FACT SHEET:
RED FIRE ANTS

UPDATED: June 2024

Australia will avoid a disastrous fire ant future if we commit funding to an effective long-term eradication program.

Red fire ants might be tiny (2-6mm) but their sting and ability to swarm in great numbers makes them a fearsome predator. Photo: April Noble, Antweb.org, Bugwood.org

Species

Fire ant / Red imported fire ant / Solenopsis invicta.

Origin

South America.

Background

Experience and proven tactics have helped contain and suppress Australia's fire ant infestation. This success has occurred against a headwind of uncertain and limited resourcing. Recently containment breaches have resulted in fire ant detections in northern New South Wales and the Murray Darling Basin. These containment breaches show that eradication is the only way to stop their spread.

The impacts of fire ants in Australia will surpass the combined damage done each year by our worst pests: feral cats, wild dogs, foxes, camels, rabbits and cane toads.

Their steady spread means urgent action is needed to turn the tide on Australia's fire ant infestation. Their spread to New South Wales was detected in Murwillumbah in late 2023 and Ballina in early 2024. A significant fire ant detection was found in Oakey in April 2024 marking the first time fire ant nests have been found in the Murray Darling Basin.

About Fire Ants

Fire ants have spread to the United States, China, Taiwan, Japan, the Philippines, Italy and Australia.

They are well adapted to survive cycles of drought and flood and can survive on plant roots and shelter underground or thrive in environments with ample protein sources foraged from other insects and animals.

Fire ants are aggressive and exhibit territorial behavior swarming in large numbers when responding to perceived threats and nest disturbances. They use a combination of bite and repeated venomous stings to attack their targets. Pheromone signals enable the ants to use coordinated stinging responses to tackle larger animals and humans.

Colonies range from a few hundred thousand to millions of individual ants and come in single or multi-queen colony types. Single queen or monogyne colonies spread primarily via nuptial flights with winged reproductive males and females flying hundreds of metres on average to establish new colonies. Multi-queen or polygyne colonies spread through 'budding' when reproductive female ants move a short distance establishing dense colony clusters.

Australia's fire ant infestation has both forms with monogyne colonies being more prevalent.

Ongoing eradication is harming the genetic viability of the Brisbane infestation. Further fire ant infestations from overseas would introduce new genetic variability to Australia's infestation. This must be prevented.

As well as flight and budding, fire ants can reach new locations by forming rafts and floating on floodwaters. However, in Australia fire ants are mainly being spread through accidental movement in human freight.

Invasive Ants

The fire ant is one of at least seven highly invasive ant species that have arrived in Australia and threaten the country's environment, economy and way of life.

Invasive ants typically arrive with cargo and often dominate new environments due to traits such as aggression toward other ants. Some form vast super-colonies made up of many interconnected nests, with millions of workers.

Eradicating Fire Ants in Australia

A fire ant biosecurity zone covers almost 800,000 hectares in south east Queensland. Brisbane, Ipswich and the Gold Coast are included in the zone. This is Australia's final fire ant stronghold and it has persisted since 2001. Other fire ant infestations have been eradicated

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Red fire ants history of eradication in Australia

Location	Year	Extent	Status
Port of Brisbane	2001	470 known colonies > 8,300 hectares	Eradicated 2005
Richlands/South East Qld	2001	Spread to over 600,000 hectares from north of Brisbane to the Gold Coast	Eradication underway
Yarwun, Gladstone	2006	Up to 100 colonies	Eradicated 2007
Port of Gladstone	2013	80 colonies > 4,600 hectares	Eradicated 2016
Port Botany, Sydney	2014	1 colony	Eradicated 2016
Brisbane Airport	2015	At least 1 colony, genetically distinct	Eradicated 2019
Port of Brisbane	2016	At least 1 colony, genetically distinct	Eradicated 2019
Fremantle WA	2019	At least 1 colony, genetically distinct	Eradicated 2023

Queensland Government (2023), National Red Fire Ant Eradication program. www.fireants.org.au

Fire ants have been found at ports in Brisbane and Sydney. Photo: Fire ant full frontal, AntWeb.org (cc-by-sa-3.0)

at the Port of Brisbane, Brisbane Airport, Gladstone, Port Botany and Fremantle. Genetic studies show these are each distinct and separate fire ant arrivals.

It will take at least ten years to eradicate fire ants from Australia. So far eradication efforts have slowed the spread of fire ants and suppressed their numbers. This has occurred despite uncertain and limited funding impairing eradication efforts

Successful eradication requires detecting all ant colonies as early as possible, preventing their spread to new areas and destroying them. Fire ants are often spread accidentally in the movement of soil, mulch, pot plants, hay and fodder.

