

Arizona's riparian communities: miracles, not mirages



San Pedro River

Cottonwood, willow trees are well-rooted in Arizona's riparian areas

The cottonwood-willow forests of Arizona's riparian communities are considered some of most important native habitats in North America. These two related trees, from the *Salicaceae* family, are perfectly adapted to survive the vagaries of life along a free-flowing river. In fact, to reproduce successfully,

they require periodic flooding. Seeds released to the winds in early spring find perfect conditions for germination in nutrient-rich silt left by the high waters that follow winter rains and spring snow melt in the mountains.



However, these forests are in decline today. They're threatened by dropping groundwater tables, the diversion of stream flow and construction of flood control devices, livestock grazing, and competition from nonnative species like the salt cedar.

Major Riparian Areas in Southern Arizona

Gila River

- A Bonita Creek
- B San Simon Creek

Santa Cruz River

- C Cienega Creek
- D Sonoita Creek
- E Rillito River
- F Sabino Canyon

San Pedro River (pictured above)

- G Aravaipa Creek
- H Babocomari River



vermilion flycatcher



Frémont cottonwoods



ringtail



Some of Arizona's most spectacular plants and animals can be found in the state's riparian communities. For example, the vermilion flycatcher may not be as big as an American bald eagle, but it more than makes up for it in sheer intensity of color. Below are just a few of the standout residents of Arizona's riparian habitats.



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Frémont Cottonwood

Populus fremontii

Spanish: álamo

Tohono O'odham: mohmli auppa

Frémont cottonwoods don't produce cotton, but they do provide many resources

Named for 19th century explorer John C. Frémont and their fluffy, white seeds, Frémont cottonwoods are fast-growing trees that reach up to 100ft/30m tall with trunks more than 4ft/1.2m in diameter. They have wide crowns, gray trunks, and broad, heart-shaped leaves that turn golden yellow with the onset of cold weather.

A mature cottonwood may use more than 200 gallons (757 liters) of water a day.

Cottonwoods grow where there is sufficient groundwater, and often served to signal water to

thirsty travelers. Saplings provide food and building materials for beaver and browse for deer. Mature trees provide shelter for birds and other wildlife.

Look for Frémont cottonwoods along streams, watercourses, and bottomlands in the Colorado River and Little Colorado River drainage basins, and south of the Mogollon Rim, up to altitudes of 6500ft/1981m.



Goodding willows provide good cover

Like Fremont cottonwoods, Goodding willows grow where water is close to the surface and along waterways. In fact, their roots often protect stream and river banks from erosion. They get up to 50ft/15.2m tall — much smaller than cottonwoods, but plenty large enough to provide shade and cover

Deer and other animals graze on lance-shaped willow leaves.

for a variety of wildlife. They have dark brown to blackish bark, light and dark green leaves, and yellow, spring-blooming catkins.

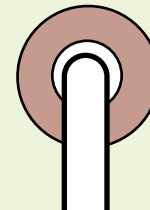
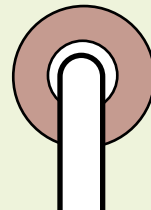
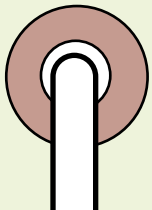
Look for willows in Arizona along waterways that feed into the Colorado River, north to the Grand Canyon, and in central and southern parts of the state, from sea level to 7000ft/2134m.

Goodding willow

Salix gooddingii

Spanish: sauce

Tohono O'odham: che'ul



Great blue herons hunt with great patience

Great blue herons are among the largest birds in North America, averaging 4ft/1.2m tall, with a 6ft/1.8m wingspan. They have blue-gray backs and wings, whitish underbellies, and white heads with black streaks leading back from their eyes. In flight, they extend their long legs straight back and tuck their long necks into their shoulders.

Hérons hunt fish and amphibians by standing still and watchful in shallow water, or slowly wading along, expertly spearing prey with their dagger-like beaks. Reptiles, rodents, and other birds are prey to heron hunger, as well.

Look for great blue herons in riparian habitats throughout Arizona.

Hérons breed in colonies, building their platform nests high above the ground, in tall trees selected by the males.



