

30 November 2023

Committee Secretary
Senate Standing Committees on Rural and Regional Affairs and Transport
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Parliament House
Canberra ACT 2600
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To Senate Committee members and Secretariat,

RE: Submission to the inquiry on red imported fire ants in Australia.

As a qualified entomologist and retired agricultural policy officer, based in south east Queensland, I would like to highlight the following responses to the six categories within the Senate Committee inquiry.

A. Expected costs and impacts of fire ants to Australia, if they spread.

According to the 2021 fire ant program strategic review¹, impact and control of fire ants by 2030 could cost \$2 billion annually, along with 140,000 medical consultations and 3,000 anaphylactic reactions in humans, if fire ants continue to spread across Australia.

B. Assess current and proposed fire ant response plans

B.1 Regulations do not align with risk

In certain situations, imposed carrier movement regulations do not reflect fire ant risk. For example, the pot plant nursery trade has strict and costly third-party biosecurity officer inspections for moving nursery plant stock interstate. Fire ant detection and risk has been extremely low in the plant nursery industry. In contrast, there is assumed General Biosecurity Obligation and self-regulation for earth moving and property development sites (Sections 67 to 73, Biosecurity Regulation 2016²). Many of the fire ant nest detections across south east Queensland have been associated with disturbed sites amongst new housing estates and developments, as per interactive fire ant map <https://www.fireants.org.au/fireantmap>, and not from plant nurseries and landscape material suppliers.

Commercial hay producers in the fire ant biosecurity zone are required to chemically treat around hay storage facilities every three months and keep hay covered (Section 71, Biosecurity Regulation 2016³). In contrast, horse owners storing hay, mulch and green waste operators have no similar biosecurity regulatory requirement. The fire ant program has not publicly shared the scientific evidence associated with determining risk from these different sources of organic material.

¹ Scott-Orr H, Gruber M, Zacharin W. 2021. National Red Imported Fire Ant Eradication Program Strategic Review. Advisory report for the Steering Committee. Queensland Government. 96pp.
<https://www.agriculture.gov.au/biosecurity-trade/policy/partnerships/rifa-eradication/strategic-program-review>

² Queensland Biosecurity Regulation 2016, Sections 67 to 73
<https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2016-0075#ch.5-pt.5-div.2>

³ Queensland Biosecurity Regulation 2016, Section 71
<https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2016-0075#sec.71>

Urban landholders and tenants are able to access free fire ant baits, whereas commercial farmers have to supply and treat areas with fire ant bait and insecticide barriers, at their own expense. It can cost commercial hay producers at least \$1,500 every three months for labour and materials to apply insecticide barriers around stored hay facilities, as per specifications in the Biosecurity Regulation 2016 and the state government's legal obligations for hay management⁴.

B.2 Gaps in the baiting program across western shires in southeast Queensland

Since 2018, the 10-year eradication program implemented three rounds of bait over nine months each year to infested areas across the Lockyer Valley, Ipswich and Scenic Rim Regional Council areas.

Potential gaps in baited areas occurred, due to some land managers and residents refusing treatment of their property because of their personal values or loss of organic produce certification or horticultural crops requiring harvesting or washing before baits could be applied. Absentee land owners also posed a glitch for treating infested areas in some regions.

Baits could not be laid during rainfall. The above average wet season in 2021/2022 posed a setback for the eradication program. Fire ant staff and contractors engaged in ground and aerial bait application still required payment for their work hours on wet days.

Program budgets blew out during the initial response to human COVID in 2019, when departmental field staff were only allowed to travel with one departmental staff member per vehicle.

B.3 Initial lack of connection with pest management and agricultural industries

The response plan from 2017 onwards relied on employed staff within Biosecurity Queensland and limited engagement of services from commercial pest management operators and commercial laboratories. The wealth of knowledge, expertise and networks from the commercial pest management sector was ignored.

Improved consultation, engagement and communication with broadacre agricultural industries for cattle, grain and hay commenced after the Department of Agriculture and Fisheries Director General Bob Gee seconded Regional Director Andrew Langford to the fire ant strategy and science team in mid-2022.

