FACT SHEET:
RED FIRE ANTS

UPDATED: September 2023

Australia will be free of red fire ants – one of the world's worst invasive species – if we remain committed to one of the country's largest biosecurity operations ever undertaken.

Species

Red imported fire ant / *Solenopsis invicta.*

Origin

South America.

Background

Seven red fire ant infestations in Australia have been brought under control, but the largest infestation, from Brisbane to the NSW border, remains. It is the focus of a national eradication program.

If not eradicated, the impacts of red 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.

The remaining fire ant infestation is expanding, most recently to the coastal island of Minjerribah (North Stradbroke) and to within 12km of the New South Wales border.

Eradicating fire ants in Australia is possible, but if they make it into northern New South Wales and reach the Murray-Darling river catchment the infestation will quickly become beyond control.

ABOUT RED FIRE ANTS

Red fire ants are native to South America, but have spread to the United States, China, Taiwan, Japan, the Philippines and Australia.

They are omnivores, preying on invertebrates and vertebrates and eating plants and honeydew. They are highly aggressive, with a venomous sting used to kill their prey and defend their nest. They swarm in large numbers to attack any animal disturbing their nest. They are tiny (2-6mm) but their sting and high numbers enable them to overwhelm and kill prey much larger than themselves. A primary marker of fire ant nests is a lack of obvious entry or exit holes.

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

Fire ant colonies contain 200,000 to 400,000 workers, although some super colonies have many millions of individuals.

There are two forms – colonies with a single egg-laying queen (monogyne) and those with multiple reproductive queens (polygyne). The multi-queen colonies (sometimes with several hundred queens) reach higher densities than single-queen colonies – up to 50 million ants per hectare. They mostly spread by budding – a new queen mates within the nest and then sets up a new nest just metres away. In the monogyne form, the virgin queens and the males mate in the air. Queens have been reported flying as far as 30km (with favourable wind) to build a new nest. The infestation between Brisbane and the NSW border has both forms. However, ongoing eradication is harming the genetic viability of the Brisbane infestation. Recent fire ant infestation events at Minjerribah, Carrara and Fremantle were a result of freight movement.

INVASIVE ANTS

The red 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 towards other ants. Some form vast super-colonies made up of many interconnected nests, with millions of workers.

ERADICATING RED FIRE ANTS IN AUSTRALIA

The infestation between Brisbane and the NSW border found in 2001 was the first time red imported fire ants established in Australia. Since then, there have been seven further arrivals. Other colonies were discovered in the Port of Brisbane in 2001 and 2016, in Gladstone in 2006 and 2013, in Sydney's Port Botany in 2014, in Brisbane Airport in 2015 and in Fremantle in 2019. Genetic studies show they have each resulted from separate arrivals.

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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 within 12km of NSW border	Eradication underway
Yarwun, Gladstone	2006	Up to 100 colonies	Eradicated 2007
Port of Gladstone	2013	80 colonies over 4,600 hectares	Eradicated 2016
Port Botany, Sydney	2014	1 colony	Eradicated 2016
Brisbane Airport	2015	New infestation detected by genetic tracing	Eradicated 2019
Port of Brisbane	2016	New infestation detected by genetic tracing	Eradicated 2019
Fremantle WA	2019	3 colonies detected in routine sweeps for other invasive ants. New infestation.	Eradicated 2023
Minjerribah (North Stradbroke Island)	2023	New colony detected, concerns it will enter the Murray Darling Basin	Eradication underway

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)

The outbreak in South East Queensland between Brisbane and the NSW border covers a large area and will take many more years to eradicate.

The eradication program suffered from a lack of funds and poor planning in its early stages.

Successful eradication requires detecting all ant colonies as early as possible, destroying the colonies and preventing the spread to new areas via the movement of soil, mulch, pot plants and fodder.

In Queensland, methods used to detect colonies include aerial photography (with high definition visual, near infrared and thermal cameras to detect mounds), and ground searching, including with sniffer dogs which are sensitive enough to detect single ants. Communities also need to be educated – they can help check for and report suspicious ants and avoid spreading them if they are within the infestation zone.

