notices were issued due to a breach of the SMG
Nurseries	56	1	2%	1 Advice Notices were issued due to a failure to meet the storage requirements. The nursery amended their storage and are now compliant
Plumbing	14	0	0%	All audits compliant
Landscaping	12	0	0%	All audits compliant
Concreting	7	0	0%	All audits compliant
Councils	5	0	0%	All audits compliant
Quarry	2	0	0%	All audits compliant
Waste facilities	2	0	0%	All audits compliant
Tree lopping and mulching	1	0	0%	All audits compliant
Turf	0	0	0%	All audits compliant
Total	389	24	6%	23 Advisory Notices. 8 Biosecurity Orders. 3 Penalty Infringement Notices. This number is higher than the identified non-compliance number as in some instances an Advisory Notice was issued and then followed up with a Biosecurity Order.

Continuing to extensively engage and communicate with industry in addition to audits will be key to improving compliance levels. See [Appendix 3](#) for the locations of compliance activities.

5. Eradication: Activities to effectively eradicate fire ants from South East Queensland.

The planned eradication season began in September 2020 marking an important milestone for the program by moving from the Lockyer Valley, Scenic Rim, and parts of Ipswich (Area 1 and the Western Boundary) east to new parts of greater Ipswich and western Logan (Area 2). Treatment concluded in June 2021. Eradication treatment Area 1 and the Western Boundary moved to Phase 3: *Clearance*, that involves targeted surveillance and targeted treatment over several years rather than broad scale treatment across the whole area.

Eradication treatment in Area 2 used an alternative model to that used in Area 1 and Western Boundary to initiate a potential expedited strategy to eradicate fire ants. Area 2 eradication treatment involved four rounds of intensive treatment in one year instead of two to three rounds of treatment per year for two to three years as applied to Area 1 and Western Boundary.

In addition, the area was divided into three distinct treatment areas with different treatment regimens used in each. This was to identify the most effective way to deliver eradication more quickly. One of the three areas received four rounds of insect growth regulator (IGR) bait, which is intended to make the queen infertile and the nest to die out due to starvation. A second area received IGR bait for three rounds initially (targeting the queen), with a fast-acting bait used to target worker ants in the fourth round to expedite worker death and nest starvation. A third area received IGR bait initially, to make the queen sterile, followed by a fast-acting bait in the second round to kill the worker ants, and then a further two rounds of IGR to maintain the queen's sterility if she has survived. Monitoring of the three eradication treatment regimens is undertaken monthly with a review of the efficacy of the various treatments undertaken at the end of the treatment season in June 2021.

For the current eradication treatment area (Area 2), monitoring sites have shown a decline in fire ant colonies remaining, providing evidence that transitioning to Phase 3 in Area 2 may be possible following this year's treatment season. At the end of the current treatment season (during the fourth quarter), Area 2 fire ant monitoring will be fully assessed.

Area 2 ground treatment concluded in early June when temperatures were no longer conducive for fire ant foraging while aerial treatment was completed in May.

Table 12: Planned eradication treatment progress at 30 June 2021

Round 1		Number of hectares			Round 2		Number of hectares		
Location	Planned year total	Planned YTD total	YTD actual	%	Location	Planned year total	Planned YTD total	YTD actual	%
Area 2	46 423	46 423	45 227	97.42	Area 2	46 423	46 423	44 681	96.73
Total	46 423	46 423	45 227	97.42	Total	46 423	46 423	44 681	96.73
Round 3					Round 4	Number of hectares			
Location	Planned year total	Planned YTD total	YTD Actual	%	Location	Planned year Total	Planned YTD total	YTD actual	%
Area 2	46 423	46 423	45 314	97.85	Area 2	46 423	46 423	45 283	97.60
Total	46 423	46 423	45 314	97.85	Total	46 423	46 423	45 283	97.60

Table includes daily and weekly adjustments. YTD = year to date.

Table 13: Challenges and solutions to eradication treatment in Quarter 4, 2020–21

Challenges	Solutions
Due to poor weather conditions, there were 18 scheduled aerial treatment days lost during this quarter.	Aerial treatment was performed on weekends to progress the scheduled planned treatment.

Further information about eradication treatment is outlined in the [key insights](#) part of the report.

Monitoring the efficacy of broadscale bait treatments in Area 2

As the program prepared to move into a new eradication area (Area 2) in the 2020–21 treatment season, a new broadscale eradication treatment methodology was developed for implementation and evaluation under an adaptive management approach. Under this approach, four bait rounds would be applied in a single treatment season (September 2020–June 2021). In addition, a fast-acting bait would be included in the treatment sequences in parts of Area 2 to see if this could further accelerate eradication.

Before applying these broadscale eradication treatments in Area 2, extensive surveillance was undertaken to locate live fire ant nests so their responses to baiting could be monitored. The number of fire ant nests detected and included in a monitoring strategy to measure the efficacy of the three eradication treatment strategies, for application in Area 2 over the 2020–21 treatment season were:

- 322 nests (northern section: treatment strategy = 4 x IGR treatment rounds)
- 149 nests (central section: treatment strategy = 3 x IGR treatment rounds + late Advion treatment in round 4)
- 64 nests (southern section: treatment strategy = 3 x IGR treatment rounds + early Advion treatment in round 2).

In conjunction with this monitoring of treatment efficacy, pitfall trapping at six-week intervals occurred to monitor the potential impacts of broadscale baiting on non-target ant species.

All monitoring nests have been visited on a four-week/monthly schedule since September 2020 and assessed for the level of fire ant activity. By the end of June 2021, the only section where some ant activity was observed was in the northern section (4 x IGR), with live fire ants observed at 6% of the 322 monitoring nests, though these nests may succumb due to the delayed effects of IGR treatments. None of these nests were highly active.

Continued monitoring over the remainder of the 2021 winter will be necessary to assess whether the strategies of applying four bait treatment rounds in a single season (with some including a fast-acting bait i.e., Advion) have achieved the objective of eradication in a single treatment season or if further treatment rounds will be required. By the end of June, monitoring results are indicating a possibility that some additional treatment rounds may be required in the 4 x IGR section, which also had a much higher starting density of fire ant nests before the 2020–21 treatment season commenced.

6. Clearance: Activities to ensure defined areas remain free from fire ants after eradication is complete.

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

Clearance surveillance in Area 1 and Western Boundary will be performed predominately through remote sensing surveillance (RSS). Therefore, all clearance surveillance and treatment activities will be re-calibrated to incorporate RSS, which is wider ranging and less agile. The constraints of RSS planning (size, shape and configuration) as well as the state of Area 1 and Western Boundary being an additional year removed from the Phase 2 treatment have required a complete re-thinking and simplification of the process for selecting areas for surveillance. Furthermore, the Program’s clearance treatment strategy (i.e., “high risk” areas) has further constrained/ directed candidate surveillance areas. Incorporating RSS is an ongoing and agile process.

Clearance area surveillance and protection

- There were twenty-seven (27) detections in Clearance Area One this quarter: Coleyville (6), Crowley Vale (2), Glen Cairn (1), Harrisville (3), Mount Forbes (1), Mount Mort (2), Mount Walker (6), Peak Crossing (1), Rosevale (3) and Teviotville (2).
- Given the high number of detections found, particularly in the Scenic Rim area, the program has amended the workplan for the 2021–22 treatment season to refocus eradication efforts on the densest infestation in Area One and the Western Boundary. Three rounds of broadscale baiting with an IGR will be applied.
- Remote sensing surveillance (RSS) will also be undertaken in Clearance Area One to ensure the residual infestation is delimited.
- Surveillance in Clearance Area Two will commence in the 2021–22 season until such time as the program is satisfied no residual infestation remains and areas can progress to the next phase of the freedom framework (Phase 4—freedom). This phase involves a cost-optimised volume of surveillance.