B.4 Issues with the suppression zone concept in the Response Plan.

In 2022, the fire ant response plan was segregated into the eradication and suppression zone. Queensland Government negotiated roles and responsibilities with affected local governments and other stakeholders in the Fire Ant Suppression Program FAST. Under Queensland's *Biosecurity Act 2014*, fire ants are Class 1 Restricted Matter and the responsibility of Queensland Government, not local government.

Issues with FAST include:-

- (a) Local Governments do not have sufficient resources nor staff with Pest Management Technician qualifications for applying fire ant baits and insecticides onto private and public

⁴ Queensland Government, 2021. Legal obligations - Hay management
<https://www.fireants.org.au/treat/business-and-industry/materials-that-can-carry-fire-ants/hay-management#storing-hay>

property. Their staff are predominantly Commercial Operators for applying herbicides for weed management.

- (b) Fire ant treatment in the suppression zone by landholders and tenants is optional and adhoc.
- (c) General lack of understanding of General Biosecurity Obligation GBO by urban, peri-urban communities and hobby farmers.
- (d) Untreated fire ant nests in the suppression zone are a source of infection to new areas.
- (e) Serious disconnect between management and scientists within the National Fire Ant Program and no expert scientists involved in strategic planning.
- (f) Lack of containment programs to the north and south of the biosecurity zone has resulted in unexpected fire ant spread to these new areas.

B.5 Improving the science for fire ant detection

Since being first detected in Queensland in 2001, the fire ant eradication program used surveillance methods such as field teams, three pheromone odour detection dogs, remote sensing and community reporting.

For the last two years, agricultural industry has suggested trialling environmental-DNA technology for rapid detection of fire ants in the landscape or carrier products such as hay or soil. AgEtal is a commercial seed and grain agricultural testing laboratory (<https://www.agetal.com.au>) in Toowoomba, Queensland that can detect fire ants using e-DNA LAMP assay methodology. All approaches to advance this e-DNA surveillance technology with this commercial laboratory was dismissed by fire ant management in 2022 and 2023, while they awaited slow research progress from a Sydney University utilising a different e-DNA methodology.

If eradication is the focus, all avenues to detect and destroy fire ants should be promptly investigated and activated. A broad, collaborative strategic research program, including e-DNA surveillance with agencies with demonstrated effectiveness was previously recommended in the 2021 Strategic Review⁵.

B.6 Lack of communication and awareness amongst community

Many community members in urban and peri-urban landscapes are not aware everyone has a general biosecurity obligation GBO. Many do not know about movement restrictions on potential fire ant carriers such as soil, pot plants, turf and uncovered mulch. There has been limited interaction with the recreational equine industry about regulations for hay and lucerne movement and storage at properties and equine events.

Prior to late 2022, there was insufficient awareness and signage within the fire ant biosecurity zones and suburbs / regions of high risk to inform the general public of their general biosecurity obligation for managing fire ants. The departmental directive to move towards digital and online communication and move away from printed factsheets, letters, roadside signage created a major deficit in community awareness. General awareness across the wider community only commenced when fire ants started to invade the Gold Coast tourist strip in 2023 and media started to highlight the risk to tourism and the future Olympic Games.

⁵ Scott-Orr H, Gruber M, Zacharin W. 2021. National Red Imported Fire Ant Eradication Program Strategic Review. Advisory report for the Steering Committee. Queensland Government. Recommendation 25 on pages 86 and 87. <https://www.agriculture.gov.au/biosecurity-trade/policy/partnerships/rifa-eradication/strategic-program-review>

C. Evaluation of funding for current & proposed fire ant response plans

- 2001 to 2017: \$367million over 16 years – from the Queensland Government.
- 2017 to 2027. \$411.4million over 10 years for the national eradication program⁶. Agreed at the Agricultural Ministers Forum AGMIN, with Queensland Government contributing 10 per cent of funding to the program.
- 2023 to 2027. \$238million over four years – from the Australian Government⁷.