In Queensland, methods to detect colonies include multi-spectral aerial imagery, ground searching with detector dogs and visual inspection from fire ant program officers. New technologies like eDNA, which surveys soil and water for trace elements of fire ant DNA, and artificial intelligence data models could improve fire ant detection.

Most fire ant nests are being detected by members of the public checking for and reporting suspected fire ant nests.

Once detected in an area fire ant bait is used to destroy colonies. When distributed over potential fire ant habitat, worker ants forage the bait which renders fire ant queens infertile. This method has the least impact on wildlife and the environment. Direct Nest Injection with insecticide is also used in high human-risk areas (schools, parks, sporting fields, health care facilities) where immediate nest destruction is necessary.

Consequences of Faliure

More than 95% of Australia is suitable for fire ant infestation. Left unchecked they will spread across almost all of the country.

Environment

Fire ants have more ecological impacts than most invasive ants because they reach extremely high densities. An assessment of their likely impact on 123 animals in south east Queensland predicted population declines in 45% of birds, 38% of mammals, 69% of reptiles and 95% of frogs. Fire ants heavily impact ants and other insects.

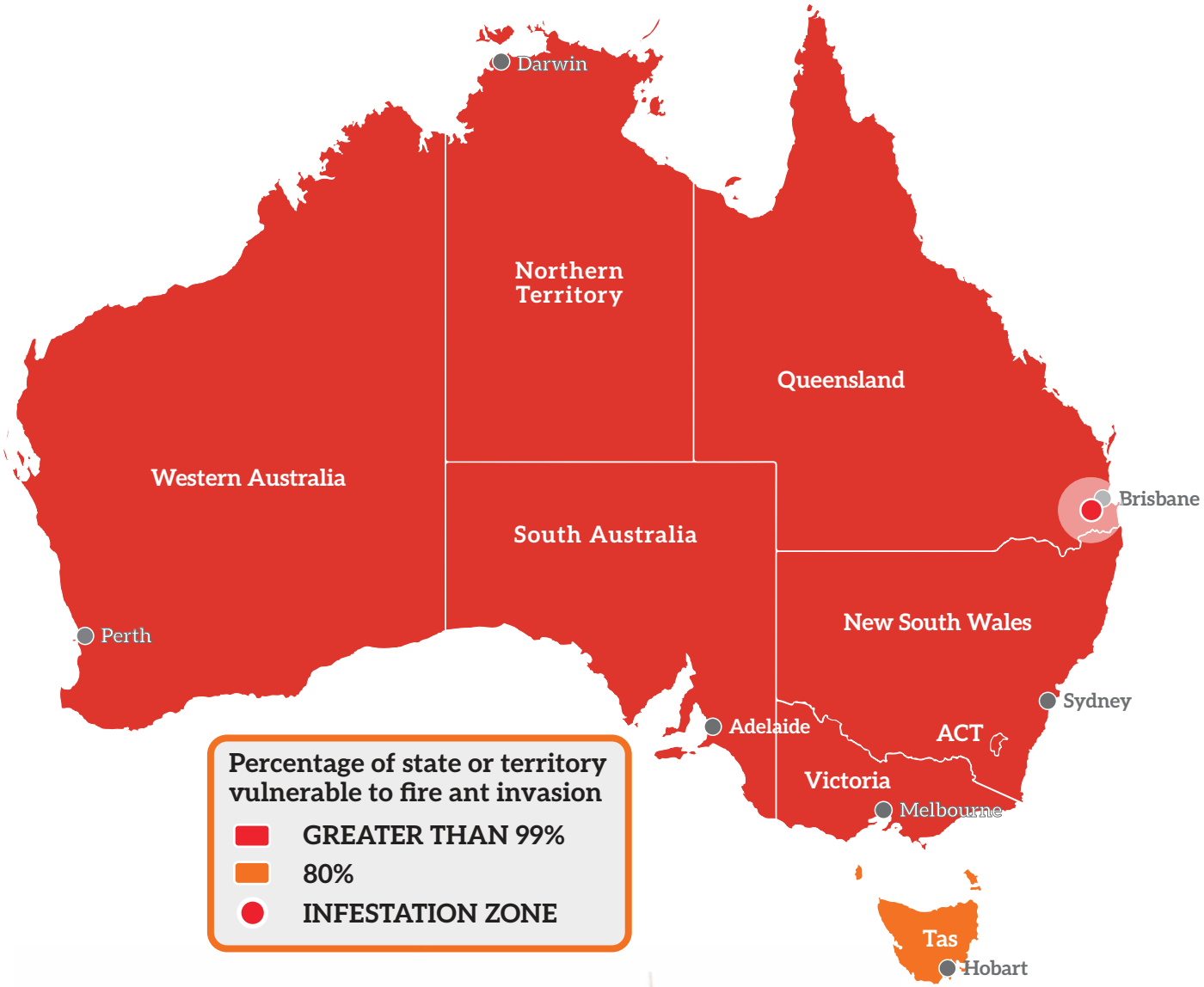
Fire ants threaten many wildlife populations, especially those with open habitats and small distributions, such as the earless dragon and critically endangered plains wanderer. Fire ants will impact turtle and ground-nesting bird populations - particularly hatchling survival.