Great blue heron

Ardea herodias

Spanish: garza

Tohono O'odham (heron):
shuhthagí u'uwhig

Vermilion flycatchers hunt riparian air space for flying food

Male vermillion flycatchers are brilliant red birds, with black masks, backs and wings. The females, on the other hand, have brownish heads, streaked white breasts, and pale pink underbellies. They nest in willows, cottonwoods, and mesquite trees following a showy courtship display by the colorful males.

As their name implies, flycatchers eat mainly insects

they catch in flight. They select a likely perch and strike when a meal wanders into view, capturing prey with their bills, which are wide and flat and flanked by bristles.

Look for flycatchers in central and southern deserts and grasslands, near water and scattered trees, but particularly around ponds and streams.

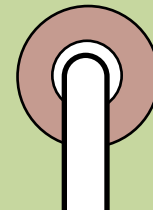
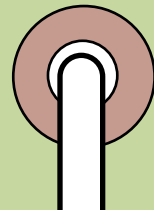
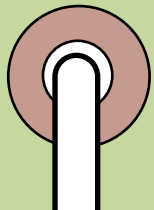
Flycatchers strike when a meal wanders into view, capturing prey with their bills.



Vermilion flycatcher

Pyrocephalus rubinus

Spanish: mosquero

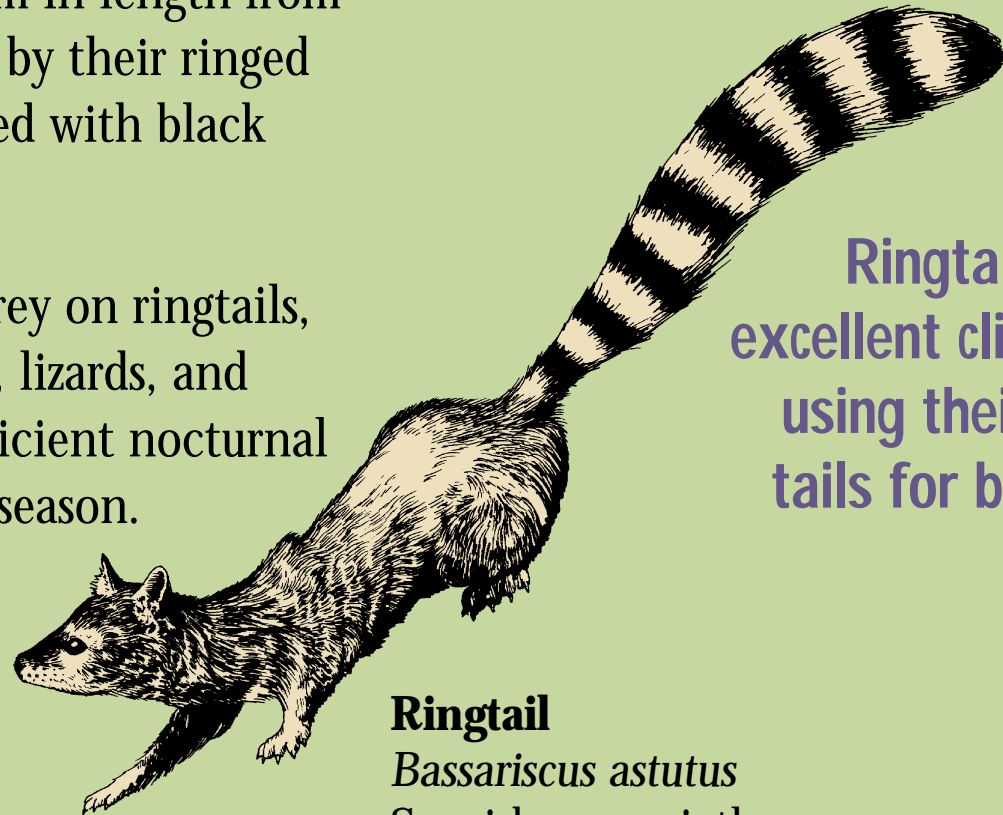


***Arizona's official state mammal —
the ringtail cat — is a riparian dweller***

Very catlike in form and movement, ringtails are small, grayish-brown mammals. They weigh just 1 to 2 pounds (.45 to .9 kilograms) and average 31in/79cm in length from nose to tail. You can recognize them easily by their ringed tails — which are long and fluffy and banded with black and white stripes.