D. Effectiveness of eradication efforts and spread of fire ants

D.1 Eradication

Since 2017, the \$411.4 million decade-long eradication program has failed to reduce or contain the infested area. The biosecurity zone for fire ants has continually increased over the over the last eight years, from 2014 to 2022 (Appendix 1 maps). New nest outbreaks have occurred outside the biosecurity zone, resulting in a transition from annual to monthly updates to the biosecurity zone, commencing in December 2023. Fire ant bait treatment areas have increased annually from 2016 to 2021 (Table 1).

Table 1. Treatment areas for fire ant baits conducted by the national fire ant eradication program

Year	Treatment area for baits (ha)
2016	100,000
2017	250,000
2020	305,000
2021	435,000

If the extent of an invasive pest cannot be delimited, it is extremely difficult and potentially not feasible to eradicate. The efforts of the national fire ant eradication program have suppressed the spread of fire ants across Queensland and Australia. However, effectiveness towards eradication is questioned and becoming increasingly unlikely. Will fire ants end up similar to the failed Siam weed and varroa mite eradication programs?

The trigger points for declaring decisions between eradication and containment are not shared publicly. Trust is placed in the national steering committee for fire ant eradication (<https://www.fireants.org.au/home/about-us/about-the-national-steering-committee>) to monitor and evaluate progress, effectiveness and decide if eradication is still feasible.

D.2 Spread

To date, there has been limited sharing of acquired knowledge about fire ant spread pathways across south east Queensland. The expertise amongst staff employed by the program should have traceback and genetic records to ascertain if highest risks are from movement of contaminated carriers, or annual flight of winged fire ants (alates), or spread by floodwaters or other pathways. There are very few departmental compliance officers checking risk pathways, carrier movements and regulated requirements.

⁶ Queensland Government (2017). Media Release. Fire ants on target for destruction. 6 Sept 2017 <https://statements.qld.gov.au/statements/82548> .

⁷ Australian Government (2023). Media Release. Major new federal investment to extend the fire ant fight. 22 Oct 2023. <https://minister.agriculture.gov.au/Watt/media-releases/investment-to-extend-fire-ant-fight>

Worker fire ants cannot start a new colony⁸, only queen ants or developing queen ants from a mature nest. What are the priority spread pathways for developing queen ants to spread?

Fire ants like open, disturbed sites and are easily spread through the movement of infested soil, hay, mulch and potted plants. As summer approaches, a proportion of fire ants develop wings and spread out to establish new nests. They can fly up to five kilometres and also be carried by high winds. Ninety-five per cent of winged fire ants land within two kilometres of the original nest. A queen ant can lay up to 1000 eggs per day over a seven-year period. A fire ant colony matures within 6 to 12 months and starts to develop winged fire ants (alates).

High risk areas include new developments within the last three years, which have been disturbed by excavation, earthworks or vegetation clearing. Nests are often found near water bodies such as dams and lakes.

E. Learnings from varroa mite applicable to fire ants.

The varroa mite response in New South Wales had clear scientific and ecological trigger points to decide when to continue with eradication, or move towards containment. No further comments.

F. Any other related matters

F.1 Delayed release of the 2021 review diminishes public confidence in the eradication program

The two-year delay in releasing the 2021 strategic review of the National Red Imported Fire Ant Eradication Program⁹ and slow response to the 27 recommendations has undermined public confidence and transparency in the Fire Ant Eradication Program. The review indicated eradication was not possible within the current 2017 to 2027 10-Year Plan and recommended major overhauls in governance, communication and compliance.

The review recommended the national eradication program to be exempt from the Queensland Public Sector Full Time Equivalent FTE cap. Program efficiency was reduced due to employing contract staff from employment agencies with high turnover, lower motivation and higher induction and training requirements. This recommendation has not been implemented by the Queensland Government, nor Biosecurity Queensland.

