

Working to save the frogs of Panama

By Brooke Wardrop

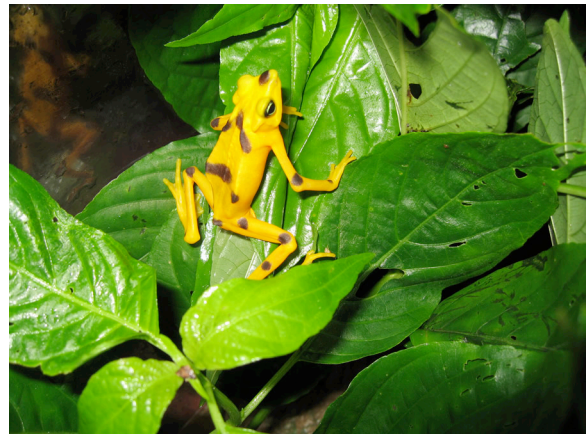
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The frogs of Panama are dying at an alarming rate from chytridiomycosis, a fungal disease that humans very probably helped spread. The disease, which has already swept through Costa Rica, is making its way through Panama at about 17 miles a year.

Last fall, Zoo New England added the El Valle Amphibian Conservation Center in El Valle de Anton, Panama to its list of conservation projects when it sent zookeeper John Berkholtz and Associate Veterinarian Dr. Eric Baitchman to assist in the center's amphibian rescue mission. They witnessed firsthand the devastating loss of species in Panama.

The crisis has been linked to the global trade of African clawed frogs, which are popular in laboratories and pet stores, and are also carriers of the disease. Global warming may be compounding the problem by making chytrid easier to spread.

Amphibians are incredibly affected by their environment because their skin is so permeable – under some circumstances the animals breathe and drink through their skin. Chytrid fungus grows on the frog's skin, essentially suffocating it. Entire species are disappearing. It is predicted that the Panamanian golden frog – the country's national animal, will become extinct by next year.



Panamanian Golden Tree Frog

“We’re witnessing one of the biggest mass extinctions in the environment since the dinosaurs. They’re the canary in the coal mine. Amphibians are very sensitive to changes in their environment. They depend very heavily on environmental quality and water quality,” Baitchman said. “Things start to deteriorate on a level we’re not even able to appreciate. We don’t know what this will mean down the line because the ecosystem is so interconnected. It’s all sort of a chain reaction.”

The El Valle Amphibian Conservation Center was designed to be a model program to study whether frogs could be taken from the wild and a captive colony assurance program could be established. When this crisis occurred before the center was ready, program operators had to act quickly.

The collection effort has yielded more than 200 specimens representing 40 species of frogs, including the Panamanian golden frog, the horned marsupial frog, Palmer's tree frog, crowned tree frog, heredia tree frog and the lemur tree frog. While in Panama, Berkholtz and Baitchman also assisted with the daily care of the frogs, and were involved with collecting and disinfecting browse to prevent further fungal spread.

Baitchman also helped to establish a veterinary care program. He taught some of the volunteers and staff how to examine the frogs' fecal matter for parasites, and he helped them establish medical protocols to keep the frogs healthy. While treatment is available for the fungus, there is no inoculation to protect the frogs from contracting it in the first place. The only way to ensure their survival is to keep them in captivity.

This past March, Baitchman returned to El Valle de Anton to continue assisting with the health program he had established.

Frogs, which represent the most diverse taxa of all amphibians, are critical to the ecosystem because they prey on insects. If the frogs die off, insects will increase. Because insects are vectors for disease, humans could, in turn, be affected. "People need to realize they are tied into this ecological web whether they pay attention to it or not, and what affects the frogs affects us," Baitchman said.

Researchers have said that places where they were doing their fieldwork were alive and vibrant a few months ago. Now, these areas are silent.

"Panama is a biodiversity hot spot. We're talking about an entire class of species here. It's at an absolute crisis stage. Species are going extinct overnight," said John Linehan, President and CEO of Zoo New England. "If we didn't react and assist almost immediately, it would be too late. It truly is a global crisis."

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