NATIONAL
Fire Ant
Eradication
PROGRAM

# Quarterly Report 4 2021–2022

Report to: National Steering Committee: April to June 2022

# Contents

# 1. Scope of the Report

In July 2017, the National Red Imported Fire Ant Eradication Program (the program) began implementation of the Ten Year Eradication Plan 2017-27 (10-year plan). The plan focuses on finding, containing and eradicating fire ants in South East Queensland.

This report to the Steering Committee for the National Red Imported Fire Ant Eradication Program provides information on the program's progress from 1 April to 30 June 2022 against the objectives of the 10-year plan and key performance indicators of the program's 2021−22 Work Plan.

The Australian Government and the governments of all Australian states and territories provide funding for the program in a cost-shared response. The Program is governed by a National Steering Committee led by an independent Chair and administered by the Queensland Government through the Department of Agriculture and Fisheries on behalf of cost-share partners.

The scope of the program's work includes activities to:

- reduce infestation until fire ants are no longer present in South East Queensland
- ensure areas remain free from fire ants
- prevent spread to non-infested areas
- provide evidence to demonstrate freedom from fire ant infestation
- help prevent establishment of new incursions of invasive ant species Australia-wide.

The 10-year plan includes a staged, rolling treatment strategy from west to east with the aim of containing the extent of the fire ant infestation and reducing the size of the infestation in South East Queensland until eradication.

# 2. Key insights

## Progress against key performance indicators (KPIs)

Progress against program KPIs is summarised in Table 1. Progress against some KPIs is reported on a yearly and/or two yearly basis. However, where individual activities are scheduled and finalised within the year, reporting of progress may not be applicable to each quarter.

***Table 1: Progress against KPIs traffic light report at 30 June 2022***

KPI target met | On track/progress as anticipated | Monitoring/minor issues | Off-track/critical issues | Not required/not relevant

| **Stakeholder mobilisation** | | | | | |
|---|---|---|---|---|---|
| **Objectives** | | KPI | KPI target (2021–22) | 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 | 95% of stakeholders report awareness in surveys by June 2022 | • The National Red Imported Fire Ant (NRIFA) Performance Indicator Research Project report (research project report) providing stakeholder behavioural insights was received in May 2022. Of those surveyed, 97% reported awareness of fire ants which exceeds the target. | |
| | | **b.** Percentage of stakeholders aware of the risks posed by fire ants | 95% of stakeholders report awareness in surveys by June 2022 | • The 2022 research project report showed 98% of survey respondents were aware of the risk which exceeds the target. | |
| | | **c.** Percentage of stakeholders aware of fire ant biosecurity zones | 85% of stakeholders report awareness of the risk of fire ants in surveys by June 2022 | • The 2022 research project report showed 86% of survey respondents were aware of the risk which exceeds the target. | |
| | | **d.** Percentage of stakeholders aware of fire ant self-management options | 50% of stakeholders report awareness in surveys by June 2022 | • The 2022 research project report showed 38% of those surveyed were aware of self-management options which does not meet 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 NFAEP operations | Less than 1% opposition annually | • The program visited 44,521 properties to undertake treatment in the 2021−22 treatment season. During this period there were 103 refusals to treatment equating to 0.23% of properties, which meets the target of less than 1% stakeholder opposition. | |
| | | **b.** Percentage stakeholder disclosing to be satisfied with NFAEP operations | 80% satisfaction disclosed in surveys by 2022 | • The 2022 research project report showed 97% of those surveyed said they were satisfied which exceeds the target.<br>(Caution is recommended in interpreting differences in this measure over time due to the small number of respondents.) | |
| **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 participating in fire ant self-treatment actions | 90% of stakeholders participate in fire ant self-treatment actions by June 2022 | • The 2022 research project report showed 56% of those surveyed participated in fire ant self-treatment actions such as checking yards, reporting and/or treating fire ants, which does not meet the target. | |
| **Containment** | | | | | |
| **Objectives** | | **KPI** | **KPI target (2021–22)** | **Progress against KPIs** | **Status** |
| **4** | To mitigate the spread and establishment of fire ants by reducing the relative density and vigour of | **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 | • The 2022 research project report showed 7% of stakeholders in the containment area treated fire ants themselves which does not meet target. | |
| | | **b.** Percentage of fire ant infestations that are polygyne | Less than 1% of fire ant infestations are polygyne | • The target of less than 1% of fire ant infestations identified as polygyne was achieved in Quarter 4, with 0.9% of sites assessed as being polygyne. | |

| Objectives | | KPI | KPI target (2021–22) | Progress against KPIs | Status |
|---|---|---|---|---|---|
| | the fire ant infestation | | | • Of the 1,384 samples tested for social form in Q4, 12 (0.9%) were polygyne. These samples were collected from 8 separate sites.<br>• In 2021−22, of the 5,315 unique sites tested, 63 were polygyne (1.2%), down 0.1% from the previous year.<br>• Of all 6,743 samples tested in 2021−22, 103 (1.5%) were polygyne. In the previous year, 91 (1.4%) of the 6586 samples tested were polygyne. | |
| | | **c.** Relative spread of fire ants within containment area as measured through population genetics | Maintain at four or increase the number of genetically distinct fire ant populations (i.e., family clusters) within South East Queensland | • The number of distinct populations for 2021−22 will not be known until the annual genetic analysis report is finalised in February 2023.<br>• The number of distinct population clusters for 2020−21 was reduced to three, down from five genetically distinct fire ant sub-populations identified in 2019−20. This indicates mergers of two populations as an event of interbreeding rather than eradication of individual clusters. |  |
| 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 | 95% of high-risk stakeholders are aware of movement restrictions/ requirements by June 2022 | • The 2022 research project report showed 91% of those surveyed were aware of movement controls which does not meet 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 | • In the fourth quarter, 187 businesses were audited by an average of three compliance officers against a quarterly target of 424 businesses based on six compliance officers.<br>• This equates to 56% below the planned quarterly target, reflecting the activities of three compliance officers instead of the six planned.<br>• In 2021−22, 840 businesses were audited, representing 49% of the 1,698 riskiest stakeholders (based on the annual target of 25% of 6,792); a good result achieved by an average of half the planned officers. |  |

| Objectives | | KPI | KPI target (2021–22) | Progress against KPIs | Status |
|---|---|---|---|---|---|
| | | **c.** Number of significant detections linked to human-assisted movement | Zero significant detections linked to human-assisted movement | • No detections were linked to human assisted movement during the quarter. | |
| 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 66% from 2019−2020 levels (5 710 ha) by June 2022 | • Surveillance completed by ground crew in 2020−21 totalled 10,178ha, 7.4% in excess of target or 78% above the 2019−20 level. RSS was not conducted in 2020−21.<br>• In 2021−22, the program completed surveillance of 18,866 ha, comprising 9,694 surveyed by ground crew and 9,172 ha of RSS predictions validated by ground crew, achieving 99% in excess of target, or 230% above the 2019−20 level.<br>• Surveillance in Quarter 4 totalled 1,135 ha.<br>• RSS flights covered 30,940 ha over operational boundary areas in 2021−22. | |
| | | **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 2022 | • The 2022 research project report showed 55% of those surveyed looked for and/or treated fire ants themselves which exceeds the target. | |
| | | **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 | • The prescribed treatment regime continued for all detections that were confirmed near and beyond the operational boundary in Quarter 4.<br>• No fire ants were confirmed to be survivors from original nests. | |
| 7 | To mitigate the re-establishment of fire ants in eradication and clearance areas from adjoining (within 2 km from; buffer | **a.** Percentage stakeholders living in buffer areas who look for and/or treat fire ants themselves | 75% stakeholder participation by June 2022 | • The 2022 research project report showed 68% of those surveyed in buffer areas looked for and/or treated fire ants which does not meet the target. | |
| | | **b.** Percentage of buffer area receiving the prescribed treatment | Prescribed treatment regime applied to 99% of planned area | • As of 30 June 2022, a total of 61,273 ha of overlap/buffer treatment was completed. This is | |

| Objectives | | KPI | KPI target (2021–22) | Progress against KPIs | Status |
|---|---|---|---|---|---|
| | areas) fire ant infested areas | regime for fire ant containment (i.e., 2x insecticide treatment) | | 92% of the planned progress to 30 June 2022 (as per Table 2). | |
| | | **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 | • 58 fire ant detections were confirmed in the eastern overlap area during Quarter 4.<br>• Five of the 58 detections were on previously infested properties where original nests were not injected with a liquid insecticide by direct nest injection. A toxicant bait was applied.<br>• Genetic tracing was not undertaken on the five nests due to cost. While it may be likely the ants are remnants of previous nests, there is no conclusive proof of this.<br>• The eastern overlap area received one round of baiting with an IGR during 2021−22 to protect the buffer area from re-infestation. Further rounds are planned for 2022−23. Infestation is expected to persist until six rounds of IGR bait have been applied. |  |
| 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 | • Program K9 teams completed approximately 81.4 kilometres of surveillance activities from 5 to 14 April 2022 at Fremantle WA where fire ants were detected in November 2019. Targeted surveillance areas were cleared apart from one area that attracted strong attitude from K9 Cola. Lures and pitfall traps were placed, with follow-up visual surveillance recommended.<br>• In May 2022, the Senior Handler and K9 Cola completed 88.6 km of tracking in the Greater Darwin area in post-treatment surveillance for browsing ant eradication. All sites were found to be free of browsing ants.<br>• On 8 June 2022, K9 Cola and the Senior Handler helped finalise validation to provide proof of freedom for the Port of Brisbane 2019 browsing ant incursion. |  |
| **Eradication** | | | | | |

| Objectives | | KPI | KPI target (2021–22) | 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 | • Although treatment of Area 3 included in the 2021−22 planned eradication area was postponed to 2022−23, the program treated infestations on 44,521 properties across treatment areas between September 2021 and June 2022. During this period 103 landholders opposed treatment (0.23%); indicating most landholders (99.7%) supported the program's eradication activities. |  |
| | | **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 | • The target was achieved in the previous treatment season completed in June 2021. No further planned eradication treatment occurred in 2021−22, due to the decision to postpone treatment in Area 3 and focus on residual infestation in previous eradication areas. |  |
| | | **c.** Number of fire ant nest infestations in monitoring (positive control) sites following completion of prescribed treatment regime | Zero fire ants present in monitoring sites within three months of completion of prescribed treatment regime | • Prior to the commencement of broadscale eradication treatments in Area 2 in September 2020, multiple monitoring sites were established to evaluate the effectiveness of treatment regimes. Fire ant nests on these sites have been monitored continuously since then.<br>• By 30 June 2022 surveillance of all 480 original monitoring nests found zero remnant fire ants and no live nests.<br>• A final round of full-site surveillance for each of these monitoring sites was completed by the end of the 2022 surveillance season. No further live nests were detected at any of the sites surveyed. |  |
| | | **d.** Percentage of eradication area within which fire ants are detected following prescribed treatment regime completion | Residual fire ant infestations are detected in less than 1% of the eradication area | • Eradication Area 2 consists of 8,582 sites (or properties).<br>• From June 2021 to June 2022, 20.2% of the total number of sites in Area 2 have been surveyed with 2.4% confirmed to have fire ants.<br>• One round of broadscale baiting was applied to these sites during 2021−22. |  |

| Objectives | | KPI | KPI target (2021–22) | Progress against KPIs | Status |
|---|---|---|---|---|---|
| | | | | • To address the persistent infestation this area is scheduled to receive between one and three additional rounds of broadscale treatment during 2022−23. | |
| **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 | 33% of the 2021–22 operational area by June 2022 | • The total area that has received eradication treatment as a proportion of the total operational area is 33%. This two-year target was achieved in the previous treatment season completed in June 2021. Total area of the Western Boundary, Eastern Area 1 and Area 2 where eradication treatment was conducted is 211,581 ha which is 33% of the total area of the operational boundary (645,105 ha). See Table 2 for planned treatment completed in 2021-22. |  |
| **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 33% from 2019−20 costs by June 2022 | • Combined cost for treatment and surveillance was $133 per hectare in 2019−20; $168 per hectare in 2020−21 and $131 per hectare in 2021−22. The target of $90 per hectare (33% less than in 2019−20) could not be met.<br>• The increased cost per hectare in 2020−21 may be attributed to significant expenditure on Advion® bait and aerial services.<br>• In 2021−22 the program achieved consistent per hectare costs across quarters resulting in cost for the year being $2 less than in 2019−20, which reflected increased area covered by the use of remote sensing surveillance (RSS). |  |
| | | **b**. Average per hectare cost of the Program's fire ant monitoring and surveillance regimes to effectively eradicate fire ants | Average per hectare cost of monitoring and surveillance regime is reduced by 33% from 2019−20 costs by June 2022 | • The cost of surveillance and monitoring activities has been combined with treatment costs at 11a. above. |  |
| **Clearance** | | | | | |