Table 14: Challenges and solutions to clearance activities in Quarter 4, 2020–21

Challenges	Solutions
Incorporating RSS into every aspect proof of freedom surveillance and treatment planning and strategy.	Lots of communications via workshopping and meetings

Clearance and proof of freedom strategy

The program briefed the Scientific Advisory Group (SAG) and Steering Committee on updates and changes to the Clearance and Proof of Freedom Strategy, which includes the additional “phase” and the new detailed explanation of the itemised costs of progressing clearance and proof of freedom.

Since remote sensing is now “live,” the clearance and Proof of Freedom Strategy will have to be amended to reflect the required coverage, estimated costs, and efficacy, of remote sensing as it relates to clearance. This exercise will have to be done after the current surveillance season, once there is a better understanding of the performance of RSS. The program has been working on creating potential rules and procedures for transforming RSS into statistical evidence of freedom.

The second year of clearance surveillance is ongoing in Area 1 and Western Boundary, and the first year is beginning in Area 2.

The Structured Expert Elicitation program (STEEP) held the second of three planned meetings to review analysis and discuss preliminary results. The final meeting will be held late in the first quarter of 2021–22, where the most recent surveillance information will be reviewed, and the team will either finalize results or recommend a secondary exercise. It is highly likely that new information from remote sensing surveillance and new information from DOIs will require a secondary STEEP exercise.

7. Research and innovation: Science and innovations to improve treatment, surveillance and diagnostic techniques.

Polygyne research and eradication

Based on the results from a pilot trial conducted in 2020, three treatment regimens were selected for further evaluation and field application against known polygyne infestations in Area 2, with the goal of attempting to locally eradicate these within the 2020-21 treatment season. These three treatments were:

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

Commencing January 2021, all known polygyne sites in Area 2 (17 sites, approx. 650 ha total) started to receive targeted bait treatments with one of the above regimes (This was in addition to any broadscale bait treatment rounds already scheduled as part of the eradication treatments in Area 2). The plan was to apply these additional bait treatments approximately every 4–8 weeks up to a total of 3–4 times before the end of the treatment season in June 2021. Of these 17 sites, three already showed no ant activity by January 2020 and, to date, it appears that the standard baiting regime may have been effective at these three sites. Of the remaining 14 sites where additional polygyne bait treatments were applied, all received at least two additional rounds of bait treatment, and all but four received the full complement of 3–4 additional bait rounds. For those sites treated by ground-based methods (foot/UTV), over half of these (93 ha total area) received the maximum of four additional treatment rounds. One large site (550 ha) requiring aerial treatment could only receive additional polygyne treatments twice due to scheduling challenges related to completion of the main baiting rounds over Area 2.

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

Remote sensing surveillance project

The Remote Sensing Surveillance (RSS) project was largely occupied with contract negotiations with the imagery provider Outline Global. The project commencement was delayed from the proposed start date of the 1 May 2021 until the 1 July 2021, due to these negotiations.

Other work during this period included the preparation of the Aerial Remote Sensing Surveillance Specific Task Analysis and Risk Assessment (STARA) specifying the safety precautions required to be undertaken by the project in relation to the aerial imagery capture. Preparations for the commencement of the project also occurred with the selection of initial flight regions by the RSS Tasking Sub-Committee and development of standard operating procedures for field validation processes.

Other research and innovation

A proof of concept for drones is currently underway to investigate the validity of their use for bait application in inaccessible areas and for aerial buffering jobs. The initial stage is to develop/ find a hopper design and a drone that can spread the very light fire ant corn grit bait. The program is working with industry experts and also other DAF units to determine drone flight paths, restricted areas as well as explore drone designs.

The program discussed the development of eDNA analytical tools for use in monitoring and surveillance activities with scientists from James Cook University, the University of Canberra and members of the Department of Agriculture, Water and the Environment Biosecurity Innovations Team. An analytical method is being developed for detecting the presence of target specific DNA from several invasive ant species, including fire ants, in soil and/or water samples taken from previously infested habitat, habitat vulnerable to invasion or water bodies adjacent to potentially infested farmland. The program will assist in proof-of-concept research for the real-world application of a previously developed fire ant specific eDNA assay. If successful, this technology may be a beneficial addition to existing surveillance methods and tools.

8. Governance and accountability: Includes business improvement, significant meetings related to governance, and risk management.

Risk management

The program has three high risks detailed in Table 15.

Table 15: High risks to the program in Quarter 4 2020–21

Risk type	Risk description, controls and treatment
Strategic	Risk description: Risk to eradication and containment: Extreme wet weather events (e.g., flood, heavy rainfall) assist fire ant colonies to disperse over a greater geographical area.
	Risk controls: (1) Contingency planning will be undertaken to ensure appropriate targeted surveillance/treatment is undertaken following a significant climatic event; (2) Pre-planning including infestation assessment, genetic tracing, spatial analysis of spread through flight and flood mapping. (3) Planning forecasting probable infestation spread.
	Treatment: Reprioritisation of planned suppression treatment to limit the risk of spread along water courses. Flooding contingency fund. Flood modelling and responsive planning.
Strategic	Risk description: Risk to eradication: The timing of national cost sharing funding does not align to the treatment strategy.
	Risk controls: Establishment of collaborative funding agreements with states and territories and National Partnership Agreement with Commonwealth. Review of budget occurs regularly.
	Treatment: Approach Queensland and Commonwealth Treasury to secure drawdown of additional funds required in the early years. Ensure funding partners have a full understanding of the success, activities, and concerns of the program. Regular reporting arrangements in place.
Operational	Risk description: Risk to capability: Information systems are ineffective at supporting increased scope of national program and demand for timely and accurate performance data; this arises from poor functionality or data integrity due to data entry, programming, configuration errors, viruses or incorrect business logic.
	Risk controls: 1. Resources dedicated to developing the program's existing information systems and how they interface to improve efficiency and accuracy of data entry and reporting. 2. Server performance monitoring. 3. Ability to upgrade if required.
	Treatment: Information systems to undergo continual improvement. Review of existing systems technology and current business processes to ensure best fit solutions are implemented. Continually review performance and recommend upgrades accordingly.
Operational	Risk description: Risk to capability: If self-management does not have the desired take up by Industry the program should focus on avoiding possible increasing costs of suppression, at the expense of eradication.
	Risk controls: The self-management program is divided into several sub-programs to better meet the needs of each target group; improvements to baiting options available to landowners and industry.
	Treatment: Ongoing refinement and adjustment will be undertaken to meet the needs to consumers and industry sectors. Coordination with high-density suppression treatment will also be undertaken to ensure the self-management projects are effective as possible.

Risk type	Risk description, controls and treatment
	The project team has been replaced by a dedicated Principal Engagement Officer, now employed by the program; this officer will have additional support to adequately plan and deliver the self-management strategy and program; market research has been completed to better understand community perceptions and attitudes to self-management; CSE structure now reflects a community focussed stream and an industry-focussed team to better service the needs of stakeholders; the self - management team will work closely with operations to ensure effective delivery.

COVID-19

There have been no reported cases of program staff contracting COVID-19. Changes in routine to protect the health and safety of staff and the community include:

- Up to 50% attendance at Berrinba with numbers at other program sites adjusted depending on the ability to maintain social distancing.
- When staff use one vehicle one person sits in the front seat and the other in the back seat on opposite sides of the car with windows down and air conditioning off.
- If an operational team member tests positive to COVID-19 the entire team will be directed to self-isolate at home.
- Contact with customers is made by phone, where possible, to avoid human contact.
- Staff have been provided with hygiene products including hand sanitiser and alternative solutions where necessary.
- Additional weekday cleaning in all commons area including frequent touch points.

Meetings of importance

The Steering Committee held an extraordinary meeting on 7 April 2021 via teleconference to discuss revised options to complete operations in 2020/21 within the available funding. The Steering Committee also reviewed the Terms of Reference and agreed on panel members for the 2021 Strategic Review of the Program.