The best method for destroying ant colonies is a bait that renders all queens infertile. This method has the least impact on other wildlife and the environment. Another method is direct nest injection which involves opening fire ant nests and flooding them with an insecticide.

CONSEQUENCES OF FAILURE

What would Australia be like if eradication fails or if more red fire ants arrive in the country? More than 95% of Australia is climatically suitable for these ants. They could inhabit almost the entire continent except for the most extreme, coldest locations.

Left unchecked they will infest the entire populated coastal belt – spreading over decades through the flight of the fire ant queens and the regular movement of people and goods.

Environment

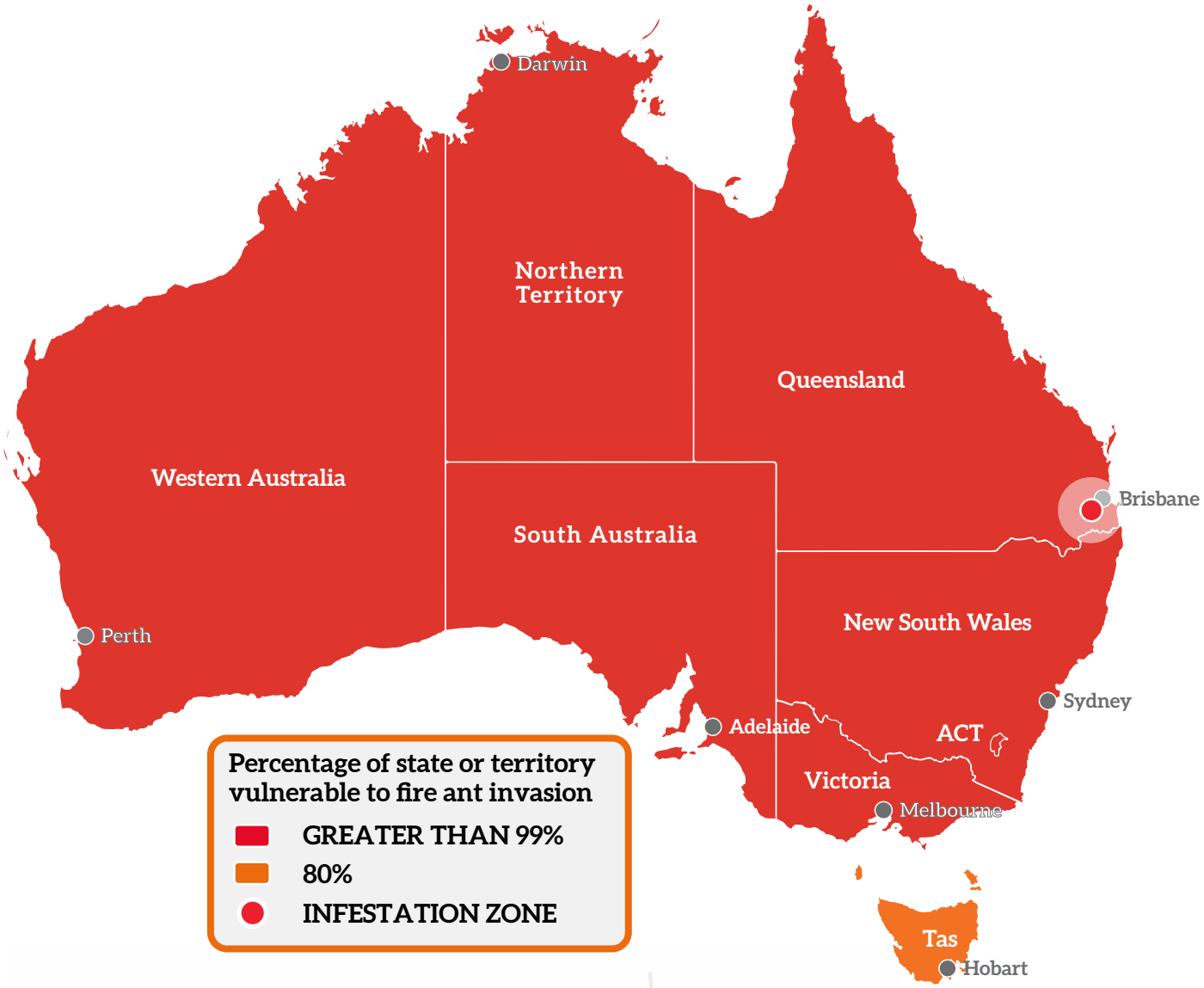
Fire ants have more ecological impacts than most invasive ants because they reach extremely high densities. An assessment of their likely impact on 123 animals in South East Queensland predicted population declines in about 45% of birds, 38% of mammals, 69% of reptiles and 95% of frogs. Fire ants could push species onto threatened lists, especially those found in open habitats that have small distributions, such as the earless dragon and critically endangered plains wanderer. Fire ants also pose a threat to turtles and ground nesting birds - particularly to hatchlings.