| Objective | | KPI | KPI target (2021–22) | 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 deemed to be at highest risk of residual fire ants | The top 10% riskiest locations have been searched by June 2022 | • Surveillance of 5,893 hectares, comprising 2,893 ha surveyed by ground crew and 2,910 hectares of RSS predictions validated by ground crew, achieved 15% in excess of the target of 5,125 hectares (area of top 10% riskiest locations) by 30 June 2022.<br>• No additional ground surveillance occurred in these areas during Quarter 4 as seven of these locations were within a 2021−22 planned treatment area. No Area 2 clearance areas are within the top 10% riskiest locations.<br>• RSS flights covered over 10,419 ha in clearance areas deemed to be at risk of residual infestations in 2021−22. |  |
| | | **b.** Total area searched for the presence/absence of fire ants | Every clearance zone has at least 5% of the area surveyed by June 2022 | • Of the 101 Clearance Zones in the Western Boundary, Area 1 and Area 2, all 101 have received a minimum 5% of the area surveyed, achieving 100% of the target.<br>• 65 clearance zones had received remote sensing surveillance over at least 5% of the area. |  |
| | | **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, due to 38 of the 58 detections made in the clearance area in Quarter 4 being outside the top 20% riskiest locations.<br>• The detections were assessed as a risk to the program and have been included in planned treatment for 2022–23. |  |
| | | **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 | • 58 detections were made in the clearance area in Quarter 4, none of which were confirmed to be from original nests.<br>• Three rounds of broadscale treatment were applied in the clearance area during 2021−22. |  |

| Objective | KPI | KPI target (2021–22) | Progress against KPIs | Status |
|---|---|---|---|---|
| | | | • To mitigate the risk of re-infestation in the clearance area, between one and three rounds of treatment will be applied during 2022−23. | |

## Summary of planned treatment and surveillance

Planned treatment in 2021–22 included suppression and clearance treatment. The summer treatment season commenced in September 2021 and finished on 30 June 2022. See Appendix 1 to view the map of planned treatment areas and progress.

***Figure 1: Planned treatment progress against schedule at 30 June 2022***

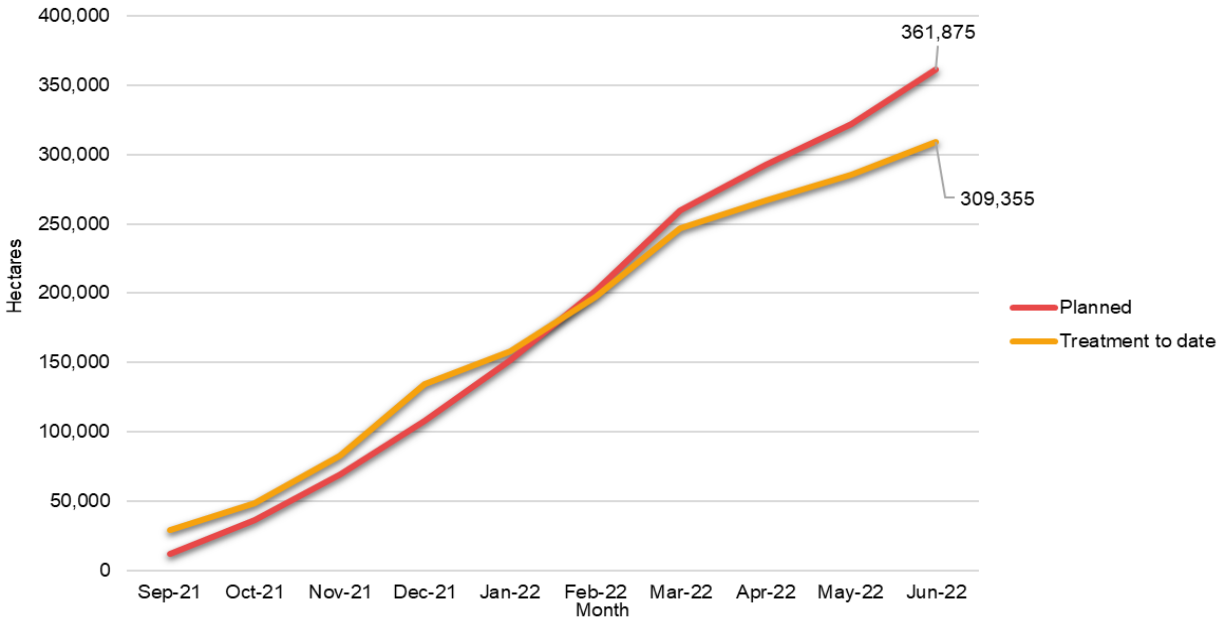


***Table 2: Planned treatment progress at 30 June 2022***

| Treatment area | Previous Planned Ha/year | Adjusted Planned 2021−22 | Actual 2021−22 | % Completed | Adjusted ha Variance |
|---|---|---|---|---|---|
| Area 1 | 99,690 | 96,770 | 92,803 | 96% | - 2,920*** |
| Significant detections | 51,660 | 51,660 | 50,764 | 98% | — |
| Contingency for new detections (A1 / SD / A2) | 44,000 | 34,525 | 39,370 | 114% | - 9,475*** |
| Overlaps | 75,400 | 66,770 | 61,273 | 92% | - 8,630** |
| Southern suppression / Waste Facilities | 86,125 | 64,225 | 63,448 | 99% | - 21,900** |
| Self-treatment**** | 5,000 | 5,000 | 1,697 | 34% | — |
| Total | 361,875* | 318,950 | 309,355 | 97% | 42,925***** |

* Polygyne and responsive notional allocations of 10,100 hectares excluded.

** The Steering Committee approved the reduction of Overlaps by 8,630 ha for Round 2 and the Southern Suppression by 21,900 ha to prioritise treatment of additional new detections and waste facilities.

*** The adjusted contingency area was exceeded by 14% due to the large number of new detections of importance. The excessive amount of lost time caused by the La Nina wet weather event resulted in a decision to postpone the final round of some Area 1 and significant detection treatment areas and prioritise for early in 2022−23.

**** The planned self-treatment area included the total area of identified residential properties, whereas actual represents self-treatment of front yards only.

***** Treatment deferred to 2022-23.

The winter surveillance season commenced in late June 2021 and concluded during September 2021. A total 47,058 ha was surveyed via Remote Sensing Surveillance technology between June and October 2021. Remote sensing surveillance resumed on 28 May 2022.

See **Appendix 2** to view the map of responsive and planned surveillance areas and progress.

***Figure 2: Planned surveillance progress against schedule at 30 June 2022***

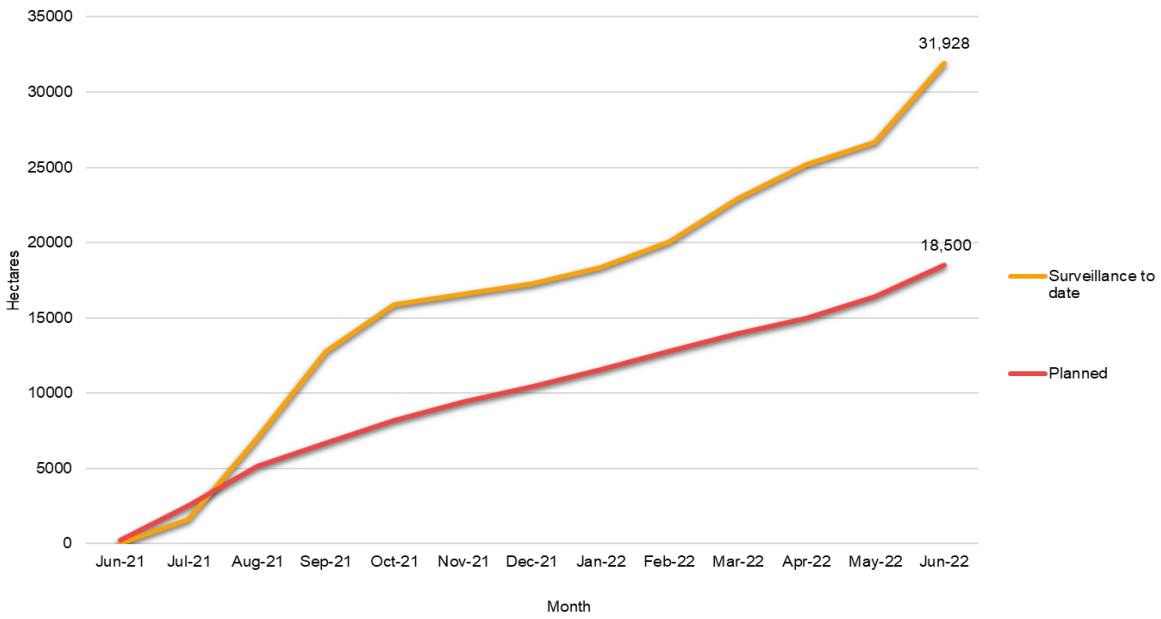



***Table 3: Surveillance progress—planned and responsive as at 30 June 2022***

| Area | | Progress | |
|---|---|---|---|
| Surveillance Area* | Planned Year (Ha) | Actual (Ha) 2021−22 | Completed 2021−22 |
| Clearance | 4 500 | 3,958 | 88% |
| Sentinel | 1 300 | 1,188 | 91% |
| Targeted | 4 200 | 4,803 | 114% |

| Area | | Progress | |
|---|---|---|---|
| Responsive** | 8 500 | 8,500 | 100% |
| Total | 18 500 | 18,449 | 100% |
| Total including unplanned responsive (public sample collection 15,787 ha) | | 31,928 | |

* Sentinel surveillance—planned ground surveillance on sites outside and just inside the operational boundary; Clearance surveillance—planned ground surveillance on sites within previous eradication treatment areas: Area 2; Targeted surveillance—planned ground surveillance on sites within 5 km of the operational boundary which had previous infestation.

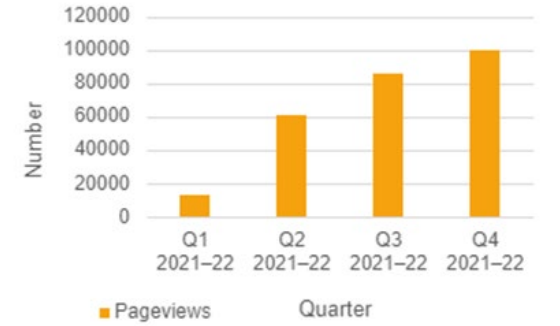
** Includes 2,501 ha of Public Sample Collection surveillance totalling 15,787 ha. A notional allocation of 8,500 ha was made for responsive surveillance around new detections based on previous years, for planning purposes only. See **Containment** below for further information on surveillance.