The Steering Committee held its quarterly meeting on 26 May 2021 via teleconference. Topics included program funding and the outcome of the recent AGSOC meeting; the development of a financial dashboard and capital acquisitions; a progress update on treatment and surveillance activities in Area 2, Area 1 and the Western Boundary; detections of importance; 2021–22 Work Plan options; self-management pilots and trials; proof of freedom and clearance and the development of a risk-based economic model; and progress on the Strategic Review. The Steering Committee were also provided with a Consultation Report following the Commonwealth Scientific and Industrial Research Organisation (CSIRO) *Review of Red Imported Fire Ants Scientific Principles and Movement Controls*.

The Scientific Advisory Group (SAG) met on 30 April 2021 and 7 May 2021 via teleconference. Items discussed included Area 2 monitoring methodology of bait treatment efficacy; the CSIRO Report and recommendations relating to scientific principles, the shift to a monogyne population and data gaps in science; scientific rationale for how surveillance and treatment activities are conducted; progress of clearance and proof of freedom activities; strategy for southern containment treatment options; update on the University of Queensland Bioclay project, remote sensing update.

9. People and culture:

Includes staff levels, workplace health and safety, and employee development, engagement and culture.

Table 16: Staff numbers in 2020–21

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

Workplace health and safety

The program received 46 reports related to workplace health and safety during this quarter which is a decrease of 46 incidents compared to the incidents reported in Quarter 3. The decrease in entry numbers is because of only property damage reports that had an ability to impact the Work Health and Safety (WHS) of staff being recorded in TABS. This recalibration of reporting criteria will assist in providing accurate WHS Data. Workplace health and safety representatives maintain a focus across the program to heighten awareness and identify workable solutions for all identified risks.

Table 17: Injuries in 2020–21

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

Table 18: Workplace health and safety incidents in 2020–21

Category	Q1	Q2	Q3	Apr	May	Jun	Q4
Hazards	3	1	1	0	0	1	1
Near miss	3	6	9	0	3	0	3
Property damage	24	51	59	16	3	2	21
Totals	30	58	69	16	6	3	25

Volunteers

During National Volunteer Week in May a volunteer morning tea was held for all volunteers, with 7 active and 1 retiring volunteer in attendance on the day. We awarded all volunteers with a certificate of appreciation and the retiring volunteers received an additional certificate commemorating their years of service. Due to a shift in engagement priorities and with COVID-19 still in effect in Queensland a decision was made to limit the number of events the program will be attending to focus on targeted and high value activities relevant to specific campaigns. Regular communication is sent out to our volunteers to keep them up to date with the program.

10. Finance

The 2020–21 initial budget build for the program, including treatment requirements, was \$5.5 million above the program fiscal limit. The program is taking an agile approach to budget monitoring in 2020–21 with a view to prioritising treatment areas and utilisation of more efficient methods of delivering treatment and surveillance in order to remain within the fiscal limit. When budgeted for the financial year, the total number of hectares to be treated for the year was distributed evenly across the months during the treatment season. However, actual treatment hectares planned for a month is adjusted weekly/monthly responsive to work scheduling, weather and identified priorities. The total planned treatment hectares for the year remains unchanged.

Expenditure to budget

The program's national cost share funding incurred a \$821K overspend as 30 June 2021. Material variances include an overspend in Operations (\$2.4M) and Business Support (\$58K). This is offset against underspends in other program areas as follows Community and Stakeholder Engagement of (\$659K), Science Services and Eradication Assessment (\$331K), Planning and Quality Assurance (\$184K), Systems and Technology Innovation (\$157K), Remote Sensing of (\$152K) and Strategic Policy and Performance (\$127K). The Operations' overspend includes \$1.4M in contractors, \$0.98M in aircraft hire for treatment and \$0.57M in vehicle hire. The operations area of the program underspent \$0.8M in bait. Additional contractors were mobilised during the treatment season to meet operational requirements which also required additional vehicles to enable the program to meet social distancing requirements for COVID. The overspend in aircraft hire is mainly due to toxicant bait usage which required helicopters to do more ferrying to load the toxicant bait compared with IGR bait. Underspend in bait reflects area treated.

The program's Steering Committee approved the program to overspend \$1.4M in 2020–21 to be recovered from the 2021–22 budget in Out of Session Meeting Paper distributed on 18 June 2021. Queensland underwrote the final program overspend amount of \$821K to be recovered back from the programs 2021–22 budget. As a result of Queensland underwriting the program incurred a balanced operating result at 30 June 2021.

Table 19: Expenditure to budget as of 30 June 2021

Program area	Requested budget*	Current budget	YTD budget	YTD actual	Variance	Note
Program Logistics and Business Support	3 464 063	3 464 063	3 464 063	3 521 986	-57 923	1
Remote Sensing Surveillance (R&D)	1 593 003	1 592 828	1 592 828	1 440 295	152 534	2
Systems and Technology Innovation	2 128 193	2 128 193	2 128 193	1 971 515	156 678	3
Community and Stakeholder Engagement	2 622 417	2 621 133	2 621 133	1 962 515	658 618	4
Science Services and Eradication Assessment	3 035 072	3 035 246	3 035 246	2 703 308	331 938	5
Planning and Quality Assurance	2 753 752	2 958 747	2 958 747	2 774 945	183 801	6
Operations	39 165 284	40 028 659	40 028 659	42 400 884	-2 372 225	7
Direktorate	860 036	860 036	860 036	876 677	-16 641	8
Self-management	508 562	508 562	508 562	493 929	14 633	9
Strategic Policy and Performance	2 363 619	1 296 533	1 296 533	1 169 928	126 605	10
Total	8 494 001	58 494 000	58 494 000	59 315 984	-821 983	

* 2020–21 Budget as approved by the Programs National Steering Committee at its August 2020 Meeting.

1. The unfavourable variance \$58K is largely due to an efficiency applied in beginning of the year to meet budget limitation of the program. As a result overspends appear in cleaning (Berrinba and Laidley \$80K), facilities management and fit out cost (\$52K), Waste disposal fee (\$36K) and computer consumables (\$16K). Offset by underspends Employee Related expense due to vacant positions (\$86K), Electricity (\$25K) reflecting reduced usage and Property repairs and maintenance (\$78K) as some expenses were coded as facilities management cost.
2. The favourable variance of \$153K includes unused \$105K Contingency budget, unused budget on imagery storage \$70K and savings in Contractors Operational \$19K (\$105K underspend in Contractors Operational which is offset by \$86K Business Unit Expense revenue due to BQ Field Staff being utilised in lieu of hiring contractors for surveillance). Offset by overspends of \$35K extensions for a Senior Technical Officer Position an aerial camera contract amendment \$6K, Telephone and Fax - Office \$7K and computer consumables \$5K.
3. The \$157K favourable variance consists of underspend in FAMS Mobility Project \$160K, deferred amortisation on FAMS \$25K and reduced Information Technology (IT) Application Service Charges \$12K. This offset by overspend in IT Discretionary Charges \$86K reflecting system improvement works and an underspend in employee related expense \$30K reflecting vacancies.
4. The favourable variance of \$658K is due to unused campaign cost for biosecurity zone, self-management and lifestyle campaigns amounting to \$121K, \$68K and \$401K respectively, unspent bait expense for self-management \$130K, employee related expense \$110K due to vacant positions. Further underspends occur as a result of unused budgets for Market Research (\$70K), Postage (\$13K) and Photocopy cost (\$14K). Offset by an overspend in Contractor expense (\$263K) reflecting the engagement method for labour and a minor overspend in treatment and significant detection campaign expenses of \$20K.
5. The favourable variance \$332K mainly due to Salary recovery of \$84K for field staff deployed for the Remote Sensing trials, an underspend associated with decreased contractor engagements totalling (\$79K), an underspend in salaries (\$43K) largely due to extension of Senior Technical Officer in the remote sensing project, savings under the SAG allocation budget largely due to reduced travel as part of COVID impacts (\$32K) and timing of milestone associated with the Bioclay project (\$10K). The favourable variance is offset by overspends in laboratory consumables and services (\$42K), Motor Vehicle related expense (\$17K) and IT Standard Workplace expenses (\$15K).
6. The favourable variance \$184K relates to savings from unfilled positions (\$148K), an underspend in software subscription costs for ESRI 2020-21 and Nearmaps (\$50K) which came in less than anticipated, Photocopy cost (\$12K) and computer replacement (\$9K). This underspend is partially offset by an overspend in contractors (\$34K) used to fill salary funded positions.
7. The unfavourable variance of \$2.4M largely relates to a \$1.4M overspend in contractors and aircraft hire (\$976K) which occurred as a result of toxicant bait needing more ferrying to load the bait compared with IGR bait. Further overspends occur in vehicle hire (\$565K) and overtime worked during the treatment season (\$108K), other allowances (\$48K), PPE Purchase of (\$32K) and bait write off (\$30K). The overspend is partially offset by an underspend in Baiting (\$807K) reflecting actual area treated.
8. The variance relates largely to the assumption that all staff will take four weeks recreation leave during the financial year, all positions were filled continuously resulting in a minor overspend.
9. The favourable variance is mainly a result of an underspend of \$34K in contractor cost for a senior engagement officer. The underspend was partially offset by a overspend Employee expenses \$11K, small underspend in IT and telecommunication cost.
10. The favourable variance to budget is mainly a result of an underspend in Employee Related expenses (\$124K) due to a funded AO5 (Policy Officer) position with no actual cost for Jul to Oct 20 and a vacant funded AO7 (Principal Policy Offer) position due to an officer accepting higher duties elsewhere. Further underspends included timing of expenses for the independent review (\$40K) and unused allowances for travel and accommodation cost (\$24K) for the steering committee and risk management committee chairs. The underspend is partially offset by an overspend in Contractors (\$85K).

