GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Anoplolepis gracilipes***

Anoplolepis gracilipes 简体中文 正體中文 **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Hymenoptera	Formicidae

Common name gramang ant (Indonesian Bahasa), Maldive ant (English, Seychelles), yellow crazy ant (English), Gelbe Spinnerameise (German), crazy ant (English), ashinaga-ki-ari (Japanese), long-legged ant (English)

Synonym
Anoplolepis longipes , Emery 1925
Plagiolepis longipes , Emery 1887
Formica longipes , Jerdon 1851

Similar species

Summary
Anoplolepis gracilipes (so called because of their frenetic movements) have invaded native ecosystems and caused environmental damage from Hawaii to the Seychelles and Zanzibar. On Christmas Island in the Indian Ocean, they have formed multi-queen supercolonies. They are also decimating the red land crab (Gecarcoidea natalis) populations. Crazy ants also prey on, or interfere in, the reproduction of a variety of arthropods, reptiles, birds and mammals on the forest floor and canopy. Their ability to farm and protect sap-sucking scale insects, which damage the forest canopy on Christmas Island, is one of their more surprising attributes. Although less than 5% of the rainforest on Christmas Island has been invaded so far, scientists are concerned that endangered birds such as the Abbott’s booby (Sula abbotti), which nests nowhere else in the world, could eventually be driven to extinction through habitat alteration and direct attack by the ants.

RED LIST

view this species on IUCN Red List

Species Description
Anoplolepis gracilipes is one of the largest invasive ants and are typically small to medium-sized and range from 1-2mm, like *Wasmannia auropunctata*, to more than 5mm (Holway *et al.* 2002). The ant, also known as the long-legged ant, is notable for its remarkably long legs and antennae. *A. gracilipes* workers are monomorphic, displaying no physical differentiation (Holway *et al.* 2002). It has a yellow-brownish body colour, and is weakly sclerotized. Workers have a long slender gracile body, with the gaster usually darker than the head and thorax. It may subdue or kill invertebrate prey or small vertebrates by spraying formic acid.
Please click on AntWeb: *Anoplolepis gracilipes* for more images and assistance with identification. The AntWeb image comparison tool lets you compare images of ants at the subfamily, genus, species or specimen level. You may also specify which types of images you would like to compare: head, profile, dorsal, or label.
Please see PaDIL (Pests and Diseases Image Library) Species Content Page Ants: Yellow crazy ant for high quality diagnostic and overview images.
Please follow this link for a fully illustrated Lucid key to common invasive ants [Hymenoptera: Formicidae] of the Pacific Island region [requires the most recent version of Java installed]. The factsheet on *Anoplolepis gracilipes* contains an overview, diagnostic features, comparision charts, images, nomenclature and links. (Sarnat, 2008)

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 trees (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 to 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'\r\nspecies, resulting in a rapid alteration of ecosystem processes and negative effects on\r\nendemic species. The most notable example concerns the native forests of Christmas\r\nIsland, in which populations of the yellow crazy ant have exploded in recent decades (at\r\nleast 60 years after its initial introduction) (CBD 2003).
Please follow this link for more details on the impacts of yellow crazy ants 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 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', \r\nHarris *et al*. 2005., 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. Please see *Anoplolepis gracilipes information sheet* for more information on biology, distribution, pest status and control technologies. \r\n
Chemical: The toxic principles in ant baits include the so-called "stomach" poisons, hydramethylnon (Maxforce, Amdro), sulfuramid 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

Transported in road vehicles, machinery, boats, and aircraft.Transported in packaging material, timber.Translocated in soil, produce and timber.Transported in soil and produce.Transported in soil, packaging materials, pallets.Deliberate introductions for biological control of plant pests on coconut, coffee and cacao plantations.Transported in goods, packaging, pallets in container. *Anoplolepis gracilipes* has entered Australian ports in sea cargo containers in Cairns and Brisbane, Queensland, Australia and been intercepted in Fremantle, Western Australia.Translocated in soil, produce and timber.Transported in soil, packaging materials, pallets.

