Notes
Foraging Behaviour: Although the yellow crazy ant (*Anoplolepis gracilipes*) typically nests under leaf litter or in holes in the ground, it forages extremely competitively over every surface within its territory, including forests (Room 1975, in O’Dowd *et al.* 1999). Its ability to forage throughout the day and night, and over a wide range of temperatures allows it to rapidly alter invaded ecosystems. High temperatures (such as those that occur around midday) and surface ground temperatures of 44°C may prevent workers from foraging. Ant activity begins to decline from around 25°C and foraging may be limited by rain. Researchers have reported an increase in both foraging activity and nest size in the dry season. It exhibits frenetic behaviour when its foraging is disturbed, which presumably explains its common name.

Note that it should not be confused with the similarly named crazy ant (*Paratrechina longicornis*) and that most literature on *A. gracilipes* is under its synonym (*A. longipes*).

Lifecycle Stages
The life cycle of *Anoplolepis gracilipes* has been estimated to take 76-84 days. Eggs hatch in 18-20 days, and worker larvae develop in 16-20 days. Pupae of workers require around 20 days to develop while those of queens develop in 30-34 days.

Habitat Description
*Anoplolepis gracilipes* are known to be ready invaders of disturbed habitats such as urban areas, forest edges or agricultural fields (Ness and Bronstein, 2004). The ability of *A. gracilipes* to live in human dwellings or human-frequented areas has meant it has become a serious pest in many households and buildings (O’Dowd *et al.* 1999).

The yellow crazy ant has been known to successfully colonise a variety of agricultural systems, including cinnamon, citrus and coffee crops and coconut plantations (Haines and Haines 1978, Van Der Goot 1916, in Holway *et al.* 2002; O’Dowd *et al.* 1999) and on banana, rambutan, mango, durian, sugarcane and langsat (Jochen Drescher pers.comm May 2010). In agricultural regions it is typically found nesting at the base, or even in the crown, of crop plants. For example, on New Guinea it nests in the crowns of coconut trees, feeding off honeydew-producing scale insects and palm flower nectar (Young 1996, in O’Dowd *et al.* 1999).

*A. gracilipes* is also capable of invading undisturbed habitats as in the case of the drier monsoon forests on Christmas Island (Indian Ocean), where the yellow crazy ant experienced a population explosion and thrives in (previously) undisturbed native forest habitats (CBD, 2003); it is however not known to enter lowland rainforest or submontane rainforest (Jochen Drescher pers.comm May 2010). The nesting requirements of the ant are general and it often nests under leaf litter or in cracks and crevices (Lewis *et al.* 1976, Rao and Veeresh 1991, in O’Dowd *et al.* 1999). On Christmas Island, the yellow crazy ant takes advantage of crab burrows, the woody debris of the forest floor, tree hollows and epiphytes and the hollows created at the base of palm leaves (O’Dowd *et al.* 1999).

Reproduction
*Anoplolepis gracilipes* colonies are polygynous. Worker production fluctuates but is continuous throughout the year. Sexual offspring may occur year-round, but are generally produced seasonally (prior to the rainy season) (Baker 1976, in O’Dowd *et al.* 1999). Colony budding is an important form of dispersal for the ant, although winged queens and males (known as alates) have been reported on Christmas Island. It is unclear if winged-forms of the ant are able to start new colonies.
Nutrition

*Anoplolepis gracilipes* have a broad diet characteristic of many invasive ants. A generalised feeding regime increases the invasiveness of an ant due to the increased ability to gain nutrition from available resources including grains, seeds, arthropods, decaying matter and vegetation (Holway et al. 2002; Ness and Bronstein 2004). The yellow crazy ant is a scavenger and preys on a variety of litter and canopy invertebrates, such as small isopods, myriapods, molluscs, arachnids, land crabs and insects (O'Dowd et al. 1999). In the Seychelles, they feed on invertebrates and will attack, kill, and dismember large arthropods (Haines et al. 1994, in O'Dowd et al. 1999). Like all ants, they require proteinaceous foods for brood production (O'Dowd et al. 1999). In addition to protein-rich foods *A. gracilipes* may rely heavily on carbohydrate-rich nutrient sources, such as plant nectar or honeydew-producing scale insects (especially insects in the *Homoptera* genus). In the Seychelles, the quantity of honeydew in a 2.5mg worker is estimated to be up to 50% (Haines et al. 1994 in O'Dowd et al. 1999). The presence of *Homoptera* insects may be so important that it may limit population growth. For example, in cocoa plantations in Papua New Guinea *Homoptera* insect populations are thought to be necessary to support and sustain *A. gracilipes* colonies (Holway et al. 2002).

