

Researchers help 'extinct in the wild' toad return home

November 1 2012, by Beth Gavrilles

(Phys.org)—Scientists from the University of Georgia Savannah River Ecology Laboratory have helped to reintroduce a species of toad declared extinct in the wild to its native range—the world's first reintroduction of an extinct-in-the-wild amphibian. Kurt Buhlmann, an associate research scientist, and Tracey Tuberville, an assistant research scientist, both with the SREL, were part of a team that on Oct. 30 released 2,500 Kihansi spray toads into their historic habitat—a five-acre waterfall spray zone in the Kihansi Gorge in Tanzania.

Discovered by scientists in 1996, the thumbnail-sized golden-colored amphibian was restricted to the smallest known range for any [vertebrate species](#) and had an estimated historic wild population of 17,000 toads. It was officially declared extinct in the wild by the International Union for the Conservation of Nature in 2009.

The species' [rapid decline](#) followed the construction of an upstream [hydroelectric dam](#) that resulted in a nearly complete loss of the "spray meadow" habitat that the species depended on—and coincided with the emergence of the amphibian chytrid fungus, a disease implicated in amphibian extinctions in several parts of the world.

In 2000, at the invitation of the [Tanzanian government](#), 499 toads were collected and transferred to the [Wildlife Conservation Society's Bronx Zoo](#) and later the Toledo Zoo to initiate a captive breeding program, which now has more than 6,000 toads.

In 2010, a captive colony of Kihansi spray toads was established in Tanzania by the University of Dar es Salaam and by researchers from the National Environmental Management Council of Tanzania who had facilities constructed specifically for the conservation of the small toad in Dar es Salaam and at the base of the Kihansi Gorge.

"Most reintroductions for amphibians and reptiles have been designed to establish or augment a population of a rare species, but it is extremely exciting to be involved in actually returning a species that was extinct in the wild back to its native habitat," said SREL researchers Buhlmann and Tuberville in an email from the field.

SREL has been an important center for herpetological research since 1967, with emphases on ecotoxicology, wetlands ecology and applied conservation and management. Buhlmann and Tuberville, both experts in species conservation, reintroduction and management, also are associate conservation scientists with the nonprofit Global Wildlife Conservation, which helped coordinate the project.

Prior to the reintroduction, several initiatives were undertaken to restore the Kihansi Gorge ecosystem. These included the installation of an expansive misting system designed to replicate the spray zone habitat that was lost after dam construction and the building of bridges and walkways to facilitate monitoring of the gorge. Funded by the World Bank and the Government of Norway, the misting system has been running since late 2000 in order to restore and maintain the native vegetation that the toads once lived in and the invertebrates they used for food.

"This project is a shining example of international collaboration, linking tremendous effort by the Tanzanians to recreate the unique habitat, with successful captive breeding programs, and a scientific approach to implementing the reintroduction for a species that was nearly lost,"

Tuberville and Buhlmann said.

According to Don Church, president of Global Wildlife Conservation, a third of the world's approximately 7,000 amphibian species are threatened with extinction, and hundreds of species are thought to have gone extinct within the past few decades due to habitat loss, disease and other factors.

"The reintroduction of the Kihansi spray toad represents a tremendous success story in amphibian [conservation](#) thanks to swift action by the Tanzanian government and an international effort by collaborating organizations," Church said. "It is one of only a handful of amphibian [species](#), globally, to have been saved from extinction through an intensive [captive breeding](#) program. Now that it has returned to its restored habitat, the Kihansi spray toad represents the world's first reintroduction of an extinct-in-the-wild amphibian."

Provided by University of Georgia

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