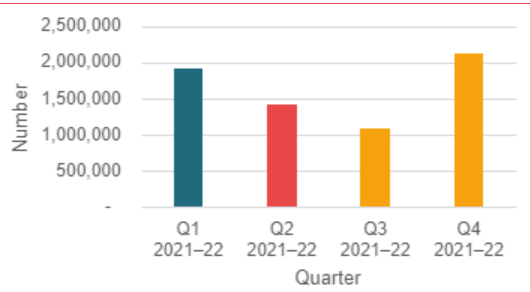
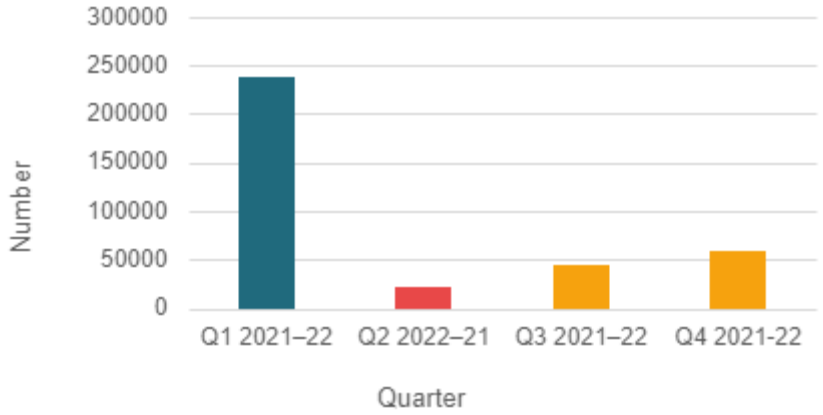
# 3. Stakeholder mobilisation

## Raising stakeholder awareness

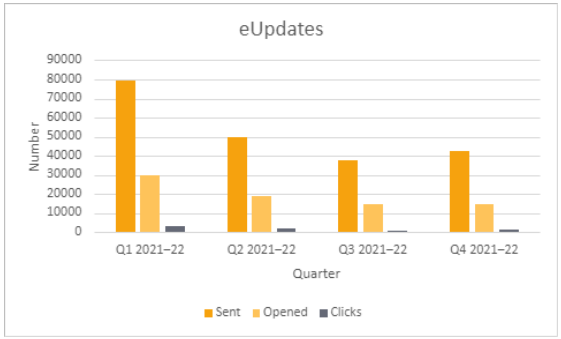
In 2021−22 the program continued to undertake communication and engagement activities aimed at empowering residents to look for and treat fire ants themselves and strengthening relationships with key industry groups to assist in fire ant eradication and suppression. Activities included localised engagement in treatment areas, enhancement of digital engagement, broadscale advertising and provision of online training for the community and industry.

Primary communication channels used to raise awareness across community and industry, including trends across quarters

| | |
|---|---|
| Media stories mentioning the fire ant program<br>  | • A total of 52 news media stories mentioned the program or fire eradication this quarter, a 26% increase in those received in Quarter 3.<br>• The sentiment of the articles was varied with an estimated 80% of the stories stemming from a series of media queries and interviews about the impact of floods on fire ant spread.<br>• The remaining articles focussed on the state budget and general biosecurity threats and pests. |
| Website page views—fireants.org.au<br>  | • More than 70% of web visitors were driven to the website from organic social media posts or paid advertising including search engine optimization.<br>• A total of 77% of visitors are using a mobile or tablet device to navigate the website.<br>• The Net Promoter Score (NPS) used to better gauge community satisfaction of the program is now at 31—up 11 points since last quarter. Scores are measured with a single survey question and reported with a number between -100 to 100. A score of 10–30 is good, and a score of over 50 is exceptional. |
| Social media reach | • Efforts to build on and expand the program's reach through organic and paid social media advertising continued in Quarter 4. |

| | |
|---|---|
|  | • The messaging, which included the program's 'Don't spread fire ants campaign', was viewed 2,117,453 times, more than 840,000 more than last quarter.<br>• During the quarter, there were 799,308 engagements with the posts and 29,610 link clicks.<br>• The top performing post received more than 50,000 engagements at a cost of just $0.01 per engagement. |
| Direct mail delivered<br>  | • A total of 59,760 direct mail pieces were delivered in Q4 across just one campaign.<br>• The delivery was part of the *Don't spread fire ants* campaign and targeted rural landholders located in the west, north and south of the fire ant infestation.<br>• The 12 page A5 brochure featured a comprehensive summary of key information relating to fire ant biosecurity zones and movement controls. |

Emailed newsletters and notices opened




- A total of 9 electronic newsletters and notifications were sent to external and internal stakeholders in the form of Fire ant news, InformANT, community and industry alerts in Quarter 4.
- Overall, 42,449 people received the communication with 14,683 (35%) opening or reading the message—a drop of 5% from last quarter.

## Building support and empowering stakeholders

Stakeholder fire ant awareness and treatment training


- The online training packages are continuing to gain momentum, with the addition of the workplaces course at the end of Quarter 3.
- The online workplaces course is currently being trialled by Bunnings and integrated into their learning management system. The proposed long-term outcome is for large organisations to take on the role of advocate by training their staff on the program's behalf.
- The release of the third module which is specifically designed for pest managers will be delivered late in Q1 or Q2, 2022−23.
- A total of 966 people completed the residents (384) and workplaces training (582) this quarter.
- As hoped, these online modules have reduced the need for the program's engagement team to deliver on-demand training to community groups, business and industry.
- Just three councils and the Department of Transport and Main Roads received in-person training (186). A further 142 people received online training.

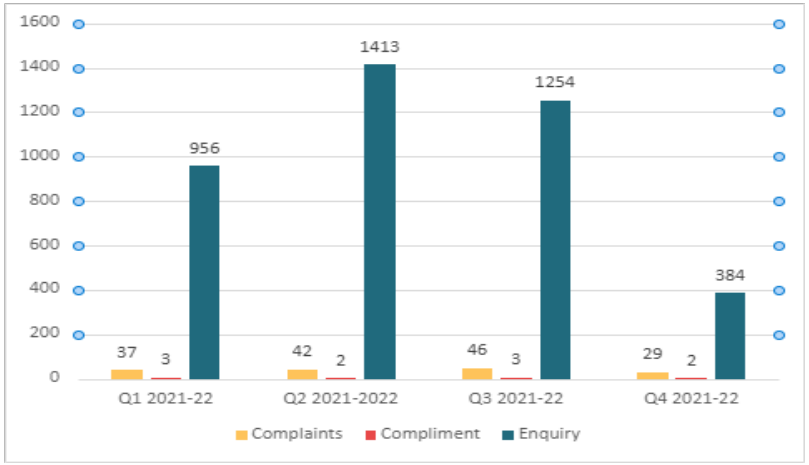
## Community self-treatment projects

***Table 4: Community self-treatment projects status***

| Location | Status |
|---|---|
| Gold Coast | • The project was finalised and end-of-project research conducted. Research showed:<br>• the campaign raised significant awareness in the target suburbs with 87% of people recalling the campaign<br>• 81% of people recalled receiving a campaign brochure and sticker in their letterbox.<br>• Learnings will be used to develop future self-treatment projects and campaigns. |
| Tamborine Mountain – Phase 2 and Calamvale Ward, Brisbane | • Projects were finalised and any remaining bait was collected from Tamborine Visitor Centre, the Calamvale Ward office and the Karawatha Forest Discovery Centre. |
| Future self-treatment projects—2022−23 | • All future self-treatment projects including the Oxley Creek Transformation and the Ipswich community self-treatment projects will be managed by the Fire Ant Suppression Taskforce. |

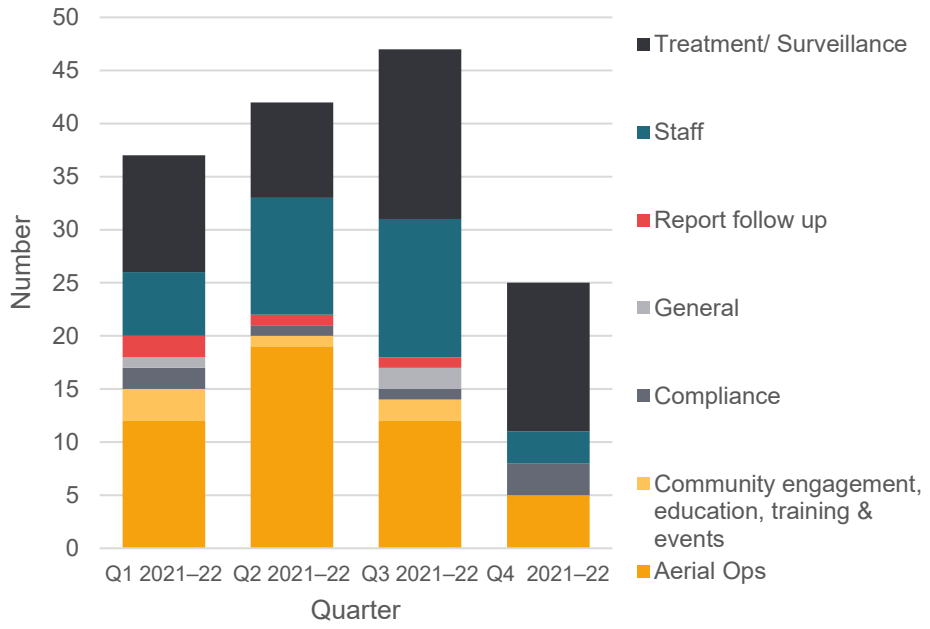
## Complaints and feedback

Public contacts about fire ants other than suspect fire ant reports




- In addition to reports of suspected fire ants, 415 contacts were received by the department's Customer Service Centre about fire ant-related activities this quarter.
- 384 contacts were general enquiries, down from 870 in the previous quarter.
- A total of 29 interactions were complaints (7%) and 2 were compliments (0.48%).

Complaints per quarter




- There was a drop in the number of complaints received, down from 46 in Quarter 3 to 29 in Quarter 4.
- Most complaints were related to program-related activities in the Scenic Rim Regional Council area or Ipswich and Logan City Council areas.
- The majority of complaints were related to treatment and surveillance activities (48.3%) followed by aerial operations (17.2%) and staff (13.8%).
- Complaints about treatment and surveillance were mainly due to Powers of Entry (7) and not receiving treatment notification of communication. Staff complaints were varied but included alleged claims of damaged property, dangerous driving and general behaviour.
- Complaints about aerial operations dropped by more than half and were mainly related to animal welfare concerns, helicopter noise and general opposition to use of aircraft.
- All complaints were addressed and responded to promptly by the relevant team within the program. Two complaints are ongoing.
- In an effort to reduce complaints about the program's operational activities further, the communications and engagement team continued to include targeted messaging in a variety of communication materials. Messages about treatment activities, bait used and the need to treat all properties will also be ramped up across communication channels.
- Regular meetings and toolbox talks were also conducted with operational team leaders and managers to discuss any immediate or ongoing issues.
- The Communication and Engagement team plans to recommence visits to depots in 2022−23.

## Refusing treatment by the program

From 1 July 2021 to 30 June 2022 the program received 103 refusals out of a total 44,521 properties visited for treatment. This equates to 0.23%, less than the goal of 1% opposition and indicates a gratifying level of support for the program's eradication treatment activities.

- Gaps in treatment coverage and failure to complete treatment rounds have prevented treatment success in the past.
- Landowner refusal to treatment is monitored and strategies implemented to ensure treatment occurs on all properties.
- Under section 261 of the *Biosecurity Act 2014* Authorised Officers may, at reasonable times, enter the place to take any action authorised by a biosecurity program.
- If landowners continue to refuse access the program will enforce its legal right to enter and treat the property with Queensland Police Service (QPS) in attendance and it is likely the landowner will be issued with an infringement notice.
- One property remains to be treated as at 30 June 2022. Treatment will be completed during spring 2022 with the Queensland Police Service in attendance.

***Table 5: Refusals to accept fire ant treatment 2021–2022***

| Action | Q1 | Q2 | Q3 | Q4 | Outstanding 30 June 2022 |
|---|---|---|---|---|---|
| Clients refusing treatment | 6 | 39 | 49 | 9 | |
| Consented to avoid compliance actions* | 0 | 0 | 34 | 29** | |
| Treatment enforced with QPS assistance | 0 | 2 | 26 | 11 | |
| Refused properties that remain to be treated | 6 | 37 | 32 | 1 | 1 |

* When faced with compliance action; i.e. a penalty infringement notice (PIN) for obstructing the program's authorised officers from undertaking treatment under a biosecurity program, some clients relented and gave permission for the treatment to occur.

** Treatment occurred on properties during quarter four that were refusals from the previous periods, therefore the figures do not represent a tally.

# 4. Containment

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 at or near the operational boundaries, working with high-risk material industries to ensure compliance and preventing spread through the human-assisted movement of fire ants and working with the community to suppress the pest in areas with high fire ant populations. 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 and eradication area protection

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 undertaken using monitoring sites within previous planned eradication areas to detect any residual ants (see Clearance section 6). To protect the boundary and previous eradication areas suppression treatment is conducted. During 2021–22 planned surveillance in the containment areas was undertaken using ground teams and remote sensing cameras mounted on helicopters.