F.2 Recommend fire ants included in pest inspection reports for property sale transactions

A recommendation is to increase surveillance by engaging the real estate sector to check for fire ant nests when conducting property sale transactions. Expand the current pest inspection report for termites and dry wood borers in structural timber to also include fire ant nest detection in house and property yards.

⁸ Fire ants.com. How to kill fire ants, their mounds and queens <https://www.fireants.com/how-to/how-to-kill-fire-ants-mounds-and-queens>

⁹ National Red Imported Fire Ant Eradication Program Strategic Review August 2021: <https://www.agriculture.gov.au/biosecurity-trade/policy/partnerships/rifa-eradication/strategic-program-review> 96pp. Released publicly on 8 June 2023.

F.3 Lack of comprehensive advice on fire ant control options from the national eradication program

Baits, insecticide treatments and chemical barriers

A recommendation is a complete overhaul of control advice on the national fire ant program website. Control options should be comprehensive and list all registered active constituents and available products.

There are 43 insecticides, containing seven active constituents, registered for control of red imported fire ant in Australia, as per the Australian Pesticides and Veterinary Medicines Authority APVMA Pubcris database (Table 2). An additional four active constituents are registered for use, if used as per APVMA Minor Use Permits (Table 2). The National Fire Ant Program website only lists 10 ant bait products containing the three active constituents, pyriproxyfen, hydramethylnon or indoxacarb (<https://www.fireants.org.au/treat/treatment-by-the-program/treatment-types/fire-ant-bait> and <https://www.fireants.org.au/treat/residential-landowner-or-tenant/purchase-and-use-fire-ant-bait/fire-ant-bait-product-guide>). This leads to confusion for landholders and farmers purchasing treatment options from hardware and rural produce outlets, or online agchemical suppliers.

There are limitations to using fire ant baits and other control measures may be required. Baits take one to four months to control a colony of fire ants, where other registered insecticide options can instantly kill fire ants and prevent injury to humans and livestock. Some horticultural crops in contact with bait must be washed after harvesting. Corn grit baits cannot be used where free-range chickens roam. Ants need to eat bait within 6 to 8 hours after application and baits cannot be laid within eight metres of waterways, or applied during rainy weather. Other treatment options should be listed on the fire ant website, since not everyone is familiar with using the APVMA Pubcris and minor use permit databases.

Fipronil granules and liquid can be used for fire ant control. The National Fire Ant website indicates only licensed pest management technicians can use fipronil for direct nest injection (<https://www.fireants.org.au/treat/treatment-by-the-program/treatment-types/direct-nest-injection>). This is not correct. Most fipronil products can be used by everyone, if used as per label.

Bifenthrin is used for treating potted plants, turf farms, landscaping materials, waste soil, hay, straw, as per APVMA Minor Use Permit 14317 <https://permits.apvma.gov.au/PER14317.PDF> . This permit is not listed on the National Fire Ant Program website.

Distance [pyriproxyfen] fire ant baits (APVMA Permit 87728 <https://permits.apvma.gov.au/PER87728.PDF>) are permitted for use by the Australian Organic Industry Standards and Certification Council. This information about compatibility with organic production should be included on the national fire ant website www.fireants.org.au

No fire ant Pestfact on Biosecurity Queensland's website of invasive species

Although there is a dedicated website to fire ants in Queensland (www.fireants.org.au) , there is no Pestfact on Biosecurity Queensland's BQ website <https://www.daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/fact-sheets> . Another missed opportunity for community awareness about biosecurity and the long list of invasive species . There is a BQ Pestfact for the closely related Tropical fire ant (*Solenopsis geminata*) but no Pestfact for the red imported fire ant (*Solenopsis invicta*).

In Conclusion

Please contact me if you require clarification and/or further information on any of the points raised in this submission.

Table 2: Forty three (43) insecticide products, containing seven (7) active constituents, registered for use in Australia for control of red imported fire ant. An additional four active constituents registered for use as per APVMA Minor Use Permits.

Source: APVMA Pubcris database <https://portal.apvma.gov.au/pubcris> and APVMA Minor Use Permits database <https://portal.apvma.gov.au/permits>

ACTIVE CONSTITUENT (Bold) and Product Trade Names and where applicable – APVMA Minor Use Permit number for uses beyond label specifications.