By reducing plant populations and competing with native plant and insect-eaters, they can affect entire ecosystems. Plants may face risks from red fire ants disrupting pollination, seed dispersal and germination.

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

When a fire ant mound is disturbed, thousands of ants swarm to the surface and repeatedly sting the intruder. In the US, 30 to 60% of people in infested areas are stung each year. The stings are painful – the alkaloid venom causes pustules and, in some people, allergic reactions. More than 85 people in the US have died of anaphylactic shock. 2002 modelling currently being updated for Australia indicates fire ants would cause an extra 140,000 medical consultations and 3000 anaphylactic reactions a year.

Economic

The costs for eradication are shared between state and federal governments. So far, red fire ant eradication in Australia has cost state and federal governments almost AUD $740 million. Although expensive, this is far less than the costs of failing. Modelling by the Queensland government indicates that, in South East Queensland alone, red imported fire ants would impose costs of about $45 billion over 30 years. In the US, fire ants now cost the equivalent of around AUD $10 billion per year in damage and control. If fire ants take hold in Australia, additional costs would fall on local governments, energy utilities, industry, property owners and individuals.

Among the costs are damage to infrastructure (roads, footpaths, water connections and electrical equipment) and to farming enterprises. These invasive ants damage crops, rob beehives and kill newborn livestock. During dry times, they dominate the margins of dams, making it impossible for livestock to reach water without being seriously stung.

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. Key agricultural communities in the Lockyer Valley and northern New South Wales sit directly in fire ant expansion paths. If predicted levels of productivity impacts are realised, it will make farming less viable while also increasing costs of land management and imposing workforce and landholder health risks.

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

BIOSECURITY GAPS

Of all the invasive species that should be kept out of Australia, red imported 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 $740 million already spent trying to eradicate them.

Risk assessment and planning

We need to do more work identifying and closing off pathways for fire ant arrivals and spread in Australia, assess the biodiversity that is at risk and understand how to protect native species from these highly invasive ants.

Surveillance

The fact that many incursions are not detected until many years after they arrive shows surveillance in high risk areas such as ports is inadequate. The Fremantle incursion was detected as part of ongoing browsing ant control efforts - showing the vital importance of regular incursion surveys. Most fire ant infestations are discovered by chance rather than through systematic surveillance.

Funding for eradications

The eradication programs in Queensland had suffered from too little and short-term funding. The South East Queensland infestation was almost eradicated in 2003, but the failure to conduct broad 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 July 2017, Australia's agriculture ministers committed to a ten year eradication program. Eradication is a significant challenge, and a recent review has concluded additional effort is needed.

In August 2023 we discovered the government had cut funding for eradication in half. We are currently calling on the government to restore funding to the program, to protect our native environment, backyards and parks.

Public education

While the program continues its detection and eradication work, the community is a largely untapped asset in combating invasive species and much more could be done to engage Australians in the fight against invaders like the red fire ant. Most invasive ant incursions are detected by members of the public who spot something that does not look right and report it.

HAVE YOU SEEN RED FIRE ANTS?

Red imported fire ants are between 2mm and 6mm long and reddish-brown in colour. They have an intense sting. If you think you've seen one report it:

invasives.org.au/insect-watch/red-imported-fire-ant