### Surveillance

The winter surveillance season commenced in late June 2021 and concluded during September 2021. The program commenced sentinel surveillance during September 2021 as planned and continued clearance and sentinel surveillance during periods of unsuitable treatment weather. Targeted and responsive surveillance continued throughout the treatment season from September 2021 to June 2022. Clearance and targeted surveillance using remote sensing cameras mounted on helicopters resumed on 28 May 2022 to locate any residual infestation in Area 1 and the Western Boundary. Clearance surveillance by ground teams focused on Area 2. A total of 1135 hectares ground surveillance and validated RSS surveillance was completed in Quarter 4. See Figure 2 above to view surveillance data for this quarter and to view the progress map.

### Remote sensing (aerial) surveillance

The 2021-2022 Remote Sensing Surveillance (RSS) season was planned to run from May to mid-October with the aim of capturing imagery from areas bordering planned treatment areas extending through to the containment boundary. This strategy intended to confirm the success of previous eradication and identify any residual infestation within planned treatment areas. The season saw imagery captured from approximately 47,000 ha from July until mid-October. Several nests were confirmed by field teams during RSS validation activities in locations where infestation was previously unknown.

RSS activities undertaken in the southern containment area in 2021−22 will provide information about the extent of spread to the south and the relative density of infestation to inform future treatment activities in this area. The goal for the 2022 RSS season is to increase the area of land surveyed using RSS technology, with plans to capture imagery from between 50,000 and 65,000 hectares in 2022−23. To increase the likelihood of reaching this target, RSS flights re-commenced in Quarter 4 on 28 May 2022.

### Suppression treatment

The program conducted two rounds of western and eastern overlap treatment to prevent reinfestation of areas where eradication treatment was completed in 2020–21. The western overlap area is a minimum two kilometre buffer west from the eastern edge of Area 2 and the eastern overlap is a minimum two kilometre buffer east from the eastern edge of Area 2. The second round was reduced due to flooding and treatment of these areas deferred to 2022−23. Two rounds of treatment also occurred in southern suppression treatment zones (1) North—a minimum three kilometre buffer inside the operational boundary north of known detections and (2) South—a minimum two kilometre buffer outside the operational boundary to the south of known detections. Parts of the southern suppression area were reduced to achieve cost savings. These areas are prioritised for treatment in 2022−23. During the fourth quarter the program applied the second application in the southern suppression treatment area.

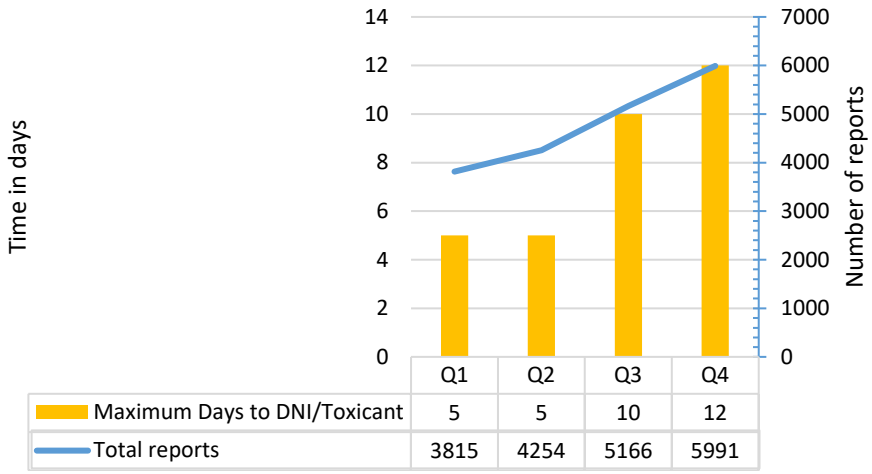
### Responsive treatment

Responsive treatment is delivered when the community reports suspected fire ants and they are positively identified. It is also delivered when positive sightings are found by program field staff in the normal course of treatment and surveillance work. Detections by field staff are treated immediately with IGR bait unless prevented by wet weather. The majority of responsive treatment results from community reports which 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** below for more information).

### Community reports of fire ants

There were 6,228 public reports of suspected fire ants in Quarter 4, an increase of 266 (4%) from the previous quarter, with 366 of the reports resulting from people actively looking for fire ants. The top ten suburbs generating the greatest number of reports were: Jimboomba (Logan City), Ripley Valley (Ipswich City), Greenbank (Logan City), Redbank Plains (Ipswich City), Park Ridge (Logan City), Bahrs Scrub (Logan City), Walloon (Ipswich City), Logan Reserve (Logan City), Spring Mountain (Ipswich City), Pallara (Brisbane City). The top ten suburbs represented 30% of reports received this quarter.

***Figure 11: Public reports and maximum days to direct nest injection (DNI) treatment 2021–2022***




## 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. During Quarter 4, 174 detections of importance were confirmed (as detailed in Table 6)

***Table 6: Fire ant detections of importance Quarter 4 2021–22***

| Type* | No. | Location/s |
|---|---|---|
| Significant | 4 | Wonglepong (1), Woolooman (1), Biddaddaba (1), and Josephville (1) |
| Boundary | 82 | Allenview (20), Beaudesert (7), Biddaddaba (4), Boyland (3), Bromelton (5), Brookfield (1) Flinders Lakes (3), Guanaba (1), Josephville (5), Kerry (1), Kholo (1), Maudsland (4), Mundoolun (4), Tabragalba (7), Tamborine (4), Tamborine Mountain (1), Veresdale (3), Veresdale Scrub (5), Wongawallan (1), and Wonglepong (2) |
| Clearance area | 88 | Blantyre (4), Brightview (1), Ebenezer (1), Forest Hill (1), Glen Cairn (1), Goolman (2), Harrisville (1), Hatton Vale (1), Kalbar (1), Kents Lagoon (1), Kentville (1), Laidley (2), Laidley Creek West (1), Lockrose (5), Marburg (1), Moorang (4), Mount Forbes (1), Munbilla (2), |

| Type* | No. | Location/s |
|---|---|---|
| | | Mutdapilly (6), Peak Crossing (3), Plainland (5), Prenzlau (1), Purga (11), Rosevale (1), Rosewood (2), Summerholm (5), Thagoona (1), Warrill View (1), Washpool (19), and Woolooman (2). |

* Significant = A new detection found outside the program Operational Area boundary. 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 detections

- The program confirmed four significant detections in the Scenic Rim during the fourth quarter: Wonglepong, Woolooman, Biddaddaba and Josephville.
- All four detections were made in areas where fire ants were suspected to be because of infestation in surrounding suburbs.
- Tracing investigations found no unlawful movement of fire ant carriers onto or from the four properties.
- Because there is infestation in neighbouring suburbs, and no apparent illegal movement, it is thought that these detections are a result of natural spread.
- Genetic analysis will be conducted on the samples obtained from the colonies to determine relatedness with any other infestations within the southeast Queensland population.
- There have been multiple other detections beyond the boundary this quarter (refer appendix 4 for a map of detections), but they have all been in areas that have previously recorded infestation.
- To reduce the risk of spread associated with continuing detections outside of the operating area, the program has adopted recommendations from the 2021 independent strategic review to extend the operational area to ten kilometres beyond known infestation and conduct multiple extensive broadscale treatment in these areas during 2022−23.

### Boundary detections

- 82 boundary detections were confirmed during quarter four in Brisbane City (2), Scenic Rim (65), Logan City (9), and Gold Coast City (6) local government areas.
- 80 of the 82 boundary detections were in the southern portion of the operational boundary, which presents a risk of spread to the New South Wales border as well as a risk to the program's containment objectives.
- One round of broadcast baiting with an IGR was applied to the area during 2021–22 and further extensive broadscale treatment is planned in 2022−23.
- All detections within the Scenic Rim area are included in planned treatment for 2022−23 to receive one round of treatment.
- The treatment is intended to mitigate the risk of spread further south towards the New South Wales border. (See **Appendix 4** for a map of detection locations.)

## Polygyne detections

Genetic analysis of the social form of fire ants is undertaken to guide treatment activities. Multi-queen colonies (polygynes) have an increased risk of spread via human-assisted movement and are more expensive and difficult to eradicate compared with single queen colonies (monogynes). As such, one of the KPIs of the program is to maintain the percentage of polygyne infested sites in southeast Queensland at or below ~1%. This is far less than the proportion of polygyne colonies seen in overseas infestations, which is often between 40% to 70% or higher.

As presented in Table 7, the target of less than 1% of fire ant infestations identified as polygyne was achieved in Quarter 4, with 0.9% of sites tested being assessed as polygyne. In 2021−22, of the total number of unique sites tested (5315), 63 were polygyne infestations (1.2%). Of the 1384 samples tested for social form in Quarter 4, 12 (0.9%) were polygyne, collected from 12 separate sites.

For the 2021−22 financial year, of all 6743 samples tested, 103 (1.5%) samples were polygyne, 0.1% more than in 2020-21. Testing included routine diagnostic testing of samples collected in previous quarters with no prioritisation attributed, due to testing occurring within the span of treatment stages. A backlog of samples for testing has resulted from an increasing number of samples being collected in recent years impacting testing capacity. Introduction of sample triaging described in Section 7 of this report has assisted in reducing the backlog. Further measures explored in Quarter 4 are under consideration to reduce the gap between sample collection and genetic testing.

***Table 7: Fire ant samples and sites tested for social form 2021–22***

| Testing period | Total samples tested^ | Monogyne samples | Polygyne samples | Sites with monogyne colonies* | Sites with polygyne colonies* | Total sites tested | Percentage polygyne sites |
|---|---|---|---|---|---|---|---|
| Q1 2021−22 | 2029 | 1984 | 44 (2.2%) | 1593 | 15 | 1608 | 0.9% |
| Q2 2021−22 | 1835 | 1807 | 28 (1.5%) | 1601 | 27 | 1628 | 1.7% |
| Q3 2021−22 | 1495 | 1474 | 19 (1.3%) | 1416 | 17 | 1433 | 1.2% |
| Q4 2021−22 | 1384 | 1372 | 12 (0.9%) | 1265 | 12 | 1277 | 0.9% |

| | | | | | |
|---|---|---|---|---|---|
| Includes 2021−22 sites where samples collected more than once | | | | 5875 | 71 |
| Actual (unique) sites 2021-22 | | | | 5252* | 63* |
| Total tests 2021−22 | 6743 | 6637 | 103 (1.5%) | | |

^ Excludes samples found to have <15 ants, which are not suitable for analysis

* Total number of sites with monogyne (5252) and polygyne (63) colonies for 2021−22 = Total number of unique sites tested; i.e. less than the sum of Q1-4 sites because some sites had multiple samples tested in more than one quarter.

## 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 and targets industries most likely to transfer fire ants through compliance audits. Changes to fire ant biosecurity zones in June 2021 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 audit

The *Compliance Plan 2021–22 Human Assisted Spread Mitigation* was developed to ensure 25% of 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. The KPI target of 25% was based on the assumption that a full complement of six compliance officers would be employed**.** Through activities such as field inspections, compliance inspections and purchase of business data the program developed a database of high-risk businesses which includes landscaping services, hay producers, earthmovers, waste facilities, civil construction, developers, builders and quarries.

Targeting the top 25% of approximately 6,792 businesses in the database equates to 1,698 audits annually: 424 audits a quarter for six compliance officers and 70 audits a quarter for an individual officer. Irrespective of the number of compliance officers employed, the compliance team aims to complete 70 audits per officer quarterly.

The compliance team prioritises industry audits based on level of risk of their potential movement of fire ants. Other factors considered include seasonal production and movement of carriers, proximity to high density infestation, recent inclusion in a biosecurity zone and proximity to zone boundaries. In Quarter 4, in support of the program's *Moving Soil? Don't Spread Fire Ants* campaign, the compliance team audited 146 earthmoving, civil construction and building businesses in the Logan and Gold Coast development zones and found 100% compliance in these industries. The hay production industry continues to be a source of concern, with 20% of audited businesses found to be non-compliant with hay storage provisions of the Biosecurity Regulation 2016.