Significant procurement

- Standing offer arrangement with manufacture, supply and delivery of chemical bait extension
- Quantitative fire ant stakeholder research variation (revised contract value \$111 986.60)
- Strategic review panel (3 new contracts, cumulative value \$145 750)
- Increase estimate for Aerial Services 2021 (revised contract value \$34 245 172.20)
- Fire ant website design and development (new contract \$48 127.75)
- Office based contingent workforce 2021–22 (contract extension to 30 November 2021)
- Field based contingent workforce 2021–22 (contract extension to 30 November 2021).

Note: all amounts include GST.

Procurement planning

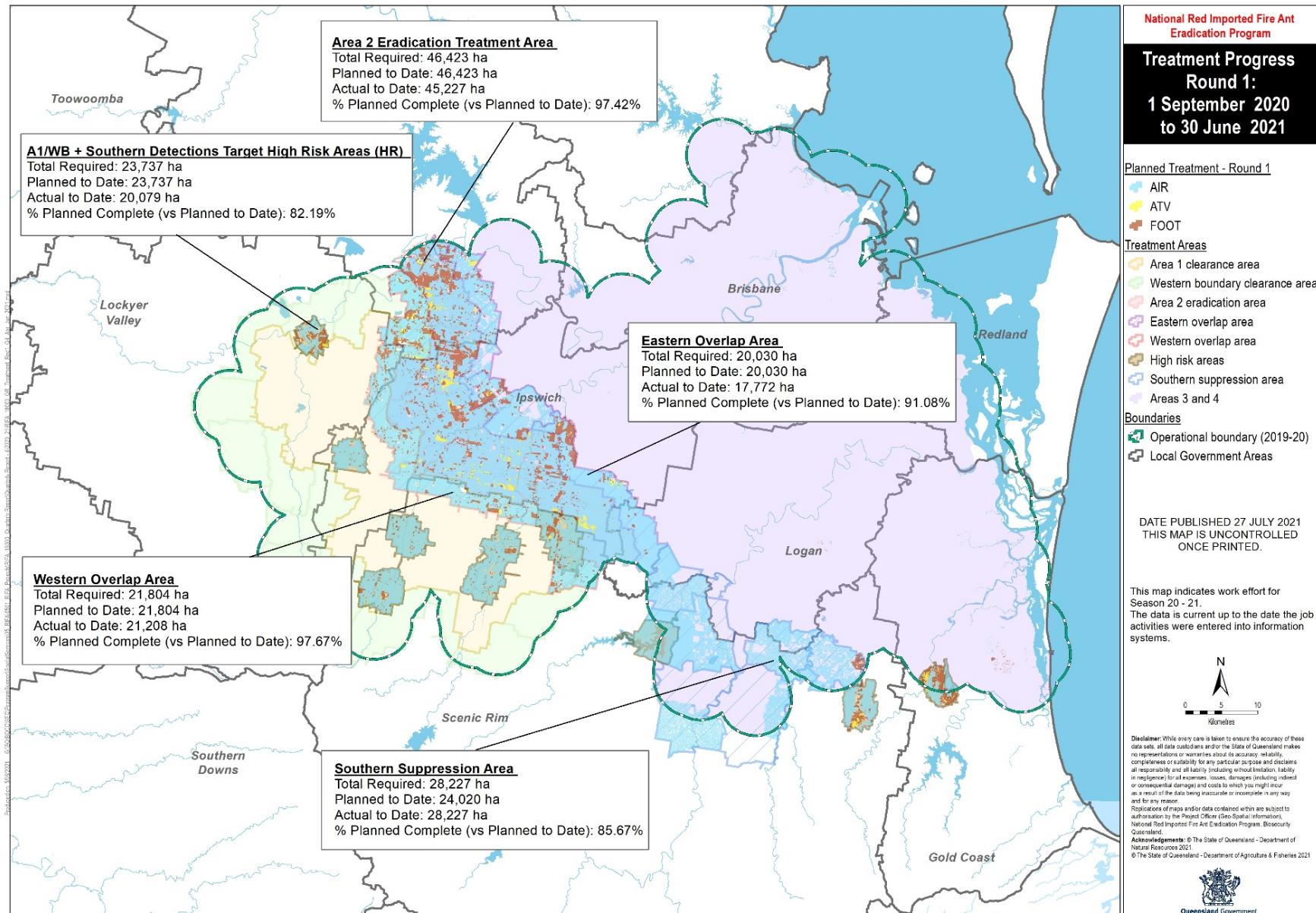
Planning has started on the following procurement activities:

- Chemical bait requirements for 2021–22 (~\$7 million)
- Advertising campaign “always on” (~\$150 000)
- Consultancy—economic review (base case and peer review) (~\$80 000)
- Consultancy—cost benefit analysis (~\$400 000)
- Aerial services (contract expires 22 November 2021, final 12-month contract extension option available (~\$10 million)
- Self-treatment packaging and bait supply requirements 2021–22 (~\$350 000)

