

Backyard Ponds and Exotic Pests

A new danger is threatening what's left of Arizona's streams and wetlands.

This threat has a direct link to some of us who love aquatic plants and animals. Bullfrogs and crayfish are non-native, aquatic animals that don't fit into the complex, natural cycle of Southwestern river systems. Bullfrogs are voracious predators that eat any animal they can cram into their large mouths. Crayfish will eat any organism they can catch and will strip a stream of its aquatic plants, turning a clear stream into a muddy slough. Both reproduce prolifically and both have been released into natural riparian areas by well-meaning individuals, intentionally and accidentally.



Bullfrogs raise havoc with Arizona's native animals. This adult bullfrog was caught while eating a bat.

A stream in northern Arizona before an unsuspecting fisherman dumped in his bait bucket of crayfish. Two years later, hungry crayfish have denuded the stream of vegetation and clouded the water. Efforts have been underway since 1995 to remove the crayfish, but the task is proving to be next to impossible.



C. Schwalbe

P. Rosen



Before Crayfish

J. Rosen



After Crayfish

P. Fernandez

Why you don't want a bullfrog in your pond

- Bullfrogs eat desired wildlife like birds, small mammals, dragonflies, butterflies, native frogs, fish and turtles.
- Bullfrogs reproduce prolifically. One egg mass will typically contain thousands of eggs.
- Bullfrogs spread to neighboring wetlands and gardens. The thousands of eggs hatch into thousands of tadpoles, and the tadpoles transform into thousands of juvenile bullfrogs, which may disperse as soon as the rainy season starts. Some of these frogs travel over 3 miles in search of a new home.
- Bullfrogs, unlike native leopard frogs, have a loud call that may disturb you or your neighbors at night.

Why you don't want Crayfish in your pond

- Crayfish, also known as crawdads, eat aquatic plant and animal life, including lily pads, iris, snails, tadpoles, frogs, baby turtles and fish.
- Crayfish cloud water by destroying the plants that filter and oxygenate it.
- Crayfish erode edges of ponds by digging tunnels and uprooting plants.

Why bullfrogs and crayfish are a threat to Arizona's wetlands.

As more southern Arizonans build homes closer to natural wetlands and mountain canyons, these aquatic pests are escaping from garden ponds and golf course lakes and spreading to wild areas. Once these animals are established, ongoing efforts to remove them from natural wetlands are proving to be extremely difficult.

Introduced species disrupt the delicate balance of life. Many species of Arizona's native frogs are in danger of extinction. Many other native animals, like the black hawk, rely on abundant populations of leopard frogs as a regular food source. Crayfish kill small leopard frogs, tadpoles and eggs, while bullfrogs can eat even the largest adult leopard frogs. This, in combination with widely introduced non-native fish and loss of habitat has wiped out most populations of leopard frogs in Arizona. Gone are the days of seeing thousands of leopard frogs hopping from the banks of a stream like popcorn.

Arizona laws regarding crayfish and bullfrogs

- It is against the law to release any organism (plant or animal) into Arizona waters without permission from the state.
- It is illegal to transport live bullfrogs or crayfish throughout almost all of Arizona.
- You can legally harvest unlimited numbers of bullfrogs and crayfish with a valid Arizona fishing license (see reptile and fishing regulations for current limitations).

What you can do

- Be a responsible water gardener. If you have a pond or water garden, and don't have bullfrogs, bullfrog tadpoles, and/or crayfish, take precautions to keep them out. If you fear a neighbor might be less cautious, you can install a smooth-surfaced three to four foot garden wall as a barrier to keep out unwanted exotics.
- If you already have bullfrogs, bullfrog tadpoles and/or crayfish, take appropriate measures to eliminate them before they can do any damage. Small ponds should be drained, letting the liner dry out completely to ensure that any pests have been eliminated. This might take as long as 3 weeks. Do this during the summer dry season (May-June) to reduce the likelihood of these animals relocating in your neighbor's yard or a nearby natural area. You should also transplant your water plants, as crayfish often burrow into water plant containers.
- If you have concerns about a large pond, it would be best to consult a professional. You can call the Arizona Game & Fish Department or the University of Arizona to get help (the phone numbers are listed below). Bullfrog

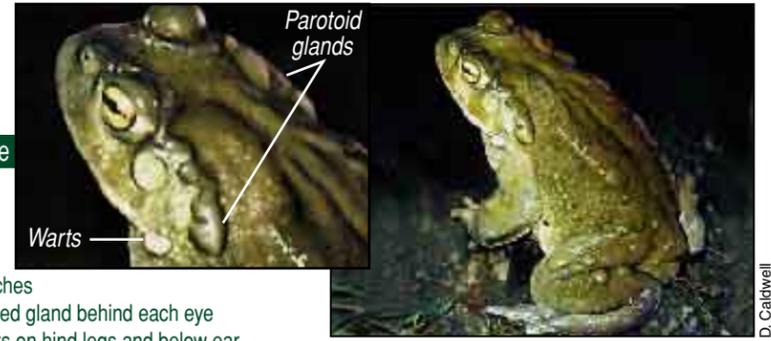


Introduced Crayfish • Size 0.25 to 5 inches
• Coloration is usually gray or brown, but sometimes red or green.

Arizona Native

Sonoran Desert Toad

- Size 4 to 7 inches
- Large elongated gland behind each eye
- Enlarged warts on hind legs and below ear
- Slow and easy to approach
- Call is a series of quiet low-pitched hoots



D. Caldwell

Introduced

Bullfrog

- Size 3 to 8 inches
- Indistinct markings
- Large prominent eardrum
- Young will "peep" when fleeing
- Call is a deep-pitched bellow "br-wam" carries for quite a distance

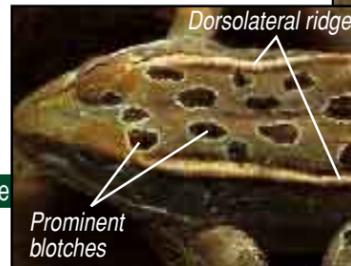


C. Schwalbe

Arizona Native

Leopard Frogs

- Size 2 to 5 inches
- Prominent blotches on back
- 2 prominent ridges along back
- Young do not peep when fleeing
- Calls are snorelike, lasting 1 to 2 seconds



Lowland Leopard Frog
Sometimes brown with no green

Chiricahua Leopard Frog
Sometimes dark green or almost black

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P. Fernandez

and crayfish eradication is of great concern and state biologists will enthusiastically help you evaluate the undertaking.

- Help spread the word among other water gardeners and water garden retailers. Most bullfrogs and crayfish come into the state unintentionally with shipments of water plants and fish from the southeastern United States. Some animals are sold or given away as pets and others stowaway on water plants to someones backyard pond.

This information is a cooperative venture between Pima County, the Tucson Herpetological Society and the Department of Ecology and Evolutionary Biology, Wildlife and Fisheries Resources in the School of Renewable Natural Resources, University of Arizona. Funded by Arizona Game and Fish Department and Pima County Flood Control District. Written and designed by Dennis Caldwell, 2001

