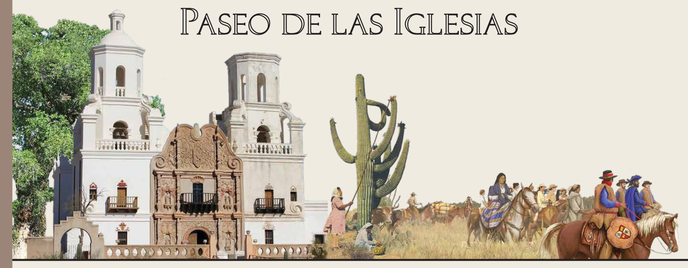


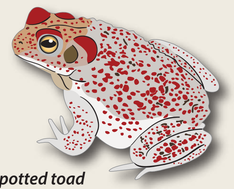
Mesquite Circle Pond and Bosque

The terrain in front of you captures rainfall and stormwater runoff to support the short-lived, or "ephemeral," Mesquite Circle Pond and a mesquite forest, or "bosque." These features provide high quality habitat for amphibians, smaller aquatic animals, birds, and reptiles.

Charco

The water hole, or "charco," provides essential summer breeding habitat for native frog and toad species:

- Couch's spadefoot
- Mexican spadefoot
- Great Plains narrow-mouthed toad
- Great Plains toad
- Sonoran Desert toad
- Red-spotted toad



Red-spotted toad

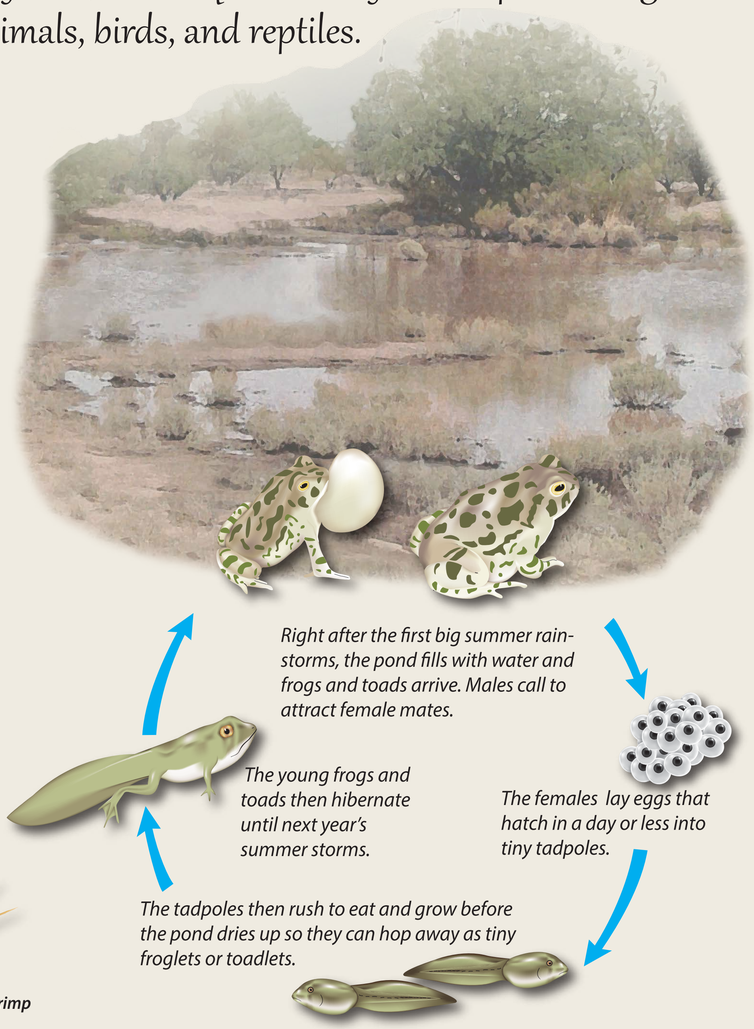
Right after the first big Sonoran Desert's summer monsoonal thunderstorm, the charco fills with water and frogs and toads arrive from surrounding areas where they were hibernating in shallow burrows underground. Males call to attract female mates, who then lay eggs that quickly hatch into tiny tadpoles.

Some of our native amphibian species spend only 8–12 days as eggs and tadpoles, while others take twice as long. These differences in maturation rate allow different amphibian species to co-exist ecologically. The tadpoles grow fast, before the pond dries up, so they can hop away as tiny froglets or toadlets to find refuge and grow to adults.

The eggs of aquatic predators that have been residing in the soil come to life as soon as the charco fills with water. Native predator populations include small crustaceans and aquatic insects:

- Tadpole shrimp
- Diving beetles
- Dragonflies and damselflies
- Backswimmers

Diving Beetle *Tadpole Shrimp*



Natural succession of aquatic predators also affects amphibian species diversity, as some of these predators prey on small tadpoles. Many aquatic predators also eat mosquito larvae, providing very effective mosquito control. Natural ponds must occasionally sustain open water for at least a couple weeks, otherwise the beneficial predators are unable to reach maturity and lay eggs, so their populations could eventually die off.

Restored Mesquite Bosque

A hundred years ago and more, mesquite woodland, or "bosque," was widespread in the floodplains of the Santa Cruz River at Tucson, San Xavier Mission, and further south. The bosques depended on shallow groundwater and a permanent or "perennial" river, which no longer occurs and cannot be restored here today. The Mesquite Circle Pond has been enhanced with water harvesting elements to capture more stormwater run-off increasing the likelihood of ponding and beneficial predators. Overflow and bottom drains have been installed for better resource management.

The former bosque supported many tropical and aquatic species. Gray hawks, caracaras, yellow-billed cuckoos, and summer tanagers lived here. So did leopard frogs, desert box turtles, giant spotted whiptail lizards, and six species of fishes. Tropical cats like the ocelot and jaguar were likely present.

The restored mesquite bosque is now supported by stormwater instead of groundwater. This takes about three feet of water per year; Tucson only gets about one foot of rain per year, so two additional feet of stormwater capture are needed. The restored bosque provides habitat for numerous birds that need protection in the Tucson area:

- Bell's vireo
- Abert's towhee
- Lucy's warbler
- Pyrrhuloxia
- Ladder-backed woodpecker
- Rufous-winged sparrow

Pyrrhuloxia

PIMA COUNTY