General Impacts

High densities of the yellow crazy ant (*Anoplolepis gracilipes*) have the potential to devastate native 'keystone' species, resulting in a rapid alteration of ecosystem processes and negative effects on endemic species. The most notable example concerns the native forests of Christmas Island, in which populations of the yellow crazy ant have exploded in recent decades (at least 60 years after its initial introduction) (CBD 2003). Please follow this link for more details on the [impacts of yellow crazy ants](https://www.iucngisd.org/gisd/species.php?sc=110) on biodiversity. For a summary of the general impacts of invasive ants, such as their affect on mutualistic relations, the competitive pressure they impose on native ants and the effect they may have on vulnerable ecosystems please read this document: [invasive ants impacts](https://www.iucngisd.org/gisd/species.php?sc=110) compiled by the ISSG.

Management Info

**Preventative measures:** The Pacific Ant Prevention Programme is a proposal prepared for the Pacific Plant Protection Organisation and Regional Technical Meeting for Plant Protection. This plan aims to prevent the red imported fire ant and other invasive ant species from establishing within or spreading between countries in the Pacific.

A detailed pest risk assessment for the eight species ranked as having the highest potential risk to New Zealand was prepared as part of ‘The Invasive Ant Risk Assessment Project’, [Harris et al. 2005.](https://www.biosec.govt.nz/), for Biosecurity New Zealand by Landcare Research. *Anoplolepis gracilipes* scored as a high-risk threat to New Zealand. The Invasive ant risk assessment for *A. gracilipes* can be viewed at [Anoplolepis gracilipes risk assessment](https://www.biosec.govt.nz/). Please see [Anoplolepis gracilipes information sheet](https://www.biosec.govt.nz/) for more information on biology, distribution, pest status and control technologies.

**Chemical:** The toxic principles in ant baits include the so-called “stomach” poisons, hydramethylnon (Maxforce, Amdro), sulfuryram and sodium tetraborate decahydrate (Borax). Insect Growth Regulators (IGRs) disrupt development and include compounds such as methoprene and fenoxycarb. Stomach poisons work relatively fast compared to IGRs, but may sometimes work too quickly, eliminating workers before the insecticide can be distributed throughout the entire colony. One promising approach is to use pheromones (compounds produced by a species that regulate their own behaviour) as “biopesticides” to disrupt the reproduction by the queen (O'Dowd et al. 1999). Baits should be designed with the foraging strategies of the specific ant species in mind. Determining the preferred size, type and dispersal pattern of the bait is an important step. Nesting, foraging and behavioural traits of the ant should all be taken into consideration. The use of appropriately designed baits is needed to reduce the cost of toxin use to native ant populations and non-target fauna (McGlynn, 1999).

Please follow this link for more detailed information on the management of the yellow crazy ant compiled by the ISSG.
Pathway

Principal source:

Compiler: Dr. Dennis O’Dowd, Centre for Analysis and Management of Biological Invasions, Australia & IUCN/SSC Invasive Species Specialist Group (ISSG)

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ALIEN RANGE

[3] AMERICAN SAMOA
[1] BRUNEI DARUSSALAM
[1] CHILE
[1] CHRISTMAS ISLAND
[1] FIJI
[1] GUAM
[4] INDIA
[4] JAPAN
[2] MALAYSIA
[3] MAURITIUS
[1] MICRONESIA, FEDERATED STATES OF
[1] NEW ZEALAND
[5] NORTHERN MARIANA ISLANDS
[1] PAPUA NEW GUINEA
[4] SAMOA
[2] SOLOMON ISLANDS
[1] SOUTH EAST ASIA
[1] TANZANIA, UNITED REPUBLIC OF
[1] TONGA
[4] UNITED STATES
[1] VANUATU

