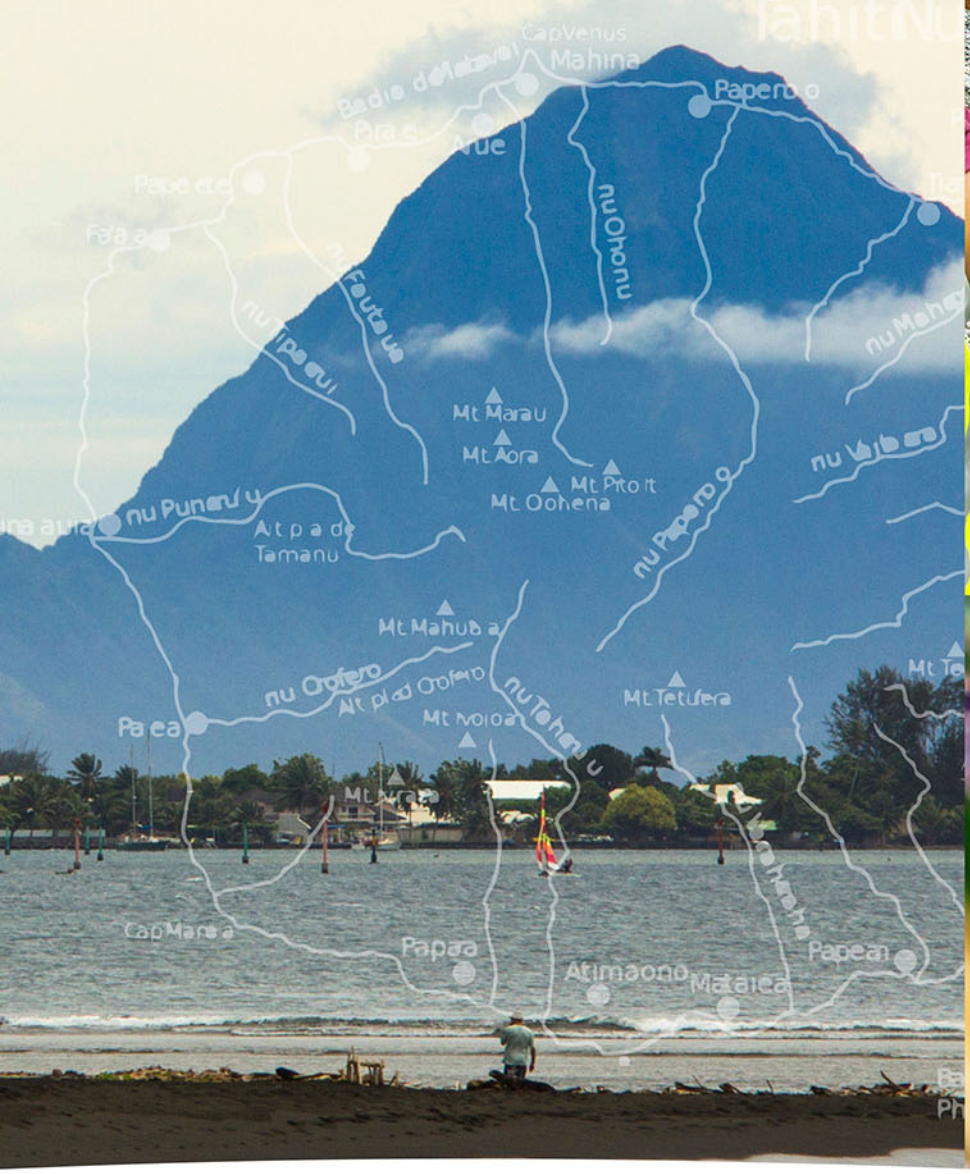
Little Fire Ants
in French Polynesia

Synthesis Report



SPREP
Secretariat of the Pacific Regional Environment Programme

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RÉPUBLIQUE FRANÇAISE
FONDS PACIFIQUE

Direction de l'environnement

The Little Fire Ant

The little fire ant, *Wasmannia auropunctata*, is a small ant native to Central and South America, which has been introduced into a third of the Pacific region's island groups. It is considered by invasive experts to be the greatest ant species threat within the Pacific islands region.

Although its official discovery in Tahiti was in 2004, it is likely that the little fire ant has been present in Tahiti for much longer. The centre of contamination in Tahiti is the northern Mahina Commune. Initial treatment and monitoring initiatives to combat the ant invasion were carried out between 2005 and 2009, but were discontinued in 2010.

Mahina Commune approached the Secretariat of the Pacific Regional Environment Programme (SPREP) in 2012, seeking assistance for management of little fire ants and domestic waste.