ACETAMIPRID | BIFENTHRIN

Biflex Mikron Insecticide

BIFENTHRIN

ANTAGONIST PRO RESIDUAL INSECTICIDE

COUNTRY BIFENTHRIN SAND INSECTICIDE

APVMA Minor Use Permits 13959, 14317, 90146, 13916

FIPRONIL

ACCENSI FIPRONIL RESIDUAL TERMITICIDE AND INSECTICIDE

Amgrow Patrol Fire Ant Killer Granules

ANTEATER Fire Ant & Nuisance Ants Killer Granules

Anthem Insecticide Granule

COUNTRY FIPRONIL RESIDUAL TERMITICIDE AND INSECTICIDE

David Grays Antex Pro

DAVID GRAYS FIPRONIL 100SC TERMITICIDE AND INSECTICIDE

ENVIROMAX FIPRONIL 100SC TERMITICIDE & INSECTICIDE

Fipforce Dust Termiticide & Insecticide

FIPFORCE HP TERMITICIDE & INSECTICIDE

FIPROSHIELD AQUA TERMITICIDE

Greenzone Fipronil Residual Termiticide & Insecticide

INSTAR GRANULAR INSECTICIDE

Monarch 100 Insecticide

Monarch G Insecticide

Pest Controllers Own Fipronil 100 SC Termiticide & Insecticide

SAS PRO PROFESSIONAL GRANULE ANT KILLER

SHERWOOD ANTHEM 100 INSECTICIDE

SUREFIRE TERMITICIDE AND INSECTICIDE

TERMIDOR FOAM TERMITICIDE & INSECTICIDE

TERMIDOR RESIDUAL TERMITICIDE AND INSECTICIDE

Termi-Force 100SC Termiticide and Insecticide

TERMINADE RESIDUAL TERMITICIDE AND INSECTICIDE

ULTRATHOR X WATER-BASED TERMITICIDE AND INSECTICIDE

HYDRAMETHYLNON

AMDRO GRANULAR ANT BAIT

Topbait Knock-on Ant Bait

HYDRAMETHYLNON | PYRIPROXYFEN

PestXpert DIY Pest Control Like the Professionals Nest Kill Ant bait

SYNERGY ANT BAIT

SYNERGY PRO ANT BAIT

APVMA Minor Use Permit 88626

Table 2. *continued.....*

INDOXACARB

ADVION FIRE ANT BAIT
Sindoxa Ant Gel
Zenithor Gel Ant Bait

INDOXACARB (25:75)

Doxem Precise Insecticide

INDOXACARB (75:25)

ADVION ANT GEL
Attractant PRO ANT GEL

INDOXACARB (75:25) | INDOXACARB (90:10)