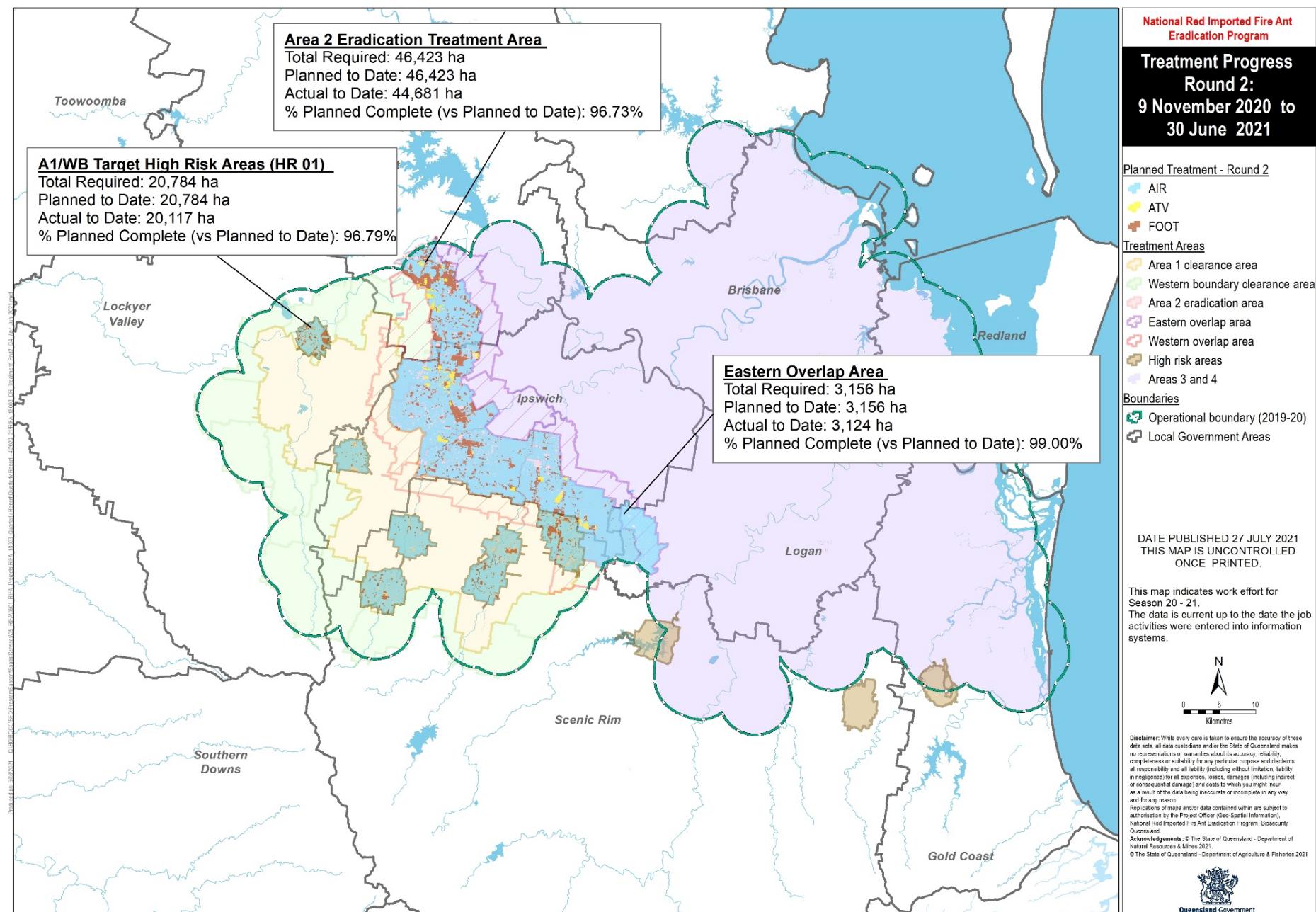
Note: all amounts include GST.

11. Appendices

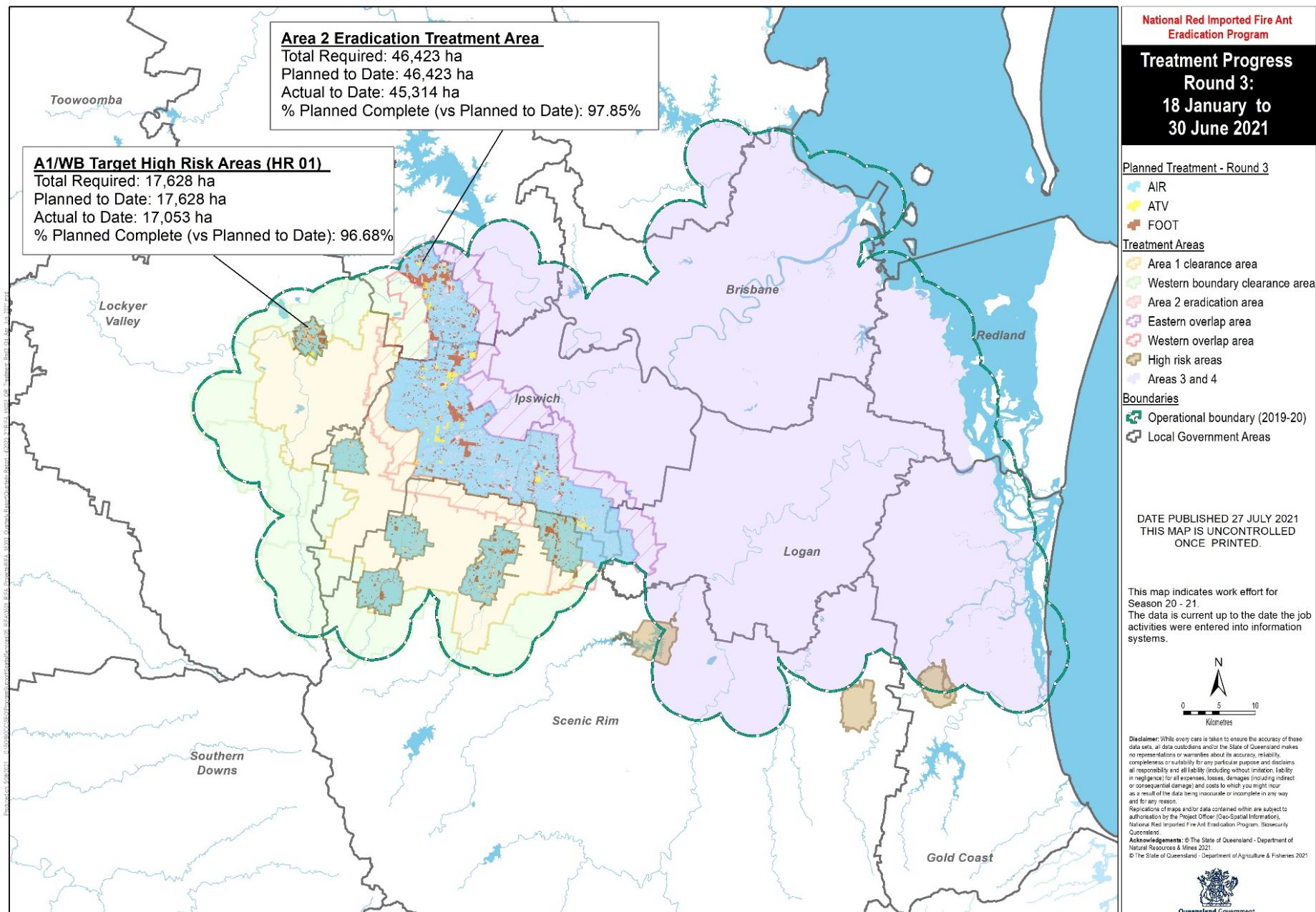
Appendix 1a—Planned treatment progress as of 30 June 2021 (Round 1)