Funding assistance from Fonds Pacifique was secured in 2013 to assist with identifying options for Mahina's waste management issues, development of best practice for managing little fire ants including biosecurity measures, and for building capacity of locals and review of legislative options to better control the spread of the ant.

Waste Management

Little fire ants are known to infest green waste as well as oversized waste left out for collection. To counter human assisted transportation of little fire ants, the movement of green and oversized waste from the Mahina Commune to other areas of Tahiti was prohibited in 2006.

However, this ban has hindered effective waste management in the Mahina Commune, and resulted in adverse environmental impacts from the continued use of an unregulated dumpsite used to temporarily dispose of green waste and oversized waste.

As a consequence, the impact of little fire ants to the Mahina Commune has been more severe than in other French Polynesian municipalities.

Distribution

Of the 15,000 ant species known to science, only a few have the ability to travel easily with human commerce (hitching rides with cargo, ships and aircraft), and once established, reproduce rapidly at their new location, causing a variety of impacts.

The Pacific region is especially prone to colonisation by invasive ant species. The most damaging of these is the little fire ant (*Wasmannia auropunctata*).

Impacts

When the nests are disturbed, little fire ants aggressively defend their territory or resources. Little fire ants can also infest houses, forage through homes and sting people, children and domestic animals.

The sting affects people to varying degrees from a painful rash to large raised welts.

Domestic animals that get stung in the eye often suffer from keratopathy or clouded corneas, leading to blindness.

Habitats

The little fire ant is a rainforest species that prefers warm, moist and shady habitats.

There is often more than one queen per colony and although many nests are established, they are all interconnected.

Average length
1.5mm
Maximum length
Less than 3mm

Colour
Golden/yellow
(can appear orange)

Stopping the spread

Preventing the spread of the little fire ant from the existing two infested islands (Tahiti and Moorea) to the rest of the 130 islands of French Polynesia is a high priority.

In French Polynesia there are effectively three recognised structures of governance - the French Polynesia government (Territorial), the French Republic (National) and the Communes (Local). Managing of the environment, including invasive species, is the responsibility of the French Polynesian government (Territorial).

The Environment Code includes provisions for management of invasive species. Enforcement of legislation needs to closely observe French Republic laws (National) including prosecution and application of penalties.

The limited human capacity and the vast spread of islands throughout the French Polynesia archipelago compounds the enactment and enforcement of any legislation in the country.

A possible scenario where legislative control can be enhanced includes enforcement at the departure and at entry points. Papeete is the main entry and departure point and hub for the rest of the country, and this is where vigilant control should be focused.

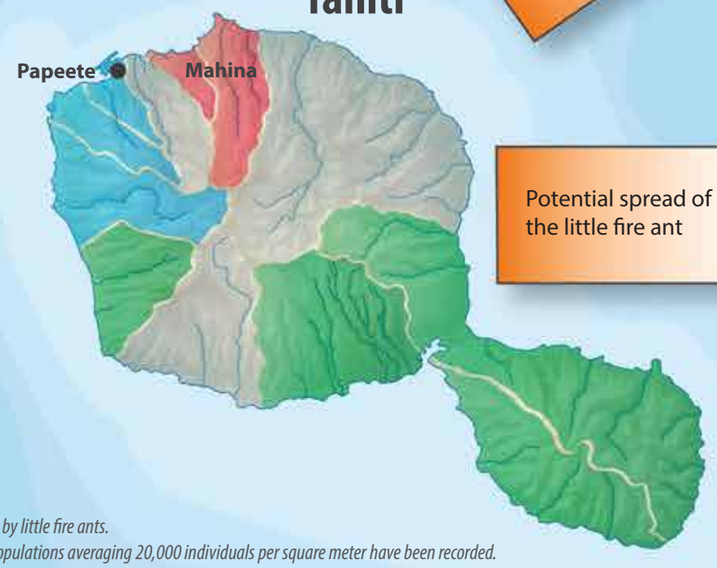
For the rest of the archipelagic islands, the Communes have jurisdictions on maintaining public safety through control of incoming cargoes and passengers. The Communes, especially the mayor and the judicial police officers, can put in place measures to protect their islands from the introduction of invasive species.

Waste Management - Green waste in Tahiti and Moorea must be composted under strictly controlled conditions to eliminate accidental ant transportation. The wider public can be educated to assist in the control and eradication campaign.

Moorea

(1 infested site located)

Tahiti



- Not infested
- Infested 0.1-0.3%
- Infested ~1%
- Infested >4%

Figures indicate mean density of land area infested by little fire ants.
In tropical areas containing cultivated fruit trees, populations averaging 20,000 individuals per square meter have been recorded.

Potential spread of the little fire ant

Potential spread of the little fire ant

Pacific Ant Prevention Plan: a regional strategy that supports a coordinated approach to the issue of invasive ants in the Pacific region.