[14] AUSTRALIA
[1] CAROLINE ISLANDS
[3] CHINA
[2] COOK ISLANDS
[5] FRENCH POLYNESIA
[1] HONG KONG
[8] INDONESIA
[2] KIRIBATI
[2] MARSHALL ISLANDS
[18] MEXICO
[1] NEW CALEDONIA
[1] NIUE
[13] SEYCHELLES
[1] SOUTH AFRICA
[2] TAIWAN
[1] TOKELAU
[1] TUVALU
[1] UNITED STATES MINOR OUTLYING ISLANDS
[1] WALLIS AND FUTUNA

Red List assessed species 14: CR = 3; EN = 1; VU = 5; NT = 1; LC = 4;

**Crocidura trichura** CR
**Ducula whartonii** VU
**Fregata andrewsi** CR
**Lioscincus tillieri** NT
**Ninox natalis** VU
**Simiscincus aurantiacus** VU
**Tropidoscincus variabilis** LC

**Cryptoblepharus novocaledonicus** LC
**Emoia nativitatis** CR
**Lacertoides pardalis** VU
**Litoria fallax** LC
**Papasula abbotti** EN
**Sterna fuscata** LC
**Zosterops natalis** VU

BIBLIOGRAPHY

93 references found for *Anoplolepis gracilipes*

Management information

The red imported fire ant (*Solenopsis invicta*), tropical fire ant (*S. geminata*), little fire ant (*Wasmannia auropunctata*), and Argentine big-headed ant (*Pheidole megacephala*) are considered the worst invasive ant species in New Zealand, Australia, and the Seychelles. These ants are highly aggressive and deplete the populations of many native ant species. They can also damage infrastructure and cause significant economic losses. The most effective control method is baiting, which involves the use of toxic baits that are specifically formulated to target these ant species. Additionally, residual sprays and other chemical control methods can be used. Biological control methods, such as the introduction of natural predators, are being explored as alternative control strategies.

Hoffmann, B., pers.commm. 2007a. North east Arnhem Land YCA Eradication Protocols

Summary: The eradication project in NE Arnhem Land is a collaboration between Dhimurru Land Management Aboriginal Corporation, CSIRO, Alcan Gove, Department of Environment and Heritage, Northern Territory Government, Indigenous Land Corporation and the Northern Land Council. The project which began in 2004, is expected to last for 4 years.

The yellow crazy ant eradication project in northeast Arnhem Land is the largest eradication project for this ant on mainland Australia. In the interest of sharing knowledge of invasive ant management, Dr. Ben Hoffmann has provided a brief project description as well as the project protocols here for public use. The project protocols are dynamic, and as such are updated from time to time as new knowledge is obtained or as requirements change.

Any queries relating to these documents can be directed to Ben.Hoffmann@csiro.au

Hoffmann, B., pers.commm. 2007b. North east Arnhem Land Yellow crazy ant eradication project

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Summary: The IUCN Red List of Threatened Species provides taxonomic, conservation status and distribution information on taxa that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight those taxa that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable). The IUCN Red List also includes information on taxa that are categorized as Extinct or Extinct in the Wild; on taxa that cannot be evaluated because of insufficient information (i.e. are Data Deficient); and on taxa that are either close to meeting the threatened thresholds or that would be threatened were it not for an ongoing taxon-specific conservation programme (i.e. are Near Threatened).


Summary: Discusses over a dozen of the worst arthropod pests in the South Pacific, with particular emphasis on ants and their control and management.


Summary: A proposal prepared for the Pacific Plant Protection Organisation and Regional Technical Meeting For Plant Protection. This plan aims to prevent the red imported fire ant and other invasive ant species with economic, environmental and/or social impacts, entering and establishing in or spreading between (or within) countries of the Pacific Region.


Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.


Summary: Cette synthèse sur les invertébrés envahissants et potentiellement envahissants dans l’archipel calédonien a été faite dans le cadre d’une expertise collégiale menée par l’IRD.

Lester, Philip I and Tavite, Alapati, 2004. Long-Legged Ants, Anoplolepis gracilipes (Hymenoptera: Formicidae), Have Invaded Tokelau, Changing Composition and Dynamics of Ant and Invertebrate Communities Pacific Science - Volume 58, Number 3, July 2004, pp. 391-401 - Anoplolepis gracilipes

Summary: Available from: http://muse.jhu.edu/journals/pacific_science/v058/58.3lester.pdf [Accessed Jan 20 2006]