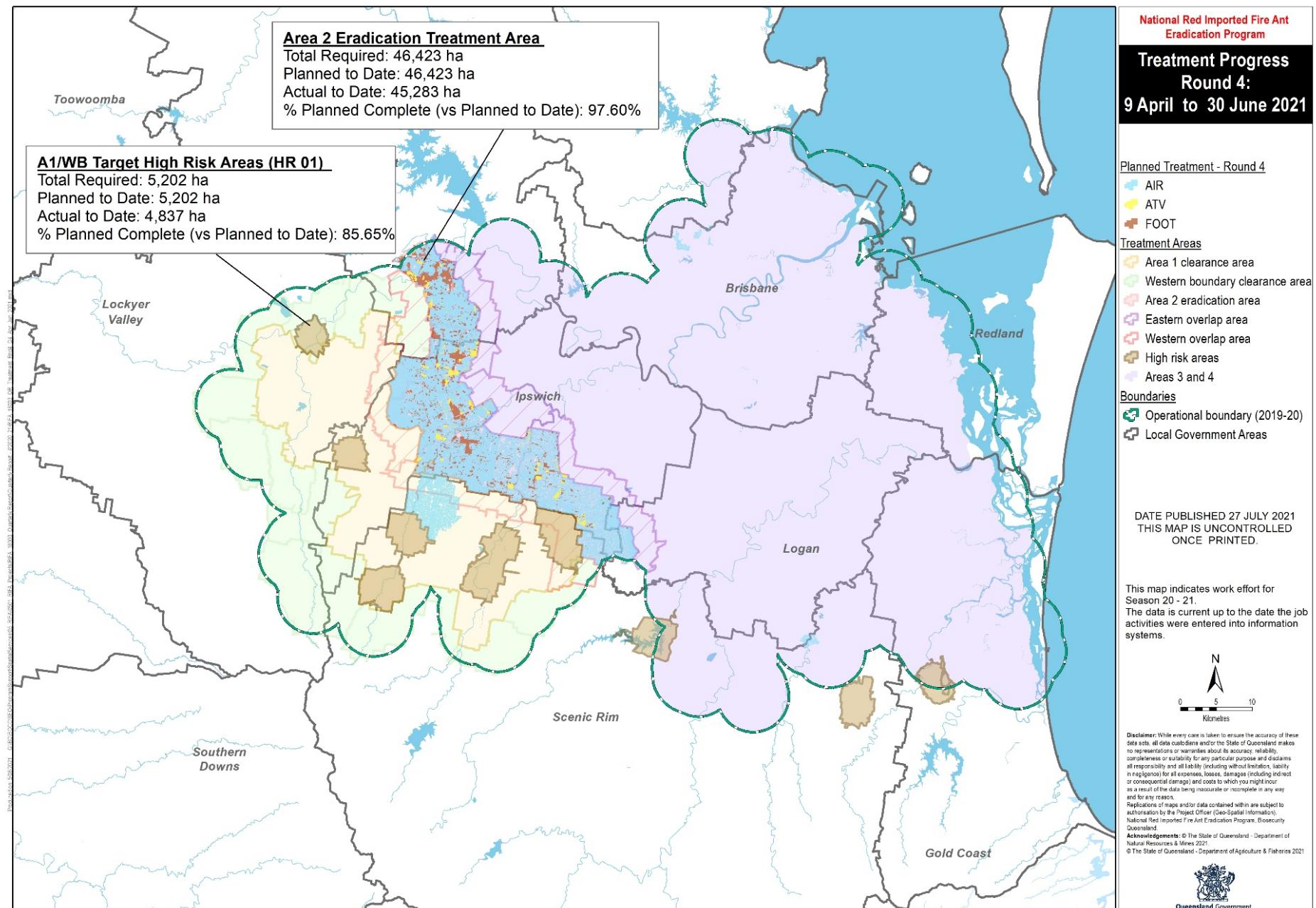
Appendix 1b—Planned treatment progress as of 30 June 2021 (Round 2)



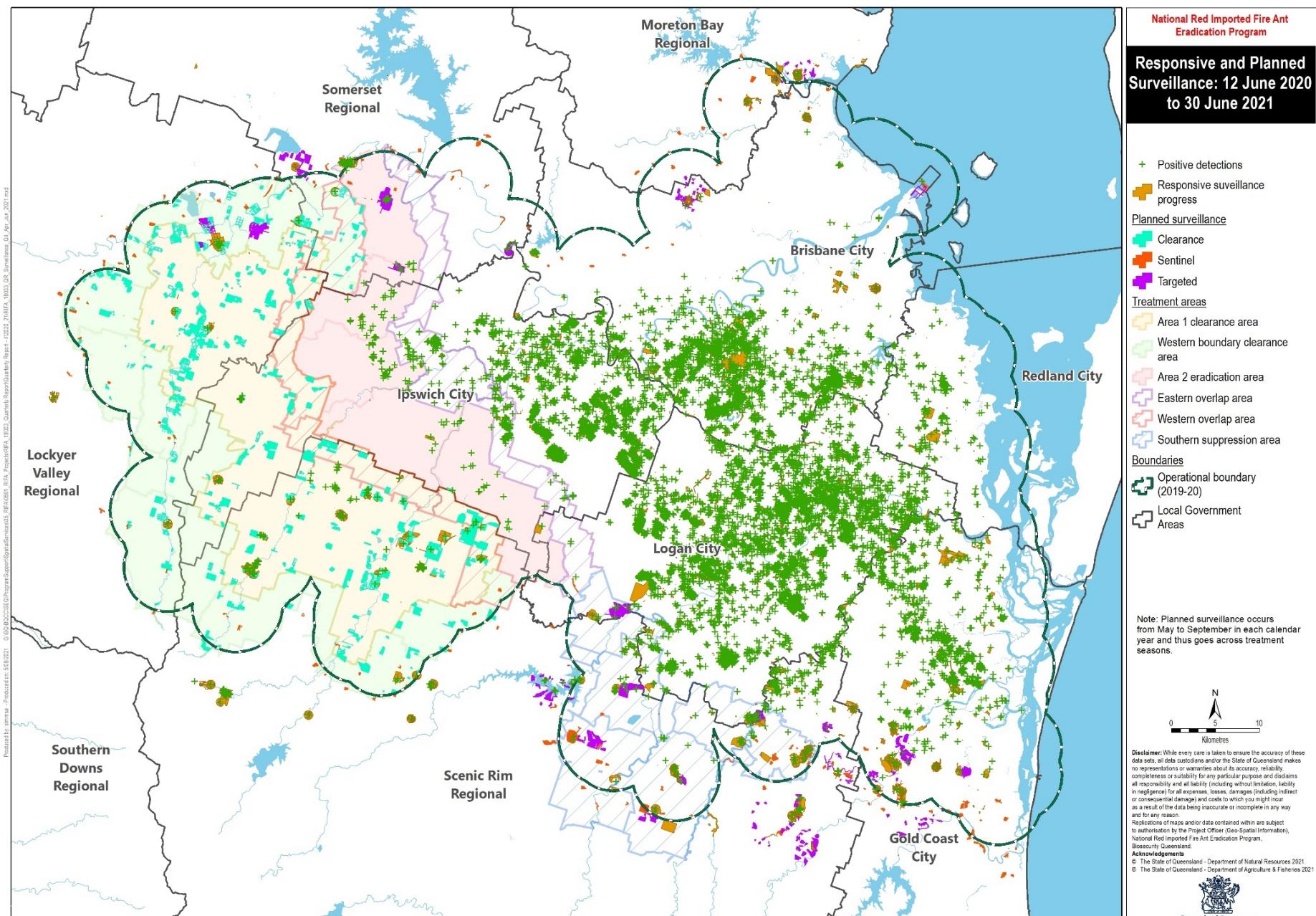
Appendix 1c—Planned treatment progress as of 30 June 2021 (Round 3)