During Quarter 4 the compliance team averaged three operational officers. This impacted the viability of the performance measure which was based on a full complement of six operational officers. As a result of this, the target for fourth quarter audits was adjusted to 147. Despite time available for compliance audits being reduced by providing support for enforced entry, completion of investigation training and COVID−19 staffing impacts, the compliance team conducted 187 audits during the quarter achieving 27% above the adjusted target. By working with and educating businesses and stakeholders, compliance officers achieved the compliance of 99% of businesses audited in Quarter 4. Continuing to extensively engage and communicate with industry in addition to audits will be key to maintaining a high level of compliance. In response to the 2021 independent review compliance officer positions will be designated as temporary 3-year positions, with the aim of improving staff retention in 2022−23.

***Table 8: High risk industry audits—numbers compliant versus non-compliant Quarter 4 2021–22***

| High risk industry | No. audits | Non-compliance | | Outcome |
|---|---|---|---|---|
| | | Number | % | |
| Hay | 15 | 3 | 20% | Advisory Notices were issued to hay producers and sellers for not storing hay in compliance with Section 71 of the Biosecurity Regulation 2016. All producers worked with compliance to rectify non-compliances. One non-compliance is currently under review. |
| Earthmoving | 74 | 0 | 0% | |
| Civil construction and builders | 72 | 0 | 0% | |
| Landscape Supplier (Potted Plants) | 8 | 2 | 25% | Advisory Notice issued for not drenching potted plants not stored in compliance with Section 71 of the Biosecurity Regulation 2016. |
| Local Council | 4 | 0 | 0% | |
| Quarry | 6 | 0 | 0% | |
| Waste Management | 7 | 1 | 14% | Advisory notice for not following bait conditions in BIP |
| Product Agent | 1 | 1 | 100% | Advisory notice for not using chemical perimeter treatment |
| Total | 187 | 7 | 4% | 99% of businesses are now compliant.<br>Compliance is reviewing one case of non-compliance. |

# 5. Eradication

During 2020–21, the program confirmed 216 detections of importance, 73 of which were located within the program's previous eradication areas—Area 1 and the Western Boundary. This resulted in a decision to postpone treatment of Area 3. During 2021–22, the program's strategy focussed on treatment of residual infestation in the previous Area 1, Area 2, Western Boundary areas and high-risk areas outside boundary areas. The objective was to destroy remnant infestations in the clearance areas (where eradication treatment had been completed in previous years); prevent further spread outside the operational area; and protect previous eradication areas from re-infestation.

### Monitoring the efficacy of broadscale bait treatment in Area 2

In the 2020–21 treatment season, as the program prepared to move into the new Area 2 eradication area, a more intensive methodology for broadscale eradication treatments was developed as part of an adaptive management approach. Under this approach, four bait rounds were applied in a single treatment season (September 2020–June 2021) and in some sections of Area 2, a fast-acting bait (Advion®) was included in the treatment sequence to investigate if this could further accelerate eradication.

Before applying these eradication treatments, 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 in Area 2 was:

- 323 nests (northern section: treatment strategy = 4 x IGR treatment rounds)
- 66 nests (central section: treatment strategy = 3 x IGR treatment rounds + late Advion® treatment in round 4)
- 91 nests (southern section: treatment strategy = 3 x IGR treatment rounds + early Advion® treatment in round 2).

All monitoring nests have been visited on a four-week/monthly schedule from September 2020 to June 2022 and assessed for the level of fire ant activity. 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. Monitoring of treatment efficacy revealed that no live nests remained in the central and southern areas after the 2020-21 treatment season, but that some nests were still showing signs of activity in the northern section that had received 4 x rounds of IGR bait. As such, the program applied a further 2 x rounds of IGR bait over the entire northern section in the following 2021-22 treatment season.

By the end of Quarter 2, 2022 100% of all 480 original monitoring nests across all sites and treatment sections appeared to be dead and no further activity was detected during monthly monitoring through Quarters 3 and 4. These results indicate confidence that when the standard prescribed treatments are applied (six consecutive rounds of IGR baits within two years) they will be successful at achieving localised eradication. The results have also indicated some potential for the inclusion of Advion® bait in treatment regimes to contribute to successful eradication. A broadscale treatment trial including toxicant bait is planned to commence in the western area in 2022−23.

Activities through Quarter 4 included continued nest monitoring as well as well as full-site surveillance of the monitoring sites to look for any new nests. No new live nests were detected in Quarter 4 and for more than six months, all nests in the Area 2 monitoring sites were observed to be dead. This project will conclude nest monitoring activities on completion of full site winter surveillance, by the end August 2022.

### Mortality of monitoring nests in Area 2 as of June 2022 - Summary

- 100% (n=323) Northern section; 4 x IGR 2020-21 + 2 x IGR 2021−22 — Achieved by end of Q2 (current year)
- 100% (n=66) Central section; 3 x IGR + toxicant in Round 4 — Achieved by end of June 2021
- 100% (n=91) Southern section; 3 x IGR + toxicant in Round 2 — Achieved by end of June 2021

# 6. Clearance

Under the proposed Clearance and Proof of Freedom Strategy, clearance zones must have two consecutive years of clearance surveillance without any living fire ants observed before they can be declared ‘clear’. Because of the risk posed by detections of fire ants in Area 1, Area 2, and the Western Boundary, broadscale treatment was undertaken during 2021−22.

### Clearance detections Quarter 4

- Eighty-eight (88) detections were confirmed in the Clearance Area this quarter: Blantyre (4), Brightview (1), Ebenezer (1), Forest Hill (1), Glen Cairn (1), Goolman (2), Harrisville (1), Hatton Vale (1), Kalbar (1), Kents Lagoon (1), Kentville (1), Laidley (2), Laidley Creek West (1), Lockrose (5), Marburg (1), Moorang (4), Mount Forbes (1), Munbilla (2), Mutdapilly (6), Peak Crossing (3), Plainland (5), Prenzlau (1), Purga (11), Rosevale (1), Rosewood (2), Summerholm (5), Thagoona (1), Warrill View (1), Washpool (19), and Woolooman (2).
- A high-density infestation consisting of hundreds of nests was confirmed in the suburb of Washpool over seven properties that had received several rounds of eradication treatment. Although some fire ant carrier materials were brought onto the property, human-assisted movement was ruled out because the products were either brought on too early or too late to be the source of infestation. Genetic results determined that the infestation was monogyne indicating the source is natural spread.
- Some detections (Figure 7) were in areas that had confirmed infestation during 2020–21. As such they were included in the program’s planned treatment areas for 2021–22 to receive three rounds of broadscale baiting with an IGR.
- All clearance detections in this quarter are planned to receive multiple rounds of broadscale baiting with an IGR during 2022−23.

***Table 9: Challenges and solutions to clearance activities Quarter 4 2021–22***

| Challenges | Solutions |
|---|---|
| Incorporating RSS into every aspect proof of freedom surveillance and treatment planning and strategy | • Analysis of RSS accuracy data, as well as costs.<br>• Building surveillance and detection simulations, as well as computer programs, to optimise expenditure on ground-based surveillance in the RSS package towards statistical evidence of freedom. |

| | |
|---|---|
| Timely validation of remote sensing predictions by field staff (i.e. needs to occur as close to imagery collection as possible) | • A major focus of the RSS project in planning for 2022 activities has been to ensure that predictions from RSS are obtained and sent for field validation as close to the date of imagery capture as possible.<br>• These solutions range from increased efficiencies in image collection, handling and processing, to ensuring there will be adequate staffing levels for ground-based RSS validation surveillance. |
| • The time for delivery of predictions has been reduced since the 2021 surveillance season. However, delays in completing field validation activities on many of these sites is still evident, potentially due to the total number of predictions that have been tasked for validation. Investigation into how to reduce the total number of predictions requiring validation by field teams is ongoing.<br>• The total time required for image processing has been reduced, comparative to the 2021 season.<br>• A proposal to install a data link to allow overnight transfer of captured imagery to the processing team based in Melbourne was not realised this season due to ITP constraints. There is an intention to move the image processing part of the workflow to Queensland during the 2023 season, however this has not yet been confirmed due to capital works required to house staff and server hardware.<br>• The data link option for overnight transfer is still being pursued to ensure an option is available to reduce the turn-around time on predictions for the 2023 season.<br>• The program trained all planned teams in RSS validation surveillance processes. | |

### Clearance and Proof of Freedom Strategy

Program scientists have finalised development of simulation programs to help in analysis of the accuracy and reliability of the RSS package and the integration of RSS into standard clearance surveillance activities under the Clearance and Proof of Freedom Strategy. However, due to RSS sensitivity, simulation programs and development of potential rules and procedures for transforming RSS results into statistical evidence are dependent on estimating RSS sensitivity and calibration of predictions to improve and evaluate their reliability. The process for integrating predictions into ground-based surveillance has been developed and ground teams can now fully use RSS generated predictions to guide their surveillance.

An analysis of clearance surveillance results was undertaken in Quarter 3 to identify Clearance Zones (CZs) that met the necessary criteria for “clearance” declaration and progression into the next stage of the Clearance and Proof of Freedom Strategy. The current strategy has not progressed clearance at the expected rate. Due to the number and spacing of recent detections in the eradication area, clearance is not expected in any CZs for at least two years.

- Of the 103 CZs that intersect the new “eradication area” boundary, 79 have detections that were within 500m in the past year
- Of the 24 CZs that did not have a detection in 2021-22, 10 have had a detection within 500m during the past 2 years
- There are many CZs that are in the “containment” area with recent detection, that are also adjacent to CZs in the eradication area.

# 7. Research and innovation

### Field trials to support APVMA permit changes by measuring the interception of fire ant bait by crops

*Australian Pesticides and Veterinary Medicines Authority* (*APVMA*) permits allowing the program to aerially apply IGR fire ant baits Distance and Engage require that crops treated must be washed following harvest. However, for many crop types, this is frequently impractical or not standard agricultural practice. As such, permit restrictions have resulted in treatment gaps in parts of the eradication area and contributed to some persisting fire ant infestations. Results of 2021 desktop studies undertaken by program scientists found that the low concentrations of chemically active components and low application rates of Distance and Engage would be unlikely to exceed scheduled maximum residue levels in crops. Despite this, the APVMA advised trial data would be required to support less restrictive permit changes. Field trials were conducted in Quarter 1 and 2 two on brassicas and leafy vegetables to assess how bait granules interacted with crops and to measure any chemical residues. Quarter 3 work focussed on residue testing and data analysis to inform preparation of a submission to the APVMA. Availability of resources in Quarter 4 impacted progress of investigations affecting sample size required by the APVMA. Work supporting permit changes to ease restrictions for treatment of crops is planned to continue in 2022−23.

### Testing of alternative treatment products

Following a promising pilot trial conducted in Quarter 2, further field evaluations of a newly registered fire ant treatment commenced in Quarter 3. The product DeadAnt, an ant-sand treatment containing 0.25 g/kg fipronil is not restricted to licensed Pest Management Technicians. Registered for non-specialist use, it is most likely to be suitable for cost-effective spot treatment of individual nests and may be able to provide longer-term residual control in small areas such as residential yards. The product is composed of sand grains coated with fipronil, a persistent contact insecticide; does not require ingestion to be effective and is likely to be more effective than standard fire ant baits when applied under wetter conditions. Evaluation continued in Quarter 4 with collection of more data and further analyses. If DeadAnt's performance is deemed to be effective, it is expected to be useful for both the program and community self-treatment, and potentially address some of the treatment barriers associated with wet weather.

### Collaborating for the development of eDNA surveillance tools

A methodology for use of eDNA (environmental DNA) analytical tools in monitoring and surveillance activities is being developed in consultation with James Cook University, the University of Canberra and the Department of Agriculture, Water and the Environment Biosecurity Innovations Team. The proposed eDNA analytical method is aimed at 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. Using samples previously provided by the program, our collaborators continued work through Quarter 3 on proof-of-concept research for the real-world application of a fire ant specific eDNA assay. Work continued in Quarter 4, with development of formal arrangements for sample sharing with the collaborators and exploration of Australian Research Council funding for the project. If successful, this technology may be a beneficial addition to existing surveillance methods and tools for detecting fire ants.