ADAMA Indox Clear Ant and Cockroach Gel

LAMBDA-CYHALOTHRIN | THIAMETHOXAM

DEMAND DUO Insecticide

METAFLUMIZONE

SIESTA GRANULAR ANT BAIT

PYRIPROXYFEN

DISTANCE ANT BAIT
DISTANCE PLUS ANT BAIT
APVMA Minor Use Permit 87728

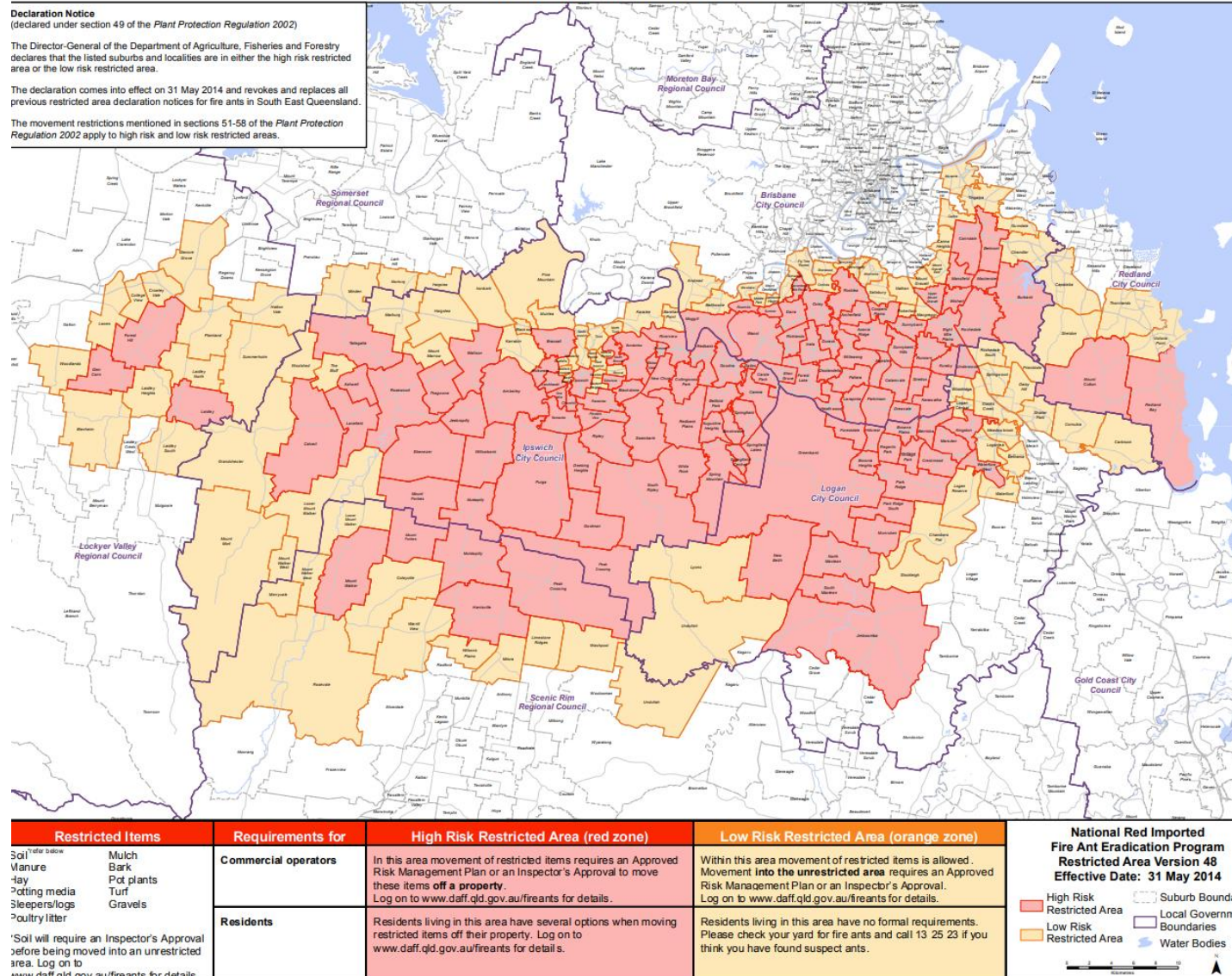
ACTIVE CONSTITUENT (Bold) and APVMA Minor Use Permit Number

- **CHLORPYRIFOS** – APVMA Minor Use Permits 14256, 12242, 84694, 81094
- **BETACYFLUTHRIN** – APVMA Minor Use Permit 89374
- **CYFLUTHRIN** – APVMA Minor Use Permit 12073
- **S-METHOPRENE** – APVMA Minor Use Permit 90213