Analysis from the Commonwealth Environment Department found iconic Australian species like koalas, echidnas, platypus and turtles will be at high risk from fire ants. Fire ants undermine the viability of native plant and insect populations impacting entire ecosystems.

OUR MISSION

Catalysing strong, collaborative biosecurity to protect and restore what makes Australia extraordinary – our unique wildlife and ecosystems.

Lord Howe Island. Photo: Robert Whyte



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Health and Lifestyle

The Australasian Society of Clinical Immunology and Allergy found anaphylaxis rates are almost three times more common from fire ants than from other stinging insects. Bee stings caused 12 fatalities in Australia in 2021.

Fire ants will have a larger population density and distribution in Australia - their aggressive swarming responses and coordinated stinging cause significant pain, reactions and infections. Up to 650,000 extra medical appointments a year are predicted if fire ants spread across Australia.

Economic

Modelling released by The Australia Institute estimates the cost of fire ants to the Australian economy will exceed $2 billion annually. In the United States fire ants are a $10 billion annual economic burden from control and damage costs. So far Australia's governments have spent $873 million over 22 years combatting fire ants. $593 million has been committed until 2027 to eradicate fire ants. If these efforts fail, the cost of fire ants will fall on local councils, farmers, utility companies and households.

Fire ants damage roads, footpaths, water connections and electrical equipment. Crops and livestock impacts include stock loss to cattle, poultry and destruction of bee hives. Fire ant impacts on tourism, construction and outdoor worker health and safety have not been evaluated.

Agricultural Production

Fire ants are linked to a reduction in agricultural output ranging from 10% for cropping land and 20% for livestock to 40% for beef.

The Lockyer Valley and northern New South Wales, key agriculture communities, are directly in the path of future fire ant expansion. Predicted productivity impacts will increase land management costs making farming less viable.

Pustules from fire ant stings. Photo: Murray S. Blum, The University of Georgia

Biosecurity Gaps

Of the invasive species that must be kept out of Australia, fire ants are one of the most serious and costly. The number of fire ant incursions is evidence that serious gaps in Australian biosecurity are undermining our chances of becoming fire ant free, putting at risk the more than $873 million already spent trying to eradicate them.

Risk Assessment and Planning

Identifying and closing off pathways for fire ant arrivals and spread in Australia is a priority. It's time to assess biodiversity risks and implement mitigation plans to protect native species from these highly invasive ants.

Surveillance

Many incursions are not detected until years after they arrive. Surveillance in high-risk areas such as ports must be improved. The Fremantle incursion was detected as part of ongoing browsing ant control efforts. Regular incursion surveys are one strategy to detect and respond to new incursions. Most fire ant infestations are discovered by chance rather than through systematic surveillance

Funding for Eradications

The South East Queensland infestation was almost eradicated in 2003. Failure to conduct broad long-term surveillance allowed the infested area to double between 2004 and 2010. Between 2010 and 2017 there was no long-term funding for the eradication program.

In late 2023 new government fire ant eradication funding was confirmed until 2027. This new funding buys time but more is needed to achieve full eradication in Australia. The 2024 Australian Senate fire ant inquiry provided 10 recommendations to get fire ant eradication efforts back on track. These include a funding review, a long-term commitment, greater transparency, research and a new independent eradication authority.

The Australian Government must rapidly implement these findings.

Public Education

While the program continues detection and eradication work, we can all do our part in combating invasive species. Much more can be done to engage Australians in the fight against invaders like fire ants. Most invasive ant incursions are detected and reported by members of the public

Have you seen fire ants?

Fire ants are between 2mm and 6mm long and reddish-brown in colour. They have an intense sting. Get your free fire ant ID kit: invasives.org.au/how-to-help/take-action/fire-ant-kit/

If you think you've seen one report it:

invasives.org.au/our-work/invasive-insects/ants/red-fire-ants/