

Science News

from research organizations

Invasion of yellow crazy ant in a Seychelles UNESCO palm forest: Threats and solutions

Date: July 10, 2014

Source: Pensoft Publishers

Summary: The yellow crazy ant *Anoplolepis gracilipes* is ranked amongst the top 100 worst global invasive species and is responsible for catastrophic ecological impacts on islands. A new study examines and assesses the effects and dangers of the introduction of the yellow crazy ant to the unique and often endemic ecosystems of the mature palm forest of the Vallée de Mai, a UNESCO World Heritage Site, on the Seychelles.

Share:

FULL STORY



Yellow crazy ants (*Anoplolepis gracilipes*; bottom left) have invaded parts of the endemic coco de mer (*Lodoicea maldivica*) palm forest on the island of Praslin, Seychelles. Arboreal molluscs (*Vaginula seychellensis*, *Stylodonta studeriana* and *Pachnodus pralines*) and geckos (*Phelsuma astriata*, *P. sundbergi*, *Ailuronyx tachyscopaeus*, *A. trachygaster*) are absent or reduced in numbers in areas where ants are present, suggesting displacement of arboreal endemics by the invasive ants.

Credit: Dennis Hansen (*Ailuronyx trachygaster*), Christopher Kaiser-Bunbury (*Vaginula seychellensis*), Barble Koch (*Phelsuma astriata*), Christopher Kaiser-Bunbury (*Stylodonta studeriana*), Chris Mason-Parker (*Anoplolepis gracilipes*), Christopher Kaiser-Bunbury (*P. sundbergi*, *A. tachyscopaeus*, *Pachnodus pralines*); Centre: Chris Mason-Parker (Vallée de Mai palm forest); CC-BY 4.0

The yellow crazy ant *Anoplolepis gracilipes* is ranked amongst the top 100 worst global invasive species and is responsible for catastrophic ecological impacts on islands. A new study published in the open access journal *NeoBiota* examines and assesses the effects and dangers of the introduction of the yellow crazy ant to the unique, endemic ecosystem of the mature palm forest of the Vallée de Mai, a UNESCO World Heritage Site, on the Seychelles.

The palm forest of Vallée de Mai is a unique ecosystem containing many endemic species, including the iconic coco de mer palm *Lodoicea maldivica*. Impacts of invasive ants can include direct effects such as displaced local species, and indirect effects on key ecological functions such as frugivory, pollination and seed dispersal.

"Although the impacts and ecology of *A. gracilipes* have been well documented in degraded habitats in the Seychelles, little is known about this ant's invasion potential in endemic palm forest ecosystems. Praslin, the second largest granitic island of the archipelago, is home to Seychelles' native mature palm forest. This habitat represents one of the last island palm forest ecosystems in the world and hosts many species that are endemic to Praslin or the Seychelles," explains Dr. Christopher Kaiser-Bunbury, TU Darmstadt, Germany.

According to the new study in the palm forest *Anoplolepis gracilipes* was confined to the north-east of the Vallée de Mai and remained almost stationary between April 2010 and December 2012, with isolated outbreaks into the forest. Infested areas typically had significantly higher temperature and humidity and lower canopy cover.

Despite the limited distribution the study confirms some worrying trends. Abundance and species richness of the endemic arboreal fauna were lower in the *A. gracilipes* invaded area and Molluscs were absent from the invaded area. The current restricted distribution of *A. gracilipes* in this ecosystem, combined with lower abundance of endemic fauna in the invaded area, highlight the need for further research.

"Once an invasive species is established it is often difficult to eliminate or prevent further spread. In the case of *A. gracilipes* in the Vallée de Mai, further research into control or exclusion options, impacts and potential biotic resistance to ant invasion are required in addition to continued monitoring of distribution and abundance," explains Dr. Kaiser-Bunbury.

Chemical control poses a considerable risk to non-target species, such as endemic ants. The study therefore advises promoting and researching resistance of the palm forest by creating and maintaining conditions which restrict *A. gracilipes* populations, such as the removal of introduced broadleaf trees which host high numbers of introduced hemipterans, and targeted control of ant nests in the most disturbed habitats.

Future research should experimentally assess and quantify parameters that ensure the resistance of the unique Vallée de Mai palm forest and its co-evolved plant and animal species.

Story Source:

Materials provided by **Pensoft Publishers**. The original story is licensed under a Creative Commons License. *Note: Content may be edited for style and length.*

Journal Reference:

1. Christopher Kaiser-Bunbury, Harrieth Cuthbert, Rebeckah Fox, Darryl Birch, Nancy Bunbury. **Invasion of yellow crazy ant *Anoplolepis gracilipes* in a Seychelles UNESCO palm forest.** *NeoBiota*, 2014; 22: 43 DOI: 10.3897/neobiota.22.6634

Cite This Page:

 MLA APA Chicago

Pensoft Publishers. "Invasion of yellow crazy ant in a Seychelles UNESCO palm forest: Threats and solutions." ScienceDaily. ScienceDaily, 10 July 2014. <www.sciencedaily.com/releases/2014/07/140710101525.htm>.

Recommended Articles

International Teams Publish Three New Ant Genome Studies

GenomeWeb, 2011

Climate Change Genomics Heats Up

GenomeWeb, 2012

Researchers Receive \$3.7M NSF Grant for Hardwood Tree Genomics

GenomeWeb, 2011

Research Needed to Study Ecological Effects of Synthetic Biology Applications, Report Urges

GenomeWeb, 2014

Genome Sequencing Reveals Low Diversity, Evolutionary Adaptations in Snub-Nosed Monkey

GenomeWeb, 2016

Diagnosing liver cirrhosis with the help of mouth bacteria in the gut

Univadis (UK), 2014

ASTMH: Reemergence of Eastern equine encephalitis virus in the Northeastern U.S.

Univadis (UK), 2013

Researchers warn of imminent chikungunya invasion

Univadis (UK), 2014

ASTMH: Malaria from monkeys now dominant cause of human malaria hospitalizations in Malaysia

Univadis (UK), 2014

ECFC: Genome sequence of the Danish epidemic strain of *Achromobacter ruhlandii*

Univadis (UK), 2014

Powered by

Free Subscriptions

Get the latest science news with ScienceDaily's free email newsletters, updated daily and weekly. Or view hourly updated newsfeeds in your RSS reader:

 Email Newsletters

 RSS Feeds

Follow Us

Keep up to date with the latest news from ScienceDaily via social networks:

 Facebook

 Twitter

 Google+

 LinkedIn

Mobile Apps

Get the latest news from ScienceDaily via our free mobile apps, available for download on the following platforms:

 iPhone/iPad

 Android

Have Feedback?

Tell us what you think of ScienceDaily -- we welcome both positive and negative comments. Have any problems using the site? Questions?

 Leave Feedback

 Contact Us

[About This Site](#) | [Editorial Staff](#) | [Awards & Reviews](#) | [Contribute](#) | [Advertise](#) | [Privacy Policy](#) | [Terms of Use](#)

Copyright 2016 ScienceDaily or by third parties, where indicated. All rights controlled by their respective owners. Content on this website is for information only. It is not intended to provide medical or other professional advice. Views expressed here do not necessarily reflect those of ScienceDaily, its staff, its contributors, or its partners.