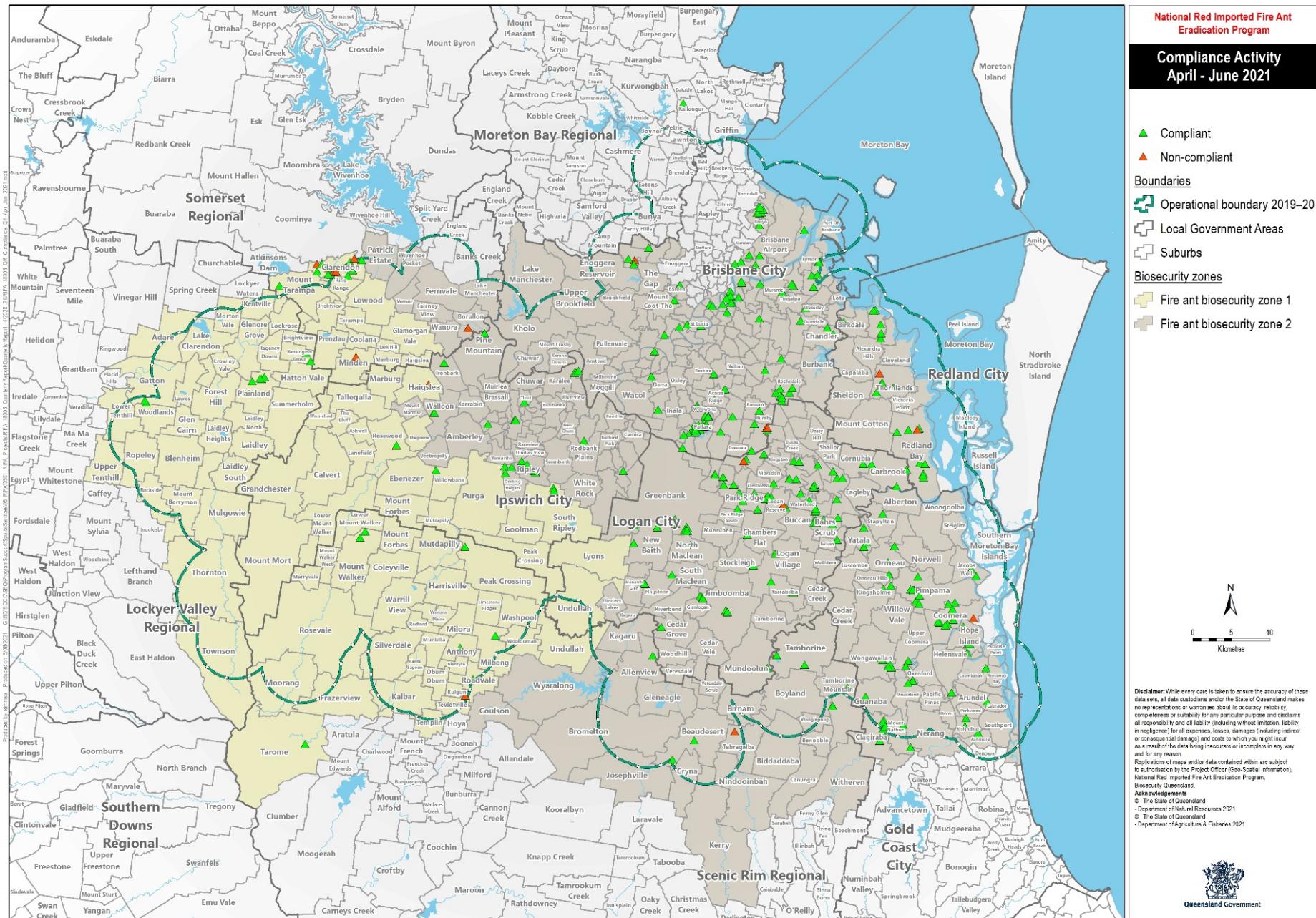
Appendix 1d—Planned treatment progress as of 30 June 2021 (Round 4)



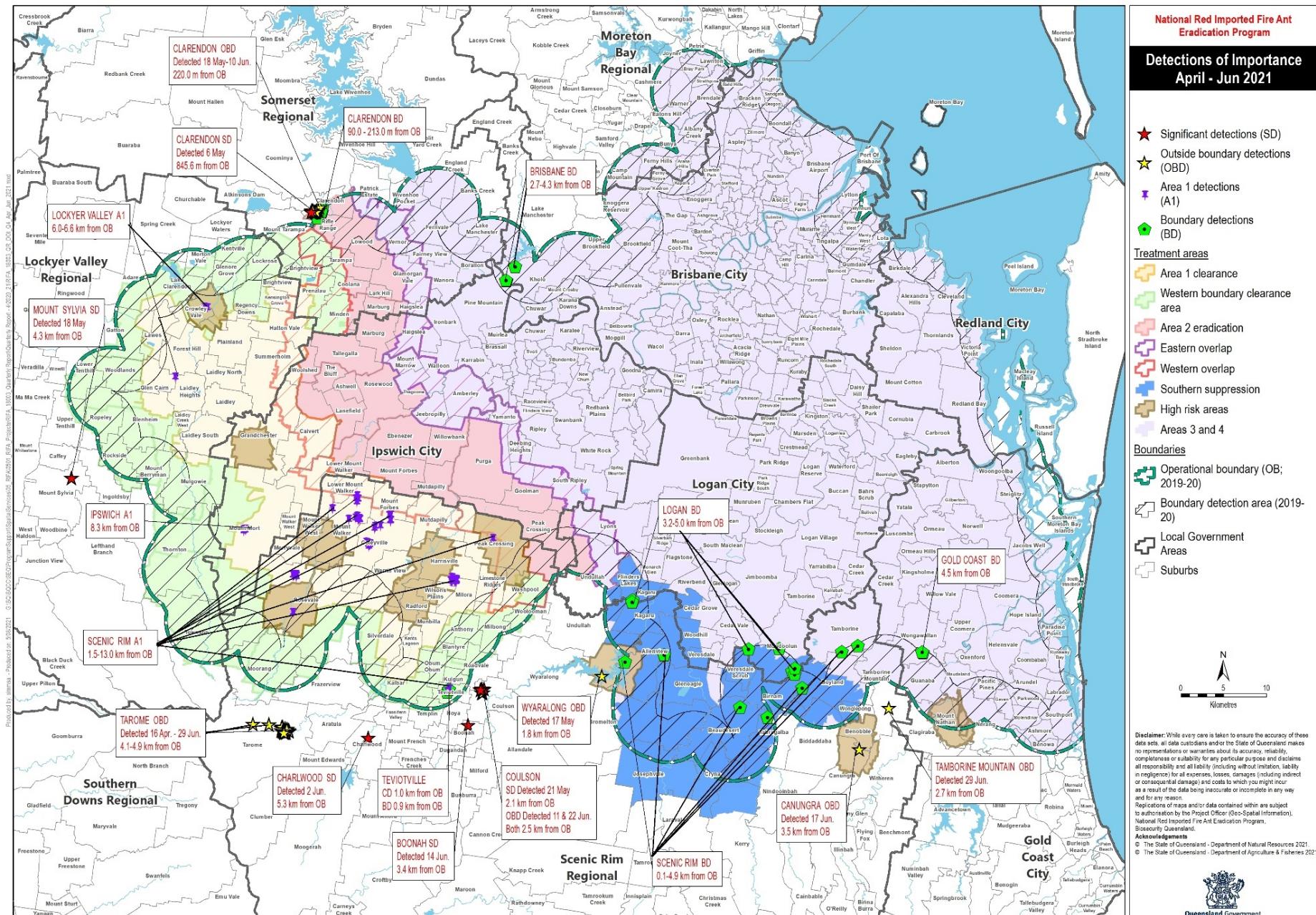
Appendix 2—Responsive and planned surveillance progress as of 30 June 2021



Appendix 3—Compliance activity in Quarter 4, 2020–21



Appendix 4—Detections of importance in Quarter 4, 2020–21



Appendix 5—Detections of importance circumstances and outcome in Quarter 4, 2020–21