### Triaging of samples for genetic testing

The number of samples collected annually for genetic analysis dramatically increased over the last few years, outstripping the testing capacity and resulted in a backlog of samples. As testing capacity could not be increased without additional resources, a need was identified to optimise sample collection and processing to reduce the backlog without impacting the quality of the results. Recent work by the program's genetics team showed that samples collected within 25m of a nest previously sampled within 12 months were able to be omitted without affecting the quality of genetic analysis. This triaging method has since been applied to the backlog of samples held by the laboratory. The next stage of the project, aimed at reducing the number of field samples taken, is to integrate a set of rules dictating sample collection into the FORAGE system used by field staff. This work with the program's Systems and Intelligence unit has continued through Quarter 4 with delivery anticipated later in 2022.

### Development of drones for treatment and surveillance

Advances in Remotely Piloted Aircraft (RPA) capabilities have presented solutions for both treatment and surveillance of fire ants, particularly with the elimination of gaps in broadcast treatment, validation of predictions from Remote Surveillance Systems and targeted treatment using artificially intelligent mobile platforms. The goal of the Drone Research Project is to investigate and implement the use of RPA and other remotely operated platforms to complement the program's current treatment and surveillance methods. The project was revisited in early 2022 and to date has involved research of available solutions and applications, clarification of privacy and data handling requirements and determination of a pool of suitable external service providers.

In Quarter 4, the project entered the pre-tender stage of inviting companies to perform field trials of the available technology. These trials will inform selection of operators for the program to partner with in further development of applications and processes. Work during the 2022 surveillance season will clarify the best uses for drone technology and inform development of operational procedures, with the aim of introducing RPA as part of surveillance and treatment delivery in the 2022−23 treatment season.

# 8. Governance and accountability

### Steering Committee

The Steering Committee held its 20th quarterly meeting on 25 May 2022 in Brisbane. The program provided an overview of planning for scale-up to the levels proposed by the 2022−23 Work Plan including challenges relating to staffing, procurement and the Fire Ant Suppression Taskforce (FAST). Details of severe weather impacts on Quarter 4 treatment activities were provided. Steering Committee discussion centred on financial position, Governance, Fire Ant Suppression Taskforce developments, the National RIFA Response Strategy 2023-27 and program operational activities. Activities discussed included surveillance and treatment, remote sensing surveillance, detections of importance, treatment gaps, movement controls and self-management projects. The Risk Management Sub-Committee and the Scientific Advisory Group provided updates on topics discussed at their meetings.

### Scientific Advisory Group (SAG)

The Scientific Advisory Group (SAG) met on 20 April 2022 via teleconference and received a program update highlighting challenges associated with scale-up of operations recommended by the 2021 Strategic Review. Discussions focussed on the level of treatment to be undertaken by the Fire Ant Suppression Taskforce (FAST) in the Suppression Area, the reviewed Treatment and Surveillance Principles, results of broadscale toxicant baiting trials at Area 2 monitoring sites, drone technology and advances in eDNA technology relating to Yellow Crazy Ants.

### Risk Management Sub-Committee (RMSC)

The eighth meeting of the Risk Management Sub-Committee (RMSC) took place on 22 March 2022. The meeting focussed on the scaling up of the program in 2022−23, and the Strategic Review recommendation that Queensland entities invest additional funding to undertake suppression activities east of the eradication area, which resulted in formation of the Queensland Fire Ant Suppression Taskforce (QFAST). The Business Improvement Register, Risk and Issues Register and summary reports were discussed, along with the challenges of funding arrangements, sole supplier arrangements, reliance on remote sensing surveillance and the multiple procurement strategies in place for Remote Sensing Surveillance including contracts for services and cameras. It was noted that update of the program's risk management policy and plan will be discussed at the September 2022 meeting.

### COVID−19 impacts

Queensland's COVID−19 Economic Recovery Plan has created a tight labour market, which impacted the program's ability to retain field workforce. Competing for workers in the current economic climate of low unemployment, with conditions of casual pay rates and hours reduced by wet weather and winter layoff, has been challenging.

Regular updates are provided to staff on mandatory requirements and safeguards specific to the program such as instructions for sharing vehicles. The vigilance of program management in ensuring staff safety is reflected in the program's small number of positive COVID−19 cases, totalling twenty-four in 2021−22. This represents less than 7% of the workforce for Quarter 4, whereas an estimated 24.6% of Queensland's population was COVID−19 positive on 30 June 2022. Existing DAF workers – employees, contractors and other workers – are required to be vaccinated against COVID−19, observe guidelines for wearing masks and isolate for seven days. Queensland Government COVID−19 requirements will be reviewed on 9 September 2022.

## Risk management

***Table 10: High risks to the program 2021–22***

<table>
<tr><th colspan="4">High Risk information</th></tr>
<tr><th>Risk Type</th><th>Description</th><th>Controls</th><th>Response</th></tr>
<tr><td>Strategic</td><td>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.</td><td>▪ Contingency planning to ensure appropriate targeted surveillance/treatment is undertaken following a significant climatic event.<br>▪ Pre-planning including infestation assessment, genetic tracing, spatial analysis.</td><td>▪ Reprioritisation of planned suppression treatment to limit the risk of spread along water courses.<br>▪ Flooding contingency fund.<br>▪ Flood modelling and responsive planning.</td></tr>
<tr><td colspan="4">Mitigation<br>▪ A risk analysis (What risk does flooding pose to the South East Queensland (SEQ) Fire Ant Eradication Program?) was completed in the aftermath of extreme rainfall and devastating floods which impacted the SEQ operational area in late February/early March 2022. Analysis concluded risk of fire ant dispersal outside the known area of infestation was unlikely due to the high flow rate, turbulence and easterly direction of flooded river systems. The risk of re-establishment where low flow rates may have allowed successful rafting was mitigated in Quarter 4 by surveillance and treatment in localised areas. At risk-areas identified have been included in the 2022−23 Surveillance Plan.<br>▪ The extreme wet weather events impacted the program’s treatment activities in Overlaps and Area 2 due to lost man hours caused by heavy rainfall and/or ground conditions along with road closures hindering access to treatment areas. This was offset by prioritising treatment in Area 1 and in Significant Detection treatment areas. Above median rainfall is expected across SEQ late in 2022.</td></tr>
<tr><td>Strategic</td><td>The timing of national cost sharing funding does not align to the treatment strategy</td><td>▪ Establishment of collaborative funding agreements with states and territories and National Partnership<br>▪ Agreement with Commonwealth. Review of budget occurs regularly.</td><td>▪ Approach QLD and Commonwealth Treasury to secure drawdown of additional funds when required.<br>▪ Ensure funding partners have a full understanding of the success, activities, and concerns of the program. Regular reporting arrangements in place. Review statement.</td></tr>
<tr><td colspan="4">Mitigation<br>▪ The 2021 NRIFAEP Strategic Review proposed an option for a larger, more comprehensive and ultimately more expensive program for continuing eradication of fire ants in SEQ. In 2021−22, the program requested funding partners bring forward funding to support significant scale-up of program activities in 2022−23.</td></tr>
</table>

<table>
<tr><th colspan="4">High Risk information</th></tr>
<tr><th>Risk Type</th><th>Description</th><th>Controls</th><th>Response</th></tr>
<tr><td>Operational</td><td>Risk to capability: Information systems are ineffective at supporting increased scope of National Program and demand for timely and accurate performance data, which can arise from poor functionality or data integrity due to data entry, programming, configuration errors, viruses or incorrect business logic.</td><td>▪ Resources dedicated to developing the program's existing information systems to improve efficiency and accuracy of data entry and reporting.<br>▪ Server performance monitoring.<br>▪ Ability to upgrade if required.</td><td>▪ Information systems to undergo continual improvement.<br>▪ Review of existing systems technology and current business processes to ensure best fit solutions are implemented.<br>▪ Continually review performance and recommend upgrades accordingly.</td></tr>
<tr><td colspan="4">Mitigation<br>▪ Systems and Intelligence continued to support the program’s business processes within fiscal constraints across a wide range of applications. In Quarter 4 work continued on integration of rules stipulating sample collection for polygyne testing into the FORAGE system used by field staff. This will significantly improve lag time between sample collection and testing.</td></tr>
<tr><td>Operational</td><td>Risk to eradication: 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.</td><td>▪ The self-management program is divided into a number of sub-programs to better meet the needs of each target group.<br>▪ Improvements to baiting options available to landowners and industry.</td><td>▪ Ongoing refinement and adjustment will be undertaken to meet the needs to consumers and industry sectors.<br>▪ Coordination with high-density suppression treatment will also be undertaken to ensure the self-management projects are effective as possible.</td></tr>
<tr><td colspan="4">Mitigation<br>▪ Residents in suppression-treatment suburbs were offered the opportunity to self-treat their backyards while program staff treated more accessible areas. This resulted in timely whole-of-area treatment and increased the area able to be treated by program staff in high density residential areas. The provision of bait in shakers enabled bait to be distributed in cost-effective quantities suitable for residential landholdings and resulted in good take-up by residents offered this option.<br>▪ The program engaged with industry and conducted trials to investigate the efficacy of a new ant sand treatment product. Trial results of the fipronil based product will be examined against the action of fast-acting insecticide and insect growth regulator (IGR). The ant sand offers an alternative treatment to corn grit-based bait with the potential to be more effective in wet weather conditions.</td></tr>
</table>

# 9. People and culture

## Workplace health and safety

The program received 41 Workplace Health and Safety (WH&S) incident reports during Quarter 4 compared to 54 in the previous quarter. Incidents were mainly slips, trips, and falls due to rough terrain and overgrown vegetation obscuring hazards. The lower number of incidents in Quarter 4 is a result of some improvement in accessibility as properties started to dry up following a period of unprecedented rainfall in Quarter 3, during which the number of incidents increased substantially. Some farmers and occupants were able to mow their properties, decreasing the risks of slips, trips, and falls and snake interactions for field staff. Team leaders are being more vigilant when entering affected properties to ensure team safety. Property damage resulted mainly from fleet vehicles getting stuck off-road or driving over semi-hidden irrigation pipes or sprinklers, with damaged bumpers and chipped windscreens being the most common. The program will remain vigilant in its priorities of reducing risk of harm to ensure the safety of field officers and investigating the best ways possible to decrease the number of incidents. In conjunction with the new training department, more specific training programs along with refresher courses and toolbox talks on various hazards and risks were introduced. WH&S continue to maintain open dialogue with Health and Safety Representatives and Team Leaders from all depots.

***Table 11: Workplace health and safety incidents 2021−22***

| Category | Q1 | Q2 | Q3 | Q4 | Total |
|---|---|---|---|---|---|
| Hazards | 19 | 7 | 29 | 24 | 79 |
| Near miss | 6 | 0 | 6 | 2 | 14 |
| Property damage | 11 | 12 | 19 | 15 | 57 |
| Totals | 36 | 19 | 54 | 41 | 150 |

The program engages with the approved recruitment agencies to increase the number of field contractors for the treatment season which typically commences in Quarter 1, in line with the increased number of human resources required to deliver the treatment plan as opposed to surveillance.

***Table 12: Staff numbers 2021–22***

| Position | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|
| **Permanent** | 90 | 79 | 79 | 85 |
| **Temporary** | 39 | 33 | 32 | 23 |
| **Contractor—office** | 29 | 29 | 27 | 19 |

| Position | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|
| **Contractor—field** | 247 | 230 | 246 | 223 |
| **Total** | 405 | 371 | 384 | 350 |

# 10. Finance

The 2021–22 initial budget build for the program was $33.3 million above the program fiscal limit. Queensland requested from all cost share partners necessary funding to be brought forward from future years. Queensland received letters by the end of the period indicating agreement from the Northern Territory ($221K), Tasmania ($246K), Victoria ($4.51M), NSW ($5.78M), WA ($2.34M) and the Commonwealth ($18.38M). This provided the program with a total budget of $64.9M comprised of the agreed funding including additional bring forwards approved by cost share partners and an additional $31K from gains on sale of old assets.

## Expenditure to budget

The program incurred an underspend of $6.26M against the $64.89M budget. The overall variance includes underspends in Operations $5.05M, Self-Management Treatment $1.17M, Information Services $613K, Science $475K, Strategy, Policy, and Performance $282K, Business Support $275K, Planning and Quality Management $183K and Directorate $153K.

