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For US Amphibians, Recent African Disease Study Serves as Warning and Highlights Importance of Protecting Habitat

National Nonprofit Helps Safeguard Amphibians from Disease Across the US

UNITED STATES, August 6, 2024 - A new study revealing that a strain of chytrid fungus (*Bd*CAPE) resulted in the extinction from the wild of the Kihansi spray toad in Tanzania points to the urgent need to buffer the US's amphibians against the same fate. To do so, the Amphibian and Reptile Conservancy (ARC), a national nonprofit to conserve imperiled wildlife, is strategically working on the ground to bolster amphibians against disease across the country.

In the US, several amphibians are as close to the brink as the Kihansi spray toad was before disease ultimately caused its demise, including the Carolina gopher frog, Chiracahua leopard frog, and Houston toad.

This new research demonstrates how the Kihansi spray toad's extinction from the wild was caused by a combination of habitat destruction, first, and then the subsequent arrival of *Bd*CAPE, a lineage of a chytrid fungus called *Batrachochytrium dendrobatidis*, or *Bd* for short.

"This lineage's lethal impact on the Kihansi spray toad underscores the broader dangers posed by chytrid fungus, namely that rapid habitat changes and environmental stresses compound its impacts—in this case, with tragic results," stated ARC Executive Director JJ Apodaca.

Bd is widespread throughout the US and other countries around the world. Over the past 30 years, it has resulted in worldwide declines in one of every 16 known amphibian species. In all, *Bd* has infected more than 500 amphibian species.

Because of the prevalence of the fungus, ARC's strategy is to help amphibian populations cope with the new normal of *Bd* in their habitats. The organization's place-based approach of establishing Priority Amphibian and Reptile Conservation Areas (PARCAs) across the US, together with its conservation and habitat restoration efforts, buffer amphibian populations against the disease the *Bd* causes, chytridiomycosis.

ARC National Program Director José Garrido explained, "ARC's targeted, on-the-ground conservation actions increase the size, connectivity, and frequency of amphibian populations across the landscape."

This is critical because each environmental threat, be it climate change, habitat destruction, loss of prey, or invasive species, makes fighting off disease at the population level more difficult. "Often, chytrid is not a death sentence; rather, it's the straw that breaks the frog's back," said Garrido.

ARC's work is focused on bolstering amphibians against *Bd* by increasing the number of populations, growing population sizes, and connecting populations so that genes can flow and inbreeding is less likely.

Much of the nonprofit's work involves restoring and protecting habitats in PARCAs. "When habitats are healthy, populations of native species tend to be healthy, too," stated Apodaca.

High-quality habitats are key to increasing population sizes and the number of populations on the landscape. To further boost populations, ARC also carries out targeted, strategic measures.

For example, for state-listed Endangered Carolina gopher frogs in South Carolina, ARC and partners employ a technique called headstarting. This involves collecting eggs from the wild, rearing them in captivity until the tadpoles metamorphose into young frogs, and then releasing them when they're past the most vulnerable stages to give them their best chance of survival.

Headstarting is also underway for the federally listed Threatened Chiracahua leopard frog in New Mexico and Arizona. In addition, the organization is focused on the removal of invasive American bullfrogs and crayfish, both of which have had a devastating impact on this species.

For federally Endangered Houston toads in Texas, ARC and partners pair reintroduction efforts with widespread habitat protection and improvement.

ARC's multi-faceted, large-scale approach aims to ensure than amphibian populations in the US are resilient, capable of withstanding the pressures of disease and environmental change, before it's too late. "The new research into the causes of the Kihansi spray toad's extinction serves as a stark reminder of the urgent need for comprehensive conservation efforts," said Apodaca. "For us, news like this is also personal, strengthening our resolve to keep fighting to make sure that the same never happens to any of the amphibians in the US."

About Amphibian and Reptile Conservancy (ARC)
Amphibian and Reptile Conservancy, or ARC, is a 501(c)(3) nonprofit focused on identifying and conserving the highest priority places for amphibians and reptiles in the United States. We protect endangered amphibians and reptiles through a strategic, scientific, and passionate approach. We believe the conservation of amphibians, reptiles, and the habitats they depend on is vitally important. To learn more, visit ARCProtects.org.

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