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# THE TALE OF MARSH RABBIT

WHILE LOW KEY MARSH RABBITS IN FLORIDA ARE DISAPPEARING, ENDANGERED-SPECIES BIOLOGIST ERIC HOFFMAN IS USING POPULATION GENETICS TO HELP THE CAUSE OF THEIR CONSERVATION. HE SPEAKS TO TIRNA RAY



Declared as an endangered species in 1990, the disappearance of lower keys marsh rabbits in Florida can be attributed to habitat loss and fragmentation of populations during the

past 20 years of development in the lower keys.

An assistant professor in the department of biology, University of Central Florida, Eric Hoffman is working with the US Fish and Wildlife Service on the conservation genetics of Hefneri — the most recently recognised subspecies of the marsh rabbit. Hoffman explains that as more people have moved into the keys, they have also brought in the effects of predation by feral cats as well as road mortality caused by increased traffic.

Habitat loss and fragmentation can render a species vulnerable to loss of genetic diversity, mainly due to smaller population sizes and increased dispersal barriers. According to Rosanna Tursi, a Master's student in Hoffman's lab working on this specific species, such genetic deterioration can affect the long-term sur-

vival of a species. The species will lack the diversity they need to adapt to variable conditions. Additionally populations that are composed of few individuals can become subject to inbreeding, where individuals mate with close relatives. In small inbred populations, harmful genes can be expressed that may hurt the long-term survival of the species, Hoffman adds.

According to the US Fish & Wildlife Report, marsh rabbits require a specific habitat for survival, usually restricted to relatively undisturbed wetlands. Lower keys marsh rabbits can be mostly found in the grassy marshes and prairies in the lower keys. Overall, such rabbits prefer areas with a high amount of clump grass and thick ground cover for foraging, protection and nesting, as well as areas that are close to large bodies of water. The report also says that they feed throughout the year on a variety of vegetation in proportion to its abundance.

As to the estimated number of these rabbits left in the wild in Florida, Hoffman says that the latest estimate was obtained in 1991, with approximately 300 rabbits remaining. "Although this estimate is old, we think it is quite accurate. Current estimates predict that between 100 and

300 of these rabbits remain," he adds.

The US Fish and Wildlife Service is planning to reintroduce rabbits into patches of suitable habitat that are currently unoccupied within the lower keys. "Surveys are currently underway to determine the best areas for reintroductions," Hoffman says.

The field work, elaborates Hoffman, involves capturing rabbits using traps that are only set at night. Genetic samples in the form of hair follicles are taken from each rabbit. Additionally, each rabbit is sexed, weighed and measured for purposes of information data. The rabbits are then immediately released on the capture site. As Hoffman points out, "The trapping success is low, mostly because rabbits are not visual foragers and, therefore, it is difficult to lure them into the traps. This has resulted in long trapping periods with low numbers of catches."

The greatest hurdle, Hoffman says, is the collection of samples. These rabbits are few and hard to collect. "We only collect hair so as not to harm these endangered rabbits," he adds.

The genetic aspect of the project that Hoffman and his team is currently working on should be completed by summer 2010. As to the



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kind of impact the research is likely to have in the future, Hoffman says that it is going to be beneficial for the survival of the low keys marsh rabbits.

"We hope that we can determine which population would make for a successful translocation

and that translocated rabbits will thrive in their new habitat," he says. Additionally, he adds, this study is likely to help in the management of other threatened or endangered species by providing a model for future conservation and reintroduction efforts.