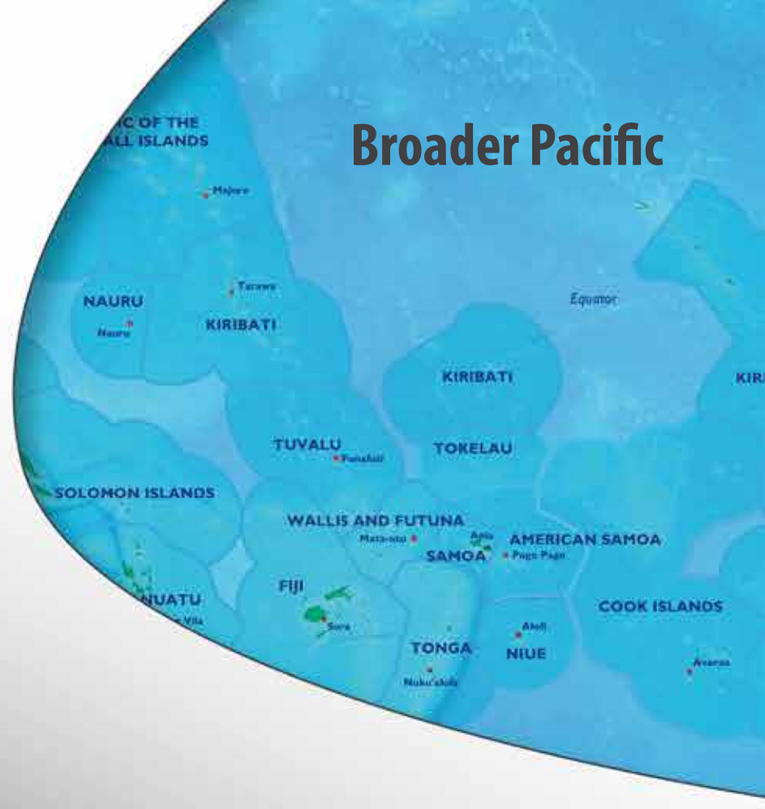
It emphasises appropriate legislation, regulations and standards, risk analysis, trade agreements which accommodate risks, operational measures to prevent ants arriving, surveillance measures for quick identification, incursion responses and the capability to enact them, regional public awareness, and an active research programme.

French Polynesia Invasive Species Network (FPISN) to reinforce controls upon entry to the islands through a police order from the commune mayor.

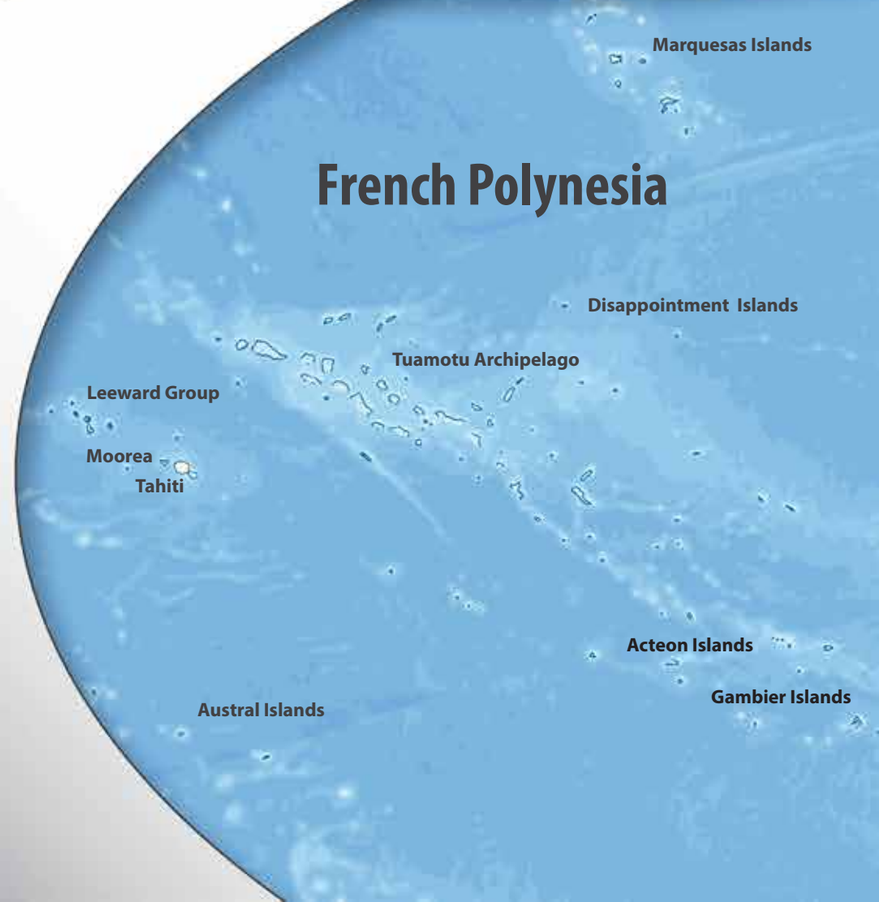
Reinforce departure controls by increasing the powers of investigation of sworn officers.

