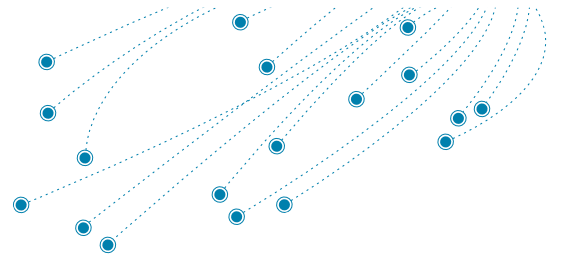


TAWNY CRAZY ANT



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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.¹

Invasive range

Colombia, Peru, Mexico, Panama, Caribbean islands, United States.^{2,3}

Main pathways of global spread

Unknown.

ENVIRONMENTAL IMPACTS OVERSEAS

The tawny crazy ant displaces other ants – in Colombia it displaces 9 of 14 native species¹ 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'⁴. In some locations in the United States, it is replacing (in much higher densities) the invasive red imported fire ant (*Solenopsis invicta*)⁴. It can outcompete the fire ant by capturing more prey and is able to detoxify the fire ant venom¹. Fire ants in the United States are considered a very serious problem for biodiversity, for their attacks on invertebrates, reptiles and ground-nesting birds⁵, and the concern is that tawny crazy ants, a far newer arrival in the United States, could rival or exceed them as a threat¹. 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 habitats⁴.

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'⁶. 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 calves⁷. These match the behaviour in the United States of fire ants⁵, 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 bugs⁷. 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 prematurely⁸. The ants also increase the incidence of diseases on crops, including viral and fungal infections⁹. 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'⁷. 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 yards⁶ and pets behave abnormally⁹. Unlike fire ants, these ants lack a painful sting but, even so, many residents dislike them more than fire ants⁶. They are costly and difficult to control, with no treatments proving satisfactory⁹.

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^{6,9}. They have caused power outages in entire streets⁹.

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 source⁷. Pyrosequencing indicated a suite of 518 bacteria and 135 fungi species associated with this ant, many of them known pathogens of plants, animals and humans⁷. Because there is no way to keep them out of hospitals, they should be regarded as a medically important species⁷.

In Colombia and the Caribbean these ants are agricultural pests, killing chickens, blinding calves, reducing crop yields, spreading crop diseases and drying pastures^{5,7,8}. Their protection of sap-sucking bugs has caused damage to coffee crops in South America and coconut crops in the Caribbean¹. In Texas they have caused honey bees to abandon hives⁷.

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 Tasmania³. Having invaded intact floodplain forest and native pasturelands in Texas⁴, 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 ant¹.

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 found⁹.

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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.