Principal source:

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

Review:

Pubblication date: 2009-09-28

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
[1] PALAU
[1] REUNION
[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 whartoni **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**

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AntWeb, 2006. *Anoplolepis gracilipes*
Summary: AntWeb illustrates ant diversity by providing information and high quality color images of many of the approximately 10,000 known species of ants. AntWeb currently focusses on the species of the Nearctic and Malagasy biogeographic regions, and the ant genera of the world. Over time, the site is expected to grow to describe every species of ant known. AntWeb provides the following tools: Search tools, Regional Lists, In-depth information, Ant Image comparision tool PDF field guides maps on AntWeb and Google Earth and Ant genera of the world slide show.
AntWeb is available from: http://antweb.org/about.jsp [Accessed 20 April 2006]
The species page is available from:
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Summary: This plan establishes a national framework to guide and coordinate Australia�s response to tramp ants, identifying the research, management, and other actions necessary to ensure the long term survival of native species and ecological communities affected by tramp ants. It identifies six national priority species as an initial, but flexible, list on which to focus attention. They are the red imported fi re ant (*Solenopsis invicta*), tropical fire ant (*S. geminata*), little fire ant (*Wasmannia auropunctata*), African big-headed ant (*Pheidole megacephala*), yellow crazy ant (*Anoplolepis gracilipes*), and Argentine ant (*Linepithema humile*).
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Summary: The invasive ant risk assessment project, prepared for Biosecurity New Zealand by Landcare Research, synthesises information on the ant species that occur in New Zealand (native and introduced species), and on invasive ants that pose a potential threat to New Zealand.
There is a great deal of information in this risk assessment on invasive ant species that is of global interest, including; biology, distribution, pest status, control technologies.
The assessment project has five sections.1) The Ants of New Zealand: information sheets on all native and introduced ants established in New Zealand 2) Preliminary invasive ant risk assessment: risk scorecard to quantify the threat to New Zealand of 75 ant species. 3) Information sheets on invasive ant threats: information sheets on all ant species scored as medium to high risk (n = 39). 4) Pest risk assessment: A detailed pest risk assessment for the eight species ranked as having the highest potential risk to New Zealand (*Anoplolepis gracilipes*, *Lasius neglectus*, *Monomorium destructor*, *Paratrechina longicornis*, *Solenopsis geminata*, *Solenopsis richteri*, *Tapinoma melanocephalum*, *Wasmannia auropunctata*) 5) Ranking of high risk species: ranking of the eight highest risk ant species in terms of the risks of entry, establishment, spread, and detrimental consequences.
NB. The red imported fire ant (*Solenopsis invicta*) is considered to be the worst ant pest in the world. However, *Solenopsis invicta* was specifically excluded from consideration in this risk assessment as this species has already been subject to detailed consideration by Biosecurity New Zealand
(This invasive ant pest risk assessment was funded by Biosecurity New Zealand and Foundation for Research, Science and Technology. Undertaken by Landcare Research in collaboration with Victoria University of Wellington and Otago Museum)
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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
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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).
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The primary tool offered by PIAkey is an interactive key designed using Lucid3 software. In addition to being fully illustrated, the Lucid key allows users to enter at multiple character points, skip unknown characters, and find the most efficient path for identifying the available taxa. Each species is linked to its own web page. These species pages, or factsheets, are linked to an illustrated glossary of morphological terms, and include the following seven sections: 1) Overview of the species; 2) Diagnostic chart illustrating a unique combination of identification characters; 3) Comparison chart illustrating differences among species of similar appearance; 4) Video clip of the species behavior at food baits (where available); 5) Image gallery that includes original specimen images and live images (where available); 6) Nomenclature section detailing the taxonomic history of the species, and 7) Links and references section for additional literature and online resources.
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Summary: PaDIL (Pests and Diseases Image Library) is a Commonwealth Government initiative, developed and built by Museum Victoria s Online Publishing Team, with support provided by DAFF (Department of Agriculture, Fisheries and Forestry) and PHA (Plant Health Australia), a non-profit public company. Project partners also include Museum Victoria, the Western Australian Department of Agriculture and the Queensland University of Technology. The aim of the project is: 1) Production of high quality images showing primarily exotic targeted organisms of plant health concern to Australia. 2) Assist with plant health diagnostics in all areas, from initial to high level. 3) Capacity building for diagnostics in plant health, including linkage developments between training and research organisations. 4) Create and use educational tools for training undergraduates/postgraduates. 5) Engender public awareness about plant health concerns in Australia. PaDIL is available from : http://www.padil.gov.au/aboutOverview.aspx, this page is available from: http://www.padil.gov.au/viewPestDiagnosticImages.aspx?id=84 [Accessed 6 October 2006]
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