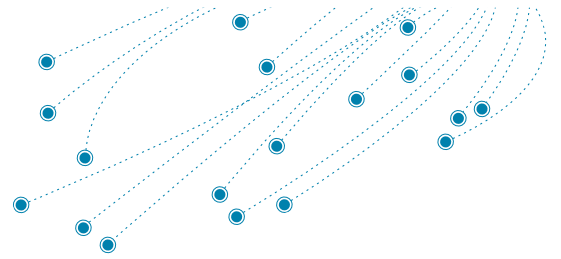


# TAWNY CRAZY ANT



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Invasive insects are a huge biosecurity challenge. We profile some of the most harmful insect invaders overseas to show why we must keep them out of Australia.

### Species

Tawny crazy ant / *Paratrechina fulva*. Also known as *Nylanderia fulva*, raspberry crazy ant, hairy crazy ant.

### Main impacts

Dominates ecosystems, eating invertebrates, displacing other ants, attacking mammals and birds, tending sap-sucking bugs that harm plants, and spreading plant diseases. Invades homes and gardens, causes electrical malfunctions in businesses and homes, spreads pathogens in hospitals, harms livestock and crops.

### Native range

South America.<sup>1</sup>

### Invasive range

Colombia, Peru, Mexico, Panama, Caribbean islands, United States.<sup>2,3</sup>

### Main pathways of global spread

Unknown.

## ENVIRONMENTAL IMPACTS OVERSEAS

The tawny crazy ant displaces other ants – in Colombia it displaces 9 of 14 native species<sup>1</sup> and in colonised sites in Texas it has attained within a year 'densities up to 2 orders of magnitude greater than the combined abundance of all other ants'<sup>4</sup>. In some locations in the United States, it is replacing (in much higher densities) the invasive red imported fire ant (*Solenopsis invicta*)<sup>4</sup>. It can outcompete the fire ant by capturing more prey and is able to detoxify the fire ant venom<sup>1</sup>. Fire ants in the United States are considered a very serious problem for biodiversity, for their attacks on invertebrates, reptiles and ground-nesting birds<sup>5</sup>, and the concern is that tawny crazy ants, a far newer arrival in the United States, could rival or exceed them as a threat<sup>1</sup>. Fire ants are restricted to disturbed habitats, while tawny crazy



Tawny crazy ant pupae and worker. Photo: Alex Wild and Ed Le Brun

ants also invade forested habitats in high densities, so they threaten more habitats<sup>4</sup>.

The impacts of tawny crazy ants on wildlife other than ants have not been studied, but they are suspected to be serious, based on observations in Texas and Colombia. Texas A&M University reports that the ants irritate wildlife, and that masses covering the ground and trees 'likely affect ground and tree-nesting birds and other small animals and cause wildlife to move out of the area'<sup>6</sup>. On farms in Colombia the ants kill chickens and other small livestock by blocking their nasal passage, and they attack cattle around the eyes, nose and hoofs, blinding calves<sup>7</sup>. These match the behaviour in the United States of fire ants<sup>5</sup>, which are subject to an expensive

eradication effort in Australia, justified partly by impacts of this nature.

Another problem is that tawny crazy ants protect sap-sucking bugs from which they obtain honeydew. In Colombia this has led to desiccation of grasslands due to excessive numbers of bugs<sup>7</sup>. In the Caribbean it has resulted in a coconut plantation producing no coconuts due to high densities of ant-tended bugs on the flowers and young fruit causing them to drop prematurely<sup>8</sup>. The ants also increase the incidence of diseases on crops, including viral and fungal infections<sup>9</sup>. Although the evidence is from crops, there is no reason to doubt that some native plants would be affected in the same way.



The tawny crazy ant is a 2.6-3 mm long, hairy, golden-brown to reddish-brown ant. Photo: Michael Bentley | Flickr | CC BY-NC-ND 2.0

## HUMAN AND ECONOMIC IMPACTS OVERSEAS

In Colombia high population densities make this species 'a formidable household pest'<sup>7</sup>. In Texas it has become a serious pest in homes (invading kitchens, baths and taps) and gardens. People and their pets are uncomfortable in their yards<sup>6</sup> and pets behave abnormally<sup>9</sup>. Unlike fire ants, these ants lack a painful sting but, even so, many residents dislike them more than fire ants<sup>6</sup>. They are costly and difficult to control, with no treatments proving satisfactory<sup>9</sup>.

Tawny crazy ants cause costly damage to electrical equipment, short-circuiting telephones, computers, air conditioning units, pool pumps, electrical boxes and sewage lift pump stations<sup>6,9</sup>. They have caused power outages in entire streets<sup>9</sup>.

The ants are also a medical concern. They invade hospitals, and experiments showed them capable of transferring the bacterium *Escherichia coli* after acquiring it from a contaminated source<sup>7</sup>. Pyrosequencing indicated a suite of 518 bacteria and 135 fungi species associated with this ant, many of them known pathogens of plants, animals and humans<sup>7</sup>. Because there is no way to keep them out of hospitals, they should be regarded as a medically important species<sup>7</sup>.

In Colombia and the Caribbean these ants are agricultural pests, killing chickens, blinding calves, reducing crop yields, spreading crop diseases and drying pastures<sup>5,7,8</sup>. Their protection of sap-sucking bugs has caused damage to coffee crops in South America and coconut crops in the Caribbean<sup>1</sup>. In Texas they have caused honey bees to abandon hives<sup>7</sup>.

## AUSTRALIAN CONCERNS

This ant is likely to be a serious threat to Australian biodiversity, given that climate modelling indicates high climatic suitability in subtropical eastern Australia and some climatic suitability across a much larger area, including most of New South Wales, Victoria and Tasmania<sup>3</sup>. Having invaded intact floodplain forest and native pasturelands in Texas<sup>4</sup>, this ant could be expected to invade natural habitats in Australia. Ecological impacts are likely due to displacement of native ant species, predation of small animals and protection of sap-sucking bugs. These could be severe, as suggested by the ability of the tawny crazy ant to outcompete the red imported fire ant<sup>1</sup>.

An incursion could be difficult to eradicate. In Texas, after the species was first detected by a pest control operator in 2002, new populations arose at alarming rates, and no satisfactory method of controlling them was found<sup>9</sup>.

## SOURCES

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## ABOUT THIS PROJECT

The Invasive Insects: Risks and Pathways Project is a partnership between Monash University and the Invasive Species Council. To find out more visit [invasives.org.au/risks-and-pathways](https://invasives.org.au/risks-and-pathways).