***Table 13: Expenditure to budget***

| Note | Program Area | Full Year Budget $ | Full Year Actual $ | Variance $ |
|---|---|---|---|---|
| 1 | Program logistics and business support | 4,138,114 | 3,862,979 | -275,136 |
| 2 | Remote Sensing Surveillance (R&D) | 3,842,267 | 3,979,217 | 136,950 |
| 3 | Systems and technology innovation | 2,756,251 | 2,143,259 | -612,992 |
| 4 | Community and stakeholder engagement | 2,431,988 | 2,399,291 | -32,697 |
| 5 | Science services and eradication assessment | 2,963,197 | 2,488,487 | -474,710 |

| Note | Program Area | Full Year Budget $ | Full Year Actual $ | Variance $ |
|---|---|---|---|---|
| 6 | Planning and quality assurance | 2,786,626 | 2,603,111 | -183,515 |
| 7 | Operations | 43,069,151 | 38,022,541 | -5 046,610 |
| 8 | Directorate | 1,462,522 | 1,334,126 | -128,396 |
| 9 | Self-management | 1,500,857 | 328,892 | -1,171,964 |
| 10 | Strategic policy and performance | 928,130 | 646,176 | -281,954 |
| 11 | SEQ program balance | -986,993 | 820,898 | 1,807,891 |
| | Total | 64,892,110 | 58,628,977 | -6,263,133 |

**Notes: Expenditure to Budget**

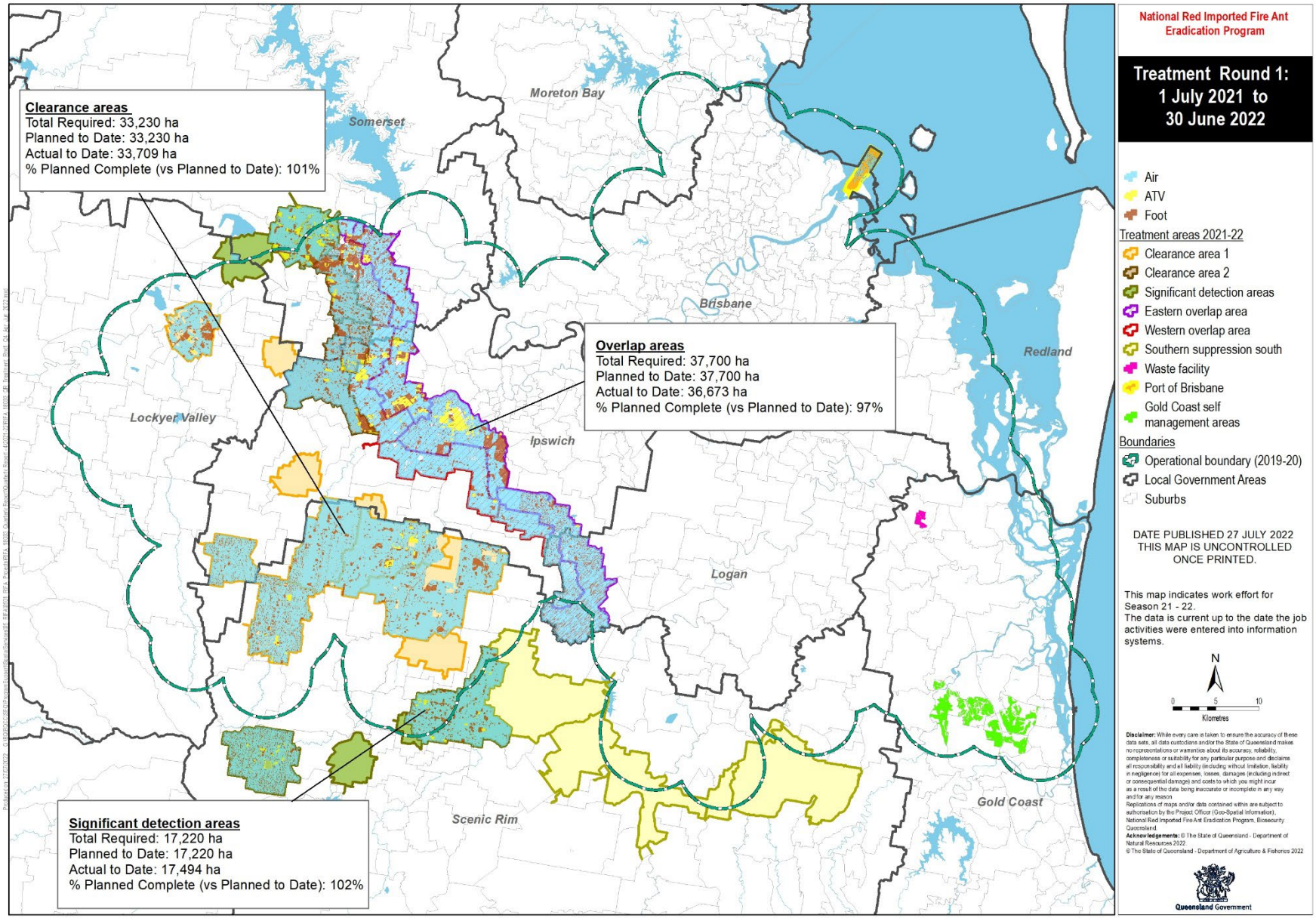
1. Favourable variance mainly due to underspend on property facilities and building expenses $151K, delay in recruitment of office contractors $83K, training expense $48K, PPE Expense $68k and offset by overspend in employee expense due to unbudgeted Business Service Manager position and saving from unfilled WHS Officer position $37K.
2. Unfavourable variance mainly due to overspend on remote sensing expenses $168K and aircraft Hire $68K, as May and June 2022 were not budgeted, and unbudgeted contractor expense $69K. The overspend is offset by underspend from unused Data storage budget $44K, unspent budget on gate review expense $75K, lower than expected expense for RSS Field worker $34K and delayed replacement for RSS computer $6K.
3. Favourable variance is due to saving in ICT Discretionary Services expense caused by shortage of System Developer $834k and contractor expenses savings $31K. This underspend is offset by higher than budgeted application charges for Fire Ants Management System within October to June period $235K and overspend in employee expenses $30K.
4. Favourable variance due to underspend in contractor expense $99K, cancellation of Hackathon event $14K, underspend in signage expense $20K and SEQ Awareness Marketing expense $30K. This underspend is offset by overspend in campaign expense $96K, design and printing cost $11K, employee expenses $27K and unbudgeted training expense $8K.
5. Favourable variance due to unused Bait Research project budget $50K and Drone Research Project budget $50K, underspend on lab consumables $23K, savings on depreciation expense caused by delay on Genetic Analyser purchased $35K and savings from salary expense due to vacant positions across science $324K. The underspend is offset by unbudgeted lab equipment purchase $12K.

6. Favourable variance mainly represents $139K underspend in contractor expenses due to less contractors engaged, $53K in ESRI; GIS; SISP annual license subscription and further $17K underspend across various operating activities such as repairs and maintenance, office supplies and computer purchases. The underspend is partially offset by $35K overspend in employee expenses due to an agency contractor temporarily appointed to the Program.
7. The favourable variance consists of underspend in bait expense $2.9M due to saving strategy to reduce aerial baiting to 1.8 Kg/ha and underspend of field contractor expense $1.28M which reflected the total treatment was below treatment plan target. Other underspends were savings in employee expense $452K due to vacant positions across operations, with some positions replaced by contractors, savings in motor vehicle related expenses $10K, office contractor expense $224K and unused budget for new odour detection dog purchase $30K. The underspend is partially offset by overspend due to internal charges for Remote Sensing Surveillance field staff being less than the budgeted $34K and aircraft hire expense due to cost increase in September 2021 $44K.
8. Favourable variance mainly due to unspent budgeted financial audit caused by procurement delay $150k, underspend on travel, accommodation and catering cost for Risk Management Sub Committee and Science Advisory Group chair (SAG) $22K and waiver on SAG Chair cost $20K. This underspend is offset by employee related expense due to backfilling of vacant positions due to rec leave, backpay for SO level in July $31K, unbudgeted payment for contractor expense (Senior Management Change Officer) $49K, unbudgeted hiring fee for Ramp Up Project Manager $25K and HR case review consultant payment $10K.
9. Favourable variance mainly due to early cessation of self-treatment plan. This caused underspend in contractor expense $222K, bait expense $730K, delay on campaign expense charges from corporate communication $138K and cancelation of Self-Management Online training and SMS Messaging $70K. This underspend is partially offset by unbudgeted expense on bait postage $27K.
10. Favourable variance mainly due to underspend in contractor expense $65K resulting from unfilled Principal Policy Officer (AO7) and Policy Officer (AO4) contractor positions, savings in employee expense due to vacant position of Manager policy and Senior Policy Officer $126K, unspent training expenses $26K and a savings on Professional (Technical) consultancy $50K.

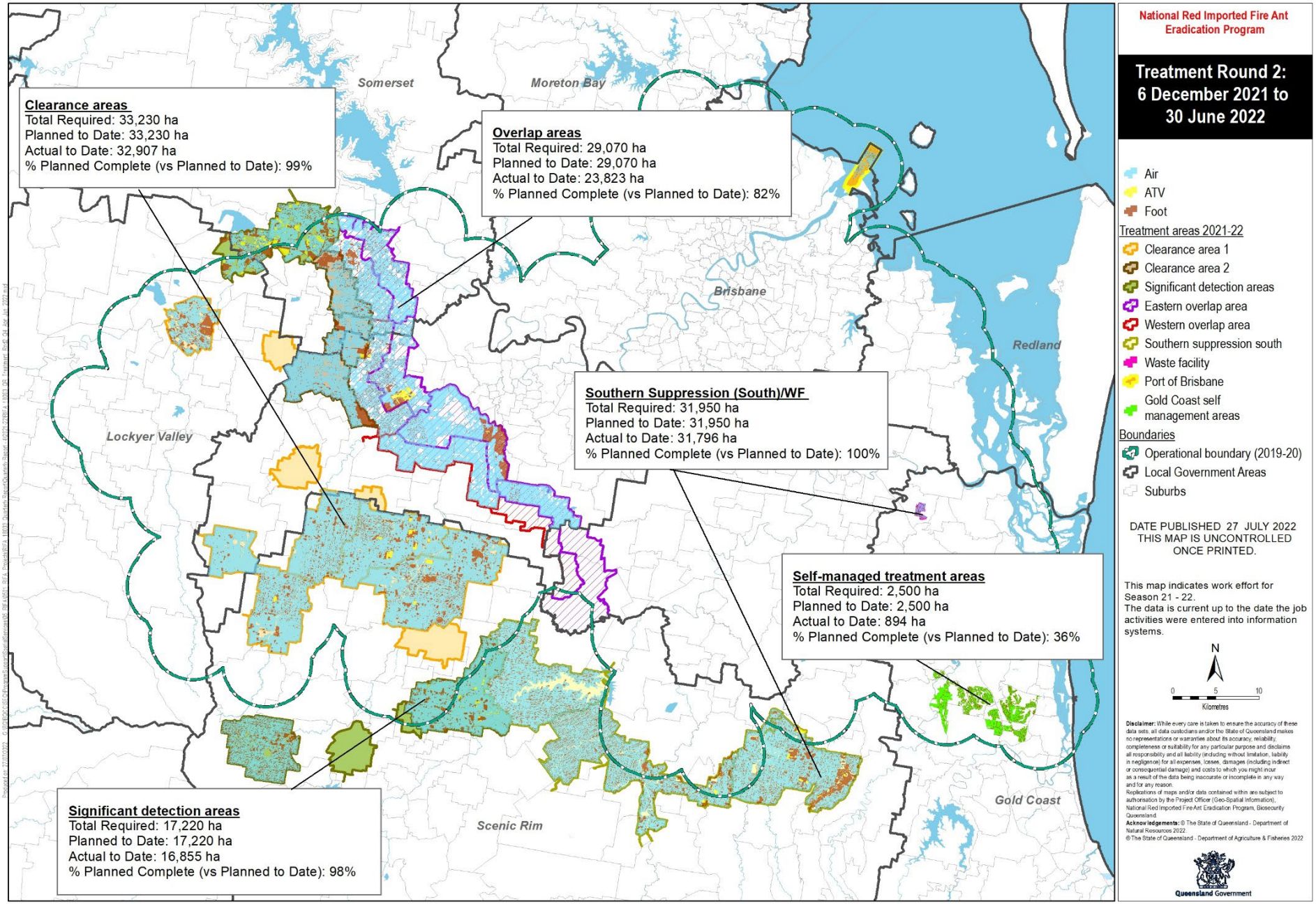
# Appendices

(see over page)