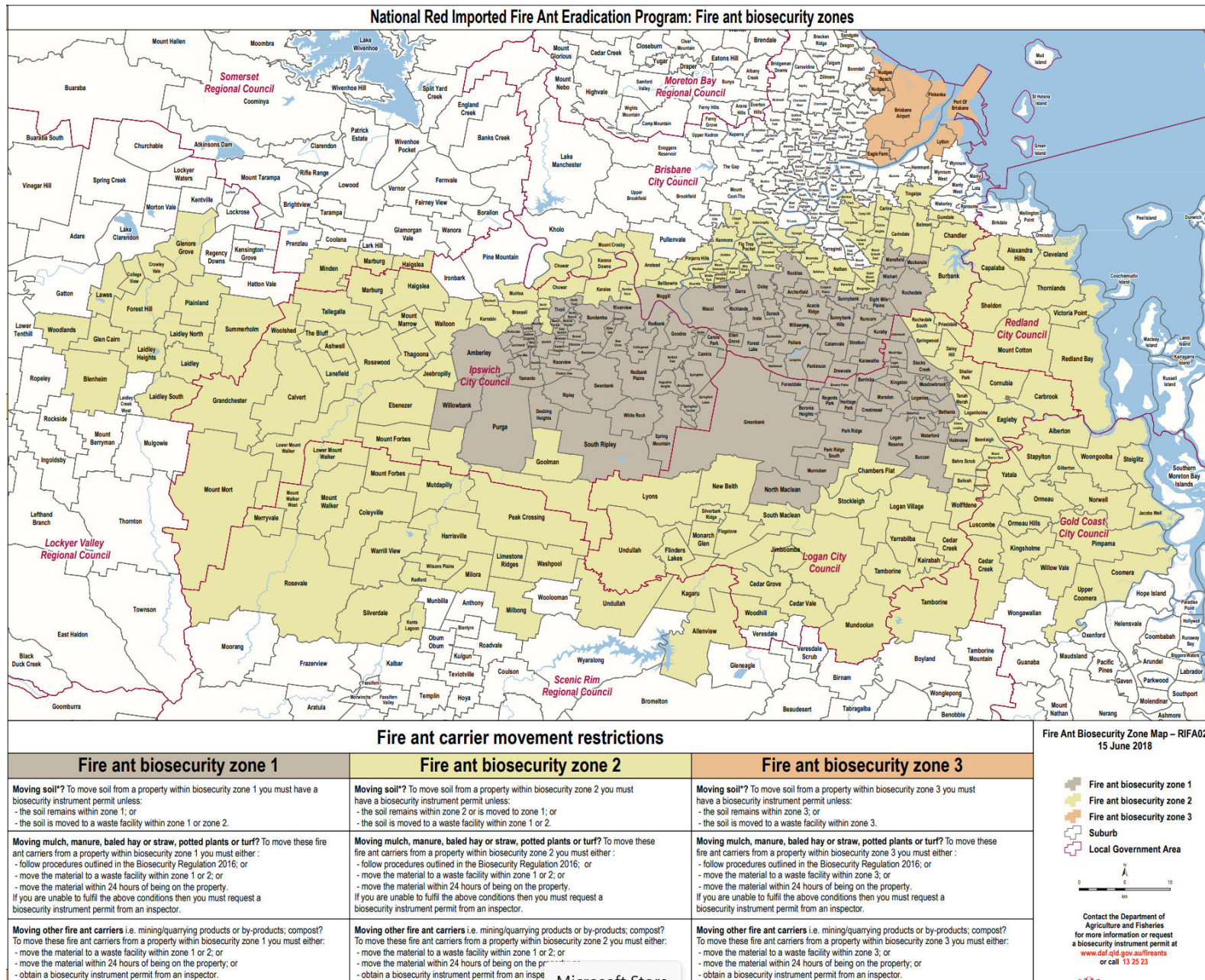
Appendix 1: The area within Queensland's fire ant biosecurity zone has increased substantially over the last eight years between 2014 and 2022. In November 2023, five fire ant nests were detected at Murwillumbah in New South Wales <https://www.dpi.nsw.gov.au/about-us/media-centre/releases/2023/ministerial/red-imported-fire-ants-in-south-murwillumbah-update>. Eradication is difficult, if the extent of an exotic, invasive pest cannot be delimited

2014 biosecurity zone

RED IMPORTED FIRE ANT RESTRICTED AREA DECLARATION NOTICE



2018 fire ant biosecurity zone



2022 fire ant biosecurity zone