Standard Operating Procedures (SOPs) for Early Detection and Rapid Response (EDRP) to be implemented by the FPISN.

Broader Pacific



French Polynesia



Control Techniques

Granular baits

This method is for treating little fire ant nesting on the ground or in vegetation under 1.5m high. Treatment with granular baits is intended to deliver an even distribution of the bait over the soil surface at an approx. rate of 2 kg per hectare. Two main application methods are used: hand-held spreaders and motorized blowers, spreaders can be attached to vehicles for treatment of larger areas. Baits containing hydramethylnon, indoxacarb and fipronil work best. Please note that the active ingredients in ant baits may affect aquatic life to varying degrees. Extreme caution should be taken when selecting and applying baits near water bodies, both salt and fresh water.

Gel baits

The use of gel baits is to ensure that areas not adequately covered by granular baits are also treated. Little fire ants like to nest in trees, vegetation and even the crowns of coconuts. The bait is easily applied to cracks, crevices, branches, vertical surfaces and it is therefore very suitable for use on trees, shrubs and buildings. The recommended application rate is 10 kg per hectare depending on how much vegetation cover is present. Rainfall within 12 hours of treatment can reduce effectiveness, however, most of the gel baits will remain unless rainfall is very heavy. Every tree, shrub and building structure within the treatment area will need to be treated.

Application of granular and gel baits should only be used by persons who have undergone practical training.

Surveillance and monitoring methods

Detection surveys determine if a site does, or does not, have an invasive ant. This is the easiest type of survey to conduct because all that is needed to confirm presence of the ant is a single specimen. **Delimiting surveys** aim to map the extent of an infestation. **Quarantine detections** determine if a commodity is infested with the target species.

Detection of ants can be accomplished by several means including visual searches, placement of long term trapping devices like pitfall traps or by placing lures of attractive food items within the survey area. The use of lures has several advantages for most survey types including low cost, ease of deployment and systematic nature. Specimens can be collected and then identified.

For detailed information on control methods please visit:

www.sprep.org/multilateral-environmental-agreements/managing-the-impacts-of-the-little-fire-ant-wasmannia-auropunctata-in-french-polynesia

Key Recommendations

- Compost green waste from the Mahina Commune under controlled conditions at a local site to minimise or eliminate any accidental ant transportation. Very high compost temperatures will kill all insect pests.

- Adhere to strict routine quality assurance measures at the composting site, including ant baiting and monitoring, compost pile temperature logging, adherence to minimum compost row separation, use of soil pesticide barriers, runoff monitoring and regular sterilization sterilisation of all machinery and tools involved in composting operations.

- Compost produced in Tahiti is currently fumigated with methyl bromide prior to sale. The necessity for this should be reviewed, and a public education campaign developed to explain any changes to ant control measures and to help market compost produced in Mahina.

- Undertake controlled trials to assess the efficacy of heat sterilisation achieved through long-term sunlight exposure on metal shipping containers and their contents - as an alternative to continued use of methyl bromide fumigation.

- Assess legislative changes required for improved green waste and oversized waste management in Tahiti , and seek funding for the remediation of the Mahina unauthorised dumpsite following its closure.

- Develop early detection and emergency response plans supported by well-trained personnel.

- Strengthen inter-island biosecurity measures to allow for thorough inspections, treatment and control of goods being shipped from Tahiti and Moorea outward. Preventing the spread of little fire ants from the existing two infested islands (Tahiti and Moorea) to the rest of the 130 islands of French Polynesia is a high priority.

- Engage the wider public in a little fire ant control and eradication campaign .

- Strengthen the legislative authority and collaboration amongst the three jurisdictional bodies (State, French Polynesia Government and Communes), especially in the areas of controls (e.g. port of entry) and joint-investigation with police are means of improving biosecurity measures.

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For more information, please refer to full report:

Managing the impacts of the little fire ant (Wasmannia auropunctata) in French Polynesia

- Distribution, impacts and estimated population growth.

- Integrated waste management strategies to minimise the risk of transportation of the little fire ant in Tahiti, French Polynesia.

- Considerations for eradication, containment and long-term monitoring of the little fire ant in Tahiti.

- Extension of the biosecurity monitoring programme in French Polynesia and its trading partners, with a focus on little fire ants.

Available in both English and French at: *www.sprep.org*