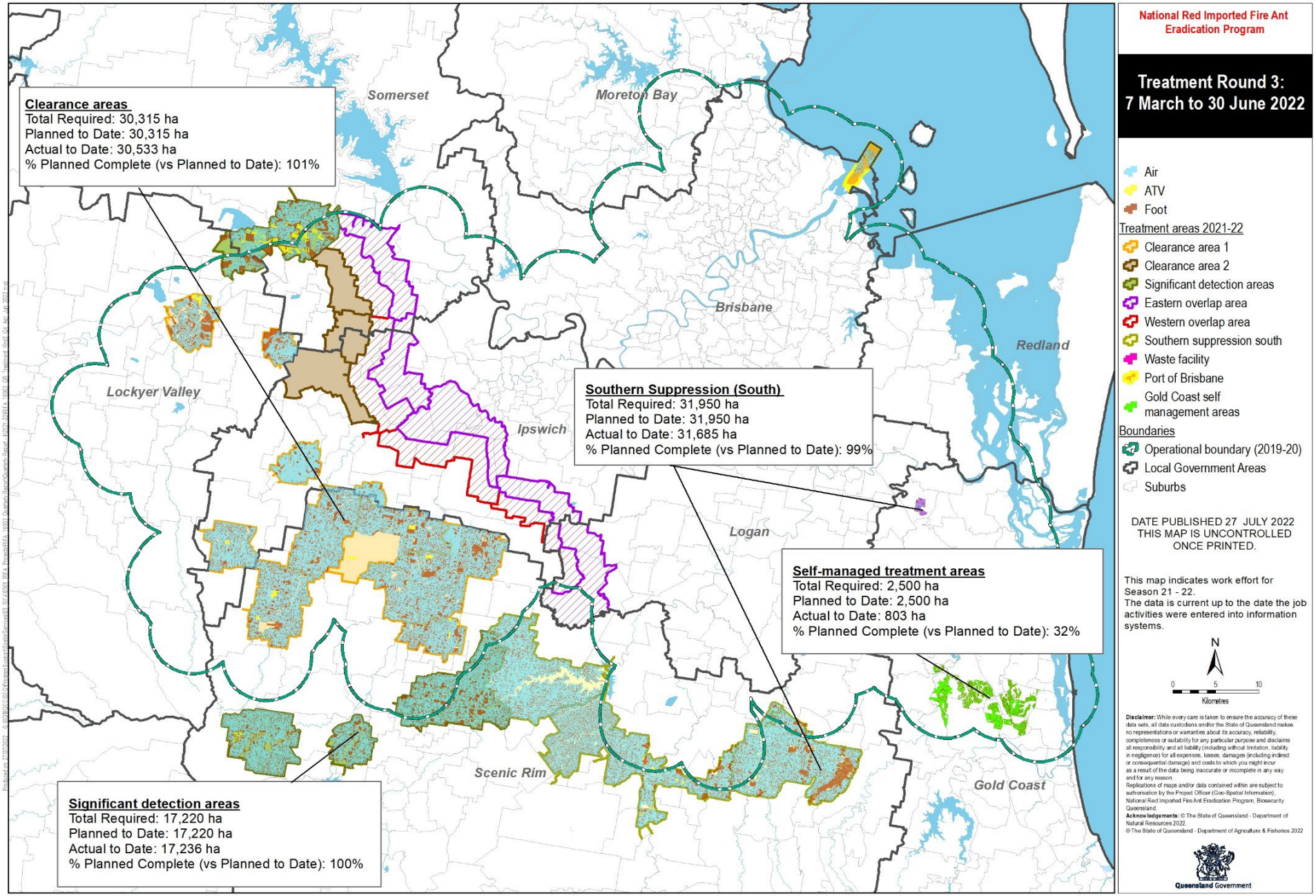
## Appendix 1A—Planned treatment progress as of 30 June 2022 (Round 1)



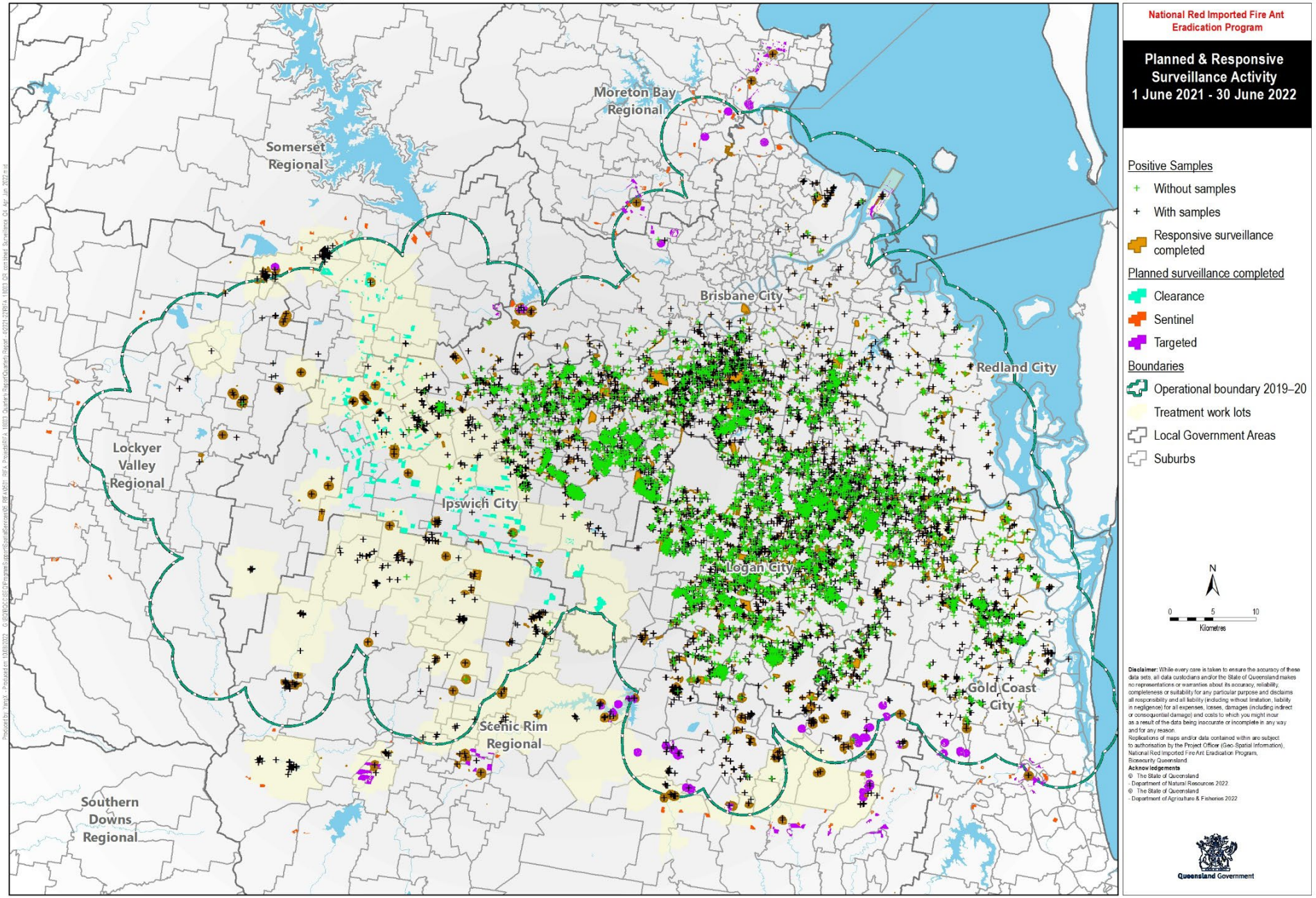
## Appendix 1B—Planned treatment progress as of 30 June 2022 (Round 2)



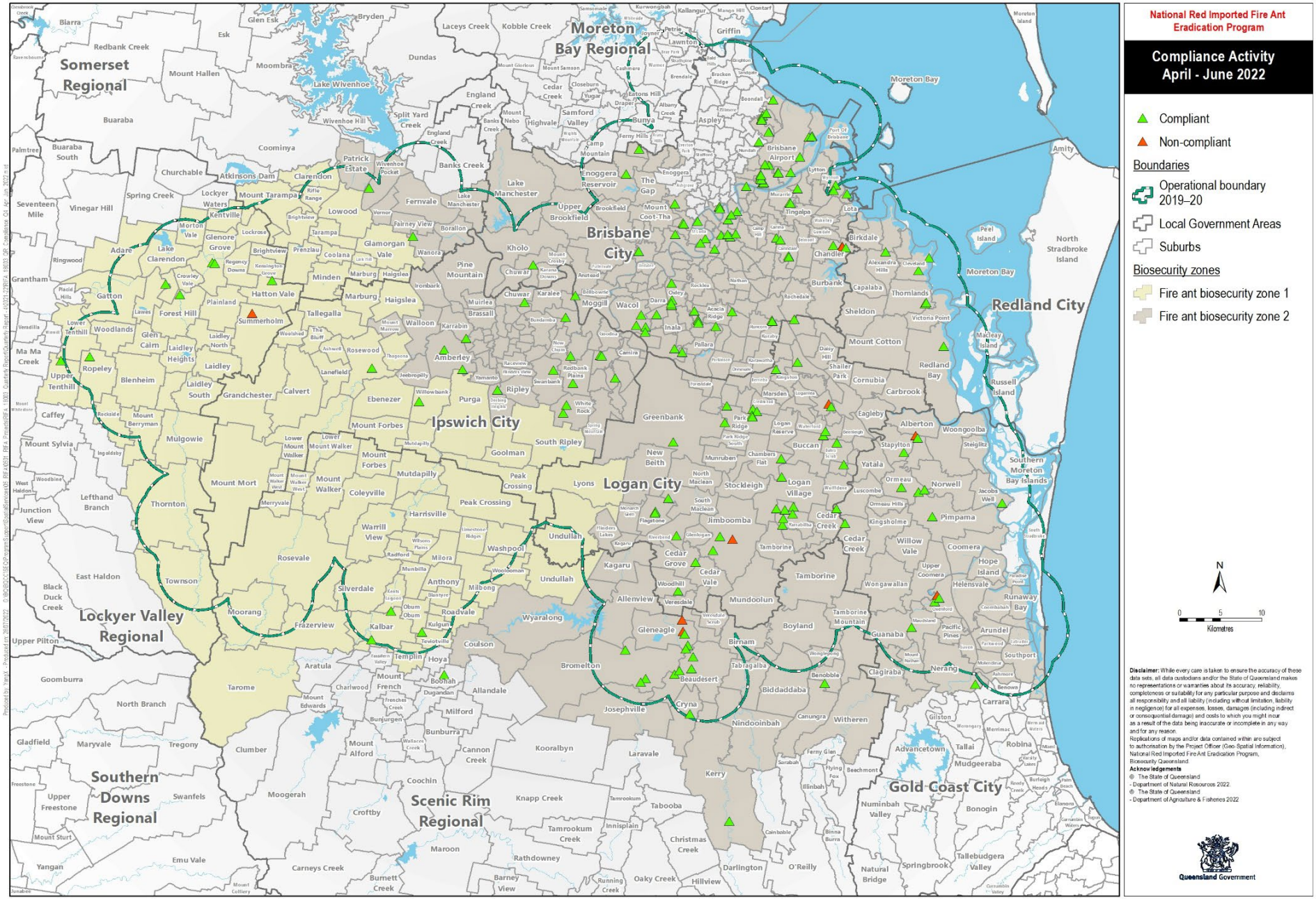
## Appendix 1C—Planned treatment progress as of 30 June 2022 (Round 3)



## Appendix 2—Responsive and planned surveillance progress as of 30 June 2022



## Appendix 3—Compliance activity in Quarter 4 2021–22



## Appendix 4—Detections of importance in Quarter 4 2021–22