



# Creating Backyard Ponds and Restoring Habitat for Lowland Leopard Frogs

## Importance

Few people realize that the hidden desert waters in Saguaro National Park contain a rare frog, the lowland leopard frog (*Rana yavapaiensis*). This tough desert survivor occurs in only a few isolated populations, all in the Rincon Mountain District. The aquatic frog must stay wet, and lives in spring-fed bedrock pools (tinajas) that contain water year-round. The frogs are declining throughout their range, and are threatened outside the park by habitat loss and introduced species, such as bullfrogs and crayfish. Within Saguaro



The lowland leopard frog

National Park, large wildfires, thought to be more severe than they were historically due to years of fire suppression, can have an impact on frogs when they burn forest soils. These soils flow downstream during floods, filling tinajas and sometimes eliminating

them as frog habitat for many years.

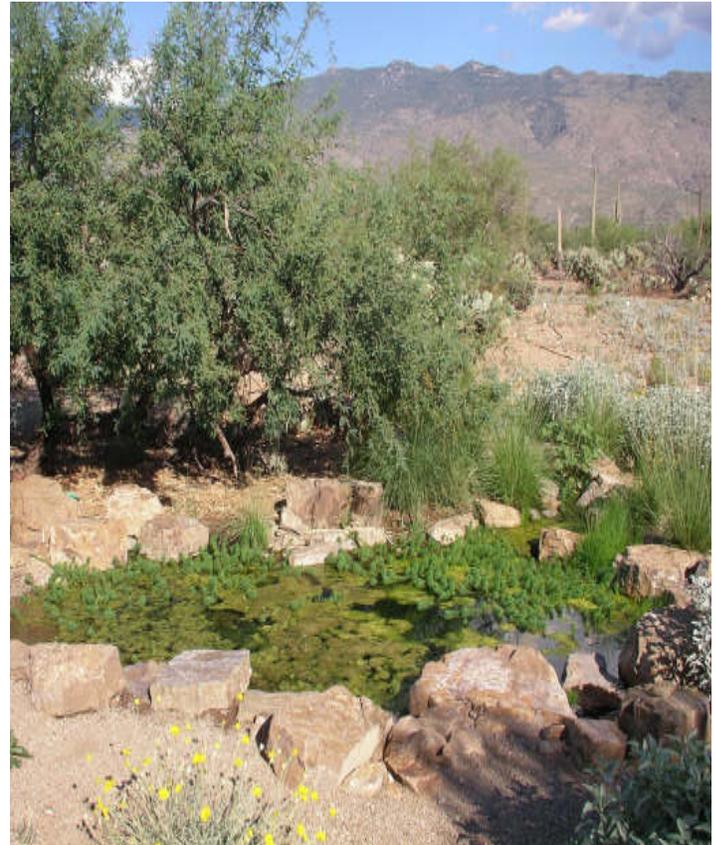
This on-going project, initiated in 2004, is a partnership between Saguaro National Park, the Arizona Game and Fish Department, University of Arizona, Tucson Herpetological Society, Rincon Institute, and the Tucson Herpetological Society. It is designed to involve park neighbors and volunteers in improving the chances of survival for this interesting desert animal in Saguaro National Park.

## Quick Facts

Mosquitos can be a problem in Tucson after summer rains, and carry the West Nile virus. Native fish such as long-finned dace and Gila topminnows can control mosquitos by eating their aquatic larvae.

Lowland leopard frog tadpoles require long periods in water before becoming frogs – up to 9 months or more.

Other native aquatic species that use tinajas include the canyon treefrog, Sonoran mud turtle, black-necked garter snake – as well as wildlife such as mountain lions, mule deer, bats, and blue-green swallows, which come to tinajas to drink or bath.



Backyard pond habitat for leopard frogs

## Project

A number of park neighbors have stepped forward to host leopard frog populations in their backyard ponds. Volunteers help to dig the ponds, and the pond owners agree to invest in equipment such as water pumps, pool liners, and native landscaping. The partners work together to stock the ponds with leopard frogs and native fish (for mosquito control). Although there have been problems with predation of frogs by bullfrogs, as well as native raccoons and birds, lowland leopard frogs and fish have reproduced in more than 8 backyard ponds since 2005. We are now working to help the frogs by creating more places for them to hide from predators, especially in winter.

A second part of the project has been to experimentally excavate tinajas that have filled with sand. Volunteers have dug out the sand beginning in 2005,

re-excavating them when floods re-filled them in 2006 and 2009. Although the results of this project have been mixed, frogs did return to a stream where they had been completely absent for over 5 years. Most importantly, they have successfully reproduced in two of the excavated tinajas, suggesting that excavations may help to “buy time” for the frogs during dry periods.



Tinajas in park before (left) and during (right) experimental excavation by volunteers



Backyard pond construction in progress

### Discussion

The tinaja excavation and backyard pool project have both been experimental approaches to mitigate the loss of leopard frog habitat in Saguaro National Park. Both have had encouraging results, and biologists have been moving cautiously forward to expand the project and learn lessons that can be applied to conservation efforts elsewhere. Within the park, biologists continue to monitor frog populations, and plans are being developed for relocating frogs from the backyard ponds into an area where lowland leopard frogs once occurred but are now absent. In addition, scientists are studying the long-term dynamics of fire, sediment, water, and leopard frogs throughout Saguaro National Park. The goal is to sustain springs and tinajas, and the unique plant and animals that they support, so that park visitors of the future can enjoy these interesting and unique desert waters.



Native wildlife use these backyard ponds for their water



Stocking native fish for mosquito control

### More Information

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