

Study shows captive breeding no help to endangered woodrat

January 24 2014, by Brad Buck

(Phys.org) —Captive breeding of the endangered Key Largo woodrat may not be the best solution to preserve the ecologically important rodent, an animal driven to near extinction by development, a new University of Florida study shows.

Using a computer model, scientists developed a [captive breeding](#)-and-release program to see if adding captive-reared animals outweighed the loss of rats from the wild. But it did not, the study said.

Robert McCleery, UF assistant professor in wildlife ecology and conservation and co-author of the study, estimated that fewer than 500 of the woodrats remain. That's down from U.S. Fish and Wildlife Service estimates of about 6,000 in 1984.

Federally endangered Key Largo woodrats are important to the ecosystem because they spread seeds in a unique forest ecosystem, their stick nests create shelter and habitat for other species and they are important prey for other species, such as snakes and hawks.

Researchers simulated what woodrats would do in the wild, how they behave in captivity and what happens when they're released back into their natural habitat, said McCleery, a faculty member in UF's Institute of Food and Agricultural Sciences.

"When we kept looking at the data, what we found was that you really couldn't breed enough woodrats to make it a viable strategy for

population recovery," he said.

Woodrats usually reproduce in the wild, two times a year, with litters of three or four, McCleery said. In captivity, they averaged less than one offspring per female per year, he said. When some animals are not in their natural environments, meaning they don't eat their usual foods or respond to their usual cues – they don't reproduce, he said.

However, there may be a silver lining from the study. Researchers suggested a captive breeding program may help buffer the woodrat population against catastrophic events such as hurricanes or drought.

The woodrat, declared endangered in 1984 by the U.S. Fish and Wildlife Service, builds and lives in stick nests in tropical hardwood hammocks on about one-third of Key Largo.

Commercial and residential development in the Keys, especially on Key Largo, eliminated much of the woodrat's habitat, according to the fish and [wildlife service](#). Land has been set aside to protect the woodrat, but even with the protection, its small population and fluctuations make it vulnerable to extinction, McCleery said. Conservationists fear those protections won't be enough.

The [fish and wildlife service](#) established captive breeding colonies and a release program in 2002 at Tampa's Lowry Park Zoo and at Disney's Animal Kingdom. When fish and wildlife officers released them, they were much more susceptible to being killed by predators than a normal woodrat.

"In captivity, they can become habituated to people," McCleery said. Normally, animals should be scared of people, he said. "If you get them to stop responding to scary things, they stop responding to other scary things, like hawks and cats and other natural predators."

The study is published in the January issue of the journal *Biological Conservation*.

Provided by University of Florida

Citation: Study shows captive breeding no help to endangered woodrat (2014, January 24)
retrieved 26 June 2024 from <https://phys.org/news/2014-01-captive-endangered-woodrat.html>

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