

## **Brown tree snake could mean Guam will lose more than its birds**

August 21, 2008 [Vince Stricherz](#)

### **Text Mark Up Directions:**

1. Preview and number the paragraphs.
2. Read once and circle the vocabulary terms- define/synonym in margin.
3. Reread and highlight the main points (per paragraph) and paraphrase in the margin.

#### Annotations

In the last 60 years, brown tree snakes have become the embodiment of the bad things that can happen when invasive species are introduced in places where they have few predators. Unchecked for many years, the snakes caused the extinction of nearly every native bird species on the Pacific island of Guam. A variety of other damage has been directly attributed to brown tree snakes, including large population losses among other native animal species in Guam's forests, attacks on children and pets, and electrical power outages.

But new research by UW biologists suggests that indirect impacts might be even farther reaching, possibly changing tree distributions and reducing native tree populations, altering already damaged ecosystems even further. "The brown tree snake has often been used as a textbook example for the negative impacts of invasive species, but after the loss of birds no one has looked at the snake's indirect effects," said Haldre Rogers, a UW doctoral student in biology. "It has been 25 years since the birds disappeared. It seems to me the consequences are going to keep reverberating throughout the community if birds are fundamental components of the forest," she said.

Birds typically make up a small part of the life of a forest, but they are important for pollination, spreading seeds around the forest and controlling insects that feed on plants. Guam, an island 30 miles long and 5 to 15 miles wide about 3,800 miles west of Hawaii, lost most of its native birds after the brown tree snake was introduced by accident from the Admiralty Islands following World War II. The snake has few predators on Guam, so its population density is quite high — estimated at more than 3,000 per square mile — and some individuals there grow to an unusual size of 10 feet long.

Before introduction of the brown tree snake, Guam had 12 species of native forest birds. Today 10 of those are extinct on Guam, and the other two species have fewer than 200 individuals. Though Guam has some non-native bird populations, few other birds moved in when native species died out, and none of them live in the forest. That leaves few birds to consume tree seeds and then drop them away from the trees.

That could have two possible negative impacts on the native forests, Rogers said. First, some plant species need birds to handle their seeds to ensure effective germination. In addition, seed predators and fungi that kill seeds are often found in high density directly beneath a parent tree, so the trees rely on birds to disperse seeds beyond the range of those negative effects. If native birds performed those functions on Guam, tree populations could suffer from the loss of birds. It appears 60 percent to 70 percent of tree species in the native forests are dispersed, at least in part, by birds, she said.

Further research, Rogers believes, could turn up other indirect impacts the brown tree snake has had on Guam. For example, she notes anecdotal evidence that there is a substantially higher spider population on Guam than on other nearby islands, and she speculates that could largely be because the native bird population has been decimated.

But the biggest indirect impact, she said, could be altered seed scattering that in turn might, in the near future, transform the remaining forest from a diverse mixture of tree species to clumps of trees of the same species, separated by open space. That could have serious consequences, including extinction, for plant and animal species that still live in the forests.

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<http://www.washington.edu/news/2008/08/21/brown-tree-snake-could-mean-guam-will-lose-more-than-its-birds-2/>

### **Follow Up Questions**

1. What is the 'problem' animal in this article AND what problems is it causing?
2. Guam? Where is that? What does the article tell us about the island?
3. The term "invasive species" is used to describe the brown tree snake. Where did it invade from? Research how it got there.
4. How do native birds support the spread of tree seeds?
5. How are the snakes affecting the bird population? How will that change in birds transform the remaining forests?

Extension:

6. The town of Windsor covers 7.3 square miles. Given the estimated density of Brown Tree Snakes in Guam of 3,000 snakes per square mile, how many snakes would Windsor have?