Location	Circumstances	Outcome
Significant detections and additional detections outside of the Operational Area boundary		
Clarendon	<ul style="list-style-type: none"> The first detection at Clarendon was on 21 May when a farmer noticed a suspicious nest whilst working in a paddock. In total ninety-four (94) nests have been discovered across nine rural properties. Many of these properties produce and sell hay. Clarendon is within the fire ant biosecurity zones; therefore, the fire ant movement controls apply. Part of Clarendon is outside the operational boundary. A further 16 nests were found inside the operational boundary. 	<ul style="list-style-type: none"> All nests were promptly injected with a contact insecticide by direct nest injection. Treatment with an IGR between 100 m to 500 m was applied following detection. Surveillance of surrounding properties has been undertaken with several additional nests detected. Genetic testing has not yet identified a source nest but has indicated that this is an extremely inbred population which may have resulted from human assisted movement of multiple inbred nests or may be the result of a low number of surviving nests that have bred with each other over several generations. One site has a potential genetic link to Thagoona and Yamanto. Further analysis of these potential links is pending. Since May 2021, 18 compliance audits of hay producers have been conducted. Six non-compliances were detected. To address the non-compliances, three advisory notices and four biosecurity orders were issued. There is a known movement of eight bales of hay from a property at Mt Tarampa, which is a previous sentinel site, and which was subject to a significant detection in July 2020. Further tracing investigations are underway. Clarendon is scheduled to receive three rounds of broadscale baiting treatment in the 2021–22 treatment season.
Mt Sylvia	<ul style="list-style-type: none"> A single reproductive nest was found on the roadside by council workers when slashing the area in May. This nest is over 9 km from the closest known nest at Blenheim. Cultivation paddocks adjoin this section of road to the east and west. There is an organic farm on western side of the road where the nest was found. There has been movements of plant and equipment, gravels and soil to the area associated with road repair and maintenance although it appears that these movements were lawful and that clean down procedures were in place. 	<ul style="list-style-type: none"> The nest, containing reproductive brood and alates, was injected with a contact insecticide by direct nest injection. Treatment with an IGR out to 100 m surrounding the nest is being applied. Surveillance out to 500m has been conducted with no additional nests detected. Genetic testing has not yet identified a source nest but has revealed a single inbred nest that aligns with the Western population. A quarry and council work depots will be visited to assess the effectiveness of the risk mitigation and local government clean down procedures. Remote sensing surveillance is to be undertaken during the cooler months when nests are more visible above ground.
Coulson	<ul style="list-style-type: none"> Four nests containing worker ants were detected at a rural property in Coulson where cultivation and grazing activities were taking place. A further nine nests were detected during delineation surveillance. Five nests of unknown brood were also found on an adjoining property. There have been no known carrier movements to the properties in question. Earthmoving activities occurred 500 m from where the original nests were found. It appears that appropriate clean down procedures were in place. 	<ul style="list-style-type: none"> All nests have been injected with a contact insecticide by direct nest injection. Surveillance of surrounding properties out to 1km has been completed with a number of additional nests detected. Treatment with an IGR between 10 m to 100 m around nests was applied following detection. A number of samples have been taken for genetic testing and analysis is ongoing. Coulson was added to the fire ant biosecurity zones on 8 July 2021. A risk assessment of hay stored in sheds at adjoining properties, that may be at risk of becoming infested, is to be undertaken. Coulson is planned to receive three rounds of broadscale baiting treatment in the 2021–22 treatment season.
Charlwood	<ul style="list-style-type: none"> A large but single reproductive nest was found in an area of cultivation on a small farming property. 	<ul style="list-style-type: none"> The nest has been injected with a contact insecticide by direct nest injection. Treatment with an IGR has been applied out to 100 m surrounding the nest.

Location	Circumstances	Outcome
	<ul style="list-style-type: none"> This detection is 5.3 km south of the operational boundary and 4.8 km southwest of the program's Western Boundary treatment area. The nearest known nest is at Tarome, 9.3 km to the east, also a significant detection. It appears that no carriers have been moved to the site. The property owner noticed the nest at Christmas but only became concerned that they might be fire ants after learning of the Tarome detection, some months later, whereupon he immediately reported them to the program. Tracing enquiries at surrounding farms indicates that hay has been moved to the area at times. An adjoining farm sourced hay from Marburg in May 2020. Some of the surrounding farms also move hay. 	<ul style="list-style-type: none"> Surveillance has been conducted out to 500 m with no additional nests detected. Additional targeted surveillance out 2 km surrounding the nest is being undertaken. Genetic analysis has identified that the Charlwood nest aligns with the West 18-19 cluster and is not related to any samples that have been tested from the Tarome or Boonah detections to date. Investigations are ongoing. The surrounding hay growers have been made aware of the risk mitigation measures and advised to apply them. A more detailed risk assessment of this hay may be necessary if further nests are found. Enquiries into the hay movement from Marburg are underway Further tracing enquiries will be made regarding hay that moved to the area from the north. Morwincha and Fassifern Valley were mentioned, both being one suburb from the zones.
Boonah	<ul style="list-style-type: none"> A single large reproductive nest was found in June at a well-established residence in a semi-rural area of Boonah at the edge of a driveway. The owner said she had previously observed a suspect nest whilst mowing 10 m away. The only carrier that had moved to the site was a load of topsoil from a landscaping yard at Boonah. There may have been movements of carriers to sites within close proximity of the known nest. A large, aged care facility was constructed within 1 km to the south of the property and may have imported soil or other materials. 	<ul style="list-style-type: none"> The nest has been injected with a contact insecticide by direct nest injection. Treatment with an IGR is being applied out to 100m surrounding the nest. Surveillance out to 500 m surrounding the nest is nearing completion. An additional nest in close proximity to the original nest was detected however genetic testing has revealed it to be residual worker ants from the original nest and not a separate detection. Genetic testing revealed the nest aligns with the Western cluster. The nest is not related to mounds detected at Kulgun, Teviotville or Coulson. Genetic investigation is ongoing. Enquiries will be made as to where the landscaping yard sources its materials. Program officers are identifying other potential receivers of carriers in close proximity of the significant detection site and will undertake any necessary enquiries in this regard.
Boundary		
Scenic Rim	Ten detections made across six suburbs: Tamborine (2), Allenvale (2), Boyland (1), Tabragalba (1), Teviotville (3), Beaudesert (1)	<ul style="list-style-type: none"> The detections were made in areas that have previously been infested and can be managed using existing program resources. IGR treatment between 10 m to 100 m was conducted/applied following detection. Surveillance out to 500m was conducted following detection. A number of the suburbs received a single round of broadcast bait treatment during the 2020–21 treatment season. To mitigate the risk of spread broadcast baiting will be applied in the Southern Suppression Treatment Area during the 2021–22 treatment season.
Logan City	Five detections made across two suburbs: Mundoolun (3) and Flinders Lakes (2).	<ul style="list-style-type: none"> The detections were made in areas that have previously been infested and can be managed using existing program resources. IGR treatment between 10m to 100m was conducted/applied following detection. Surveillance out to 500 m was conducted following detection. To mitigate the risk of spread broadcast baiting will be applied in the Southern Suppression Treatment Area during the 2021–22 treatment season.
Somerset	Three detections made across two suburbs: Clarendon (2) and Rifle Range (1).	<ul style="list-style-type: none"> These detections were identified as part of the surveillance in response to the significant detection in Clarendon. All nests have been injected with a contact insecticide by direct nest injection. To mitigate the risk of spread broadcast baiting will be applied in the area during the 2021–22 treatment season.
Gold Coast City	Two detections made in the suburb of Wongawallan.	<ul style="list-style-type: none"> These detections were made in an area that has previously been infested and can be managed using existing program resources.

Location	Circumstances	Outcome
		<ul style="list-style-type: none"> All nests have been injected with a contact insecticide by direct nest injection and an IGR bait has been applied directly surrounding the nest.
Brisbane City	Two detections made in the suburb of Kholo.	<ul style="list-style-type: none"> These detections were made in an area that has previously been infested and can be managed using existing program resources. All nests have been injected with a contact insecticide by direct nest injection and an IGR bait has been applied to between 10 m to 50 m surrounding the nests
Clearance		
Scenic Rim	24 detections across nine suburbs: Rosevale (3), Mount Walker (6), Coleyville (6), Harrisville (3), Peak Crossing (1), Teviotville (2), Mount Mort (2), Mount Forbes (1).	<ul style="list-style-type: none"> These detections were made in an area that has either previously been infested or is surrounded by previous infestation. Most nests contained reproductive brood and a number of the nests were of a large size. Analysis indicates that despite adequate treatment coverage on most properties, alates from sites with active infestation within 2km, which had received inadequate treatment, or the treatment interval was too great, could be the source of the infestation. All detections will receive a minimum of 100 m treatment and 500 m surveillance in keeping with program protocols. Surveillance and additional planned treatment in the clearance area will continue into the 2021–22 season until such time as the program is satisfied no residual infestation remains and areas can progress to the next phase of the freedom framework (Phase 4 freedom). This will include surveillance using remote sensing cameras mounted on helicopters commencing in 2021–22. All but one of these detections will receive three rounds of broadcast bait treatment during the upcoming 2021–22 treatment season. The Mount Mort detection, which was considered low risk, was managed in keeping with normal program procedures.
Lockyer Valley	Three detections across two suburbs: Crowley Vale (2) and Glen Cairn (1)	<ul style="list-style-type: none"> The Crowley Vale detections are on previously infested properties and will receive three rounds of broadcast bait treatment during the upcoming 2021–22 treatment season. The lower risk Glen Cairn detection will be responded to in keeping with program protocols.