Great horned owls, bobcats, and coyotes prey on ringtails, and ringtails prey on rodents, birds, snakes, lizards, and insects. These carnivorous creatures are efficient nocturnal predators, but also eat fruits and berries in season.

Look for ringtails in riparian canyons and rocky exposures, below 6000ft/1829m, throughout Arizona.



Ringtails are excellent climbers, using their long tails for balance.

Ringtail
Bassariscus astutus
Spanish: cacomixtle

Busy beavers create habitat and help prevent floods and erosion

Primarily aquatic mammals, beavers have webbed hind feet, flat tails, and clear eyelids they can close to protect their eyes from underwater debris. They're also large rodents — about 36in/91cm long and 50 pounds (23 kilograms). Their long continuously growing front teeth are kept trimmed by gnawing on trees.

Beavers live together in family groups. Some choose to den in riverbank holes, others build lodges in dammed rivers and streams. Industrious builders, they create habitat for other animals, and help prevent floods.

Look for beavers in and along permanent streams, rivers and lakes bordered by trees, particularly the Colorado River, and in the San Pedro River, where they are being reintroduced.

Beaver

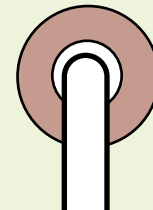
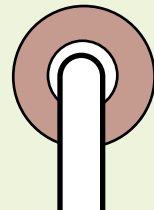
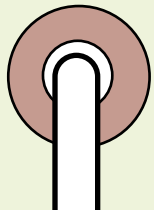
Castor canadensis

Spanish: castor

Tohono O'odham: kohwih



The beaver's soft fur was almost its undoing — fur-seeking trappers hunted them out of most of their historic range.



Riparian resident mud turtles usually wear a coat of algae

Sonoran mud turtles are light brown to yellow-brown and medium-sized — about 6 in/15.2cm. They have high-domed upper shells, or carapaces, and hinged lower shells, or plastrons. Their smooth upper shells are usually covered, at least partially, by a growth of algae.

Mud turtles feed on invertebrates, such as insects and crustaceans, as well as fish and frogs.

Look for Sonoran mud turtles in springs, creeks, ponds, and intermittent streams in oak and piñon-juniper woodlands, pine-fir forests, and desert grassland riparian communities, at altitudes below 6700ft/2042m.

Sonoran mud turtle

Kinosternon sonoriense

Spanish: tortuga del agua



Habitat destruction and imported predators have eliminated some leopard frog populations

These medium-sized, stout-bodied frogs are greenish-brown with dark spots and yellow to white bellies. Their long hind legs are striped, and adults have a salt and pepper pattern on their thighs.

Leopard frogs eat fresh water shrimp, insects, and aquatic larvae, while tadpoles feed on algae and aquatic plants.

Like all amphibious creatures, leopard frogs are found only where there is permanent water. They've disappeared from Pima County

entirely, due to the destruction of their natural habitat and the introduction of predatory species, such as bullfrogs.

Look for leopard frogs in rocky streams and pools, permanent springs, and earthen stock tanks, in central and southeastern mountain ranges, east and south of the Mogollon Rim, at altitudes between 3500 and 8040 feet (1067 and 2451m), and from 1291 to 4023 feet (394 to 1226m) at the Arizona-Mexico border.

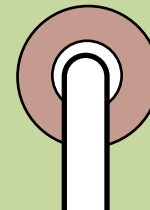
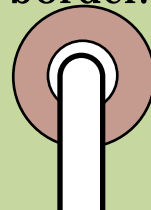
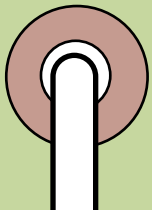
Chiricahua leopard frog

Rana chiricahuensis

Spanish: rana

Tohono O'odham (frog): babath

Threatened Species



Squawfish are mighty minnows — the largest in North America

Colorado River squawfish can grow to 6ft/1.8m in length and weigh over 80 pounds (36kg). That makes them the largest minnows in North America. They are tan to olive in color, with white to yellow underbellies. The scales along their sides have a metallic sheen.

Squawfish spawn when river waters warm up in late spring, and water levels drop. Dammed rivers don't produce these necessary temperature and water level changes, so dam construction limits where squawfish can survive and reproduce.

Look for squawfish in swiftly flowing rivers, in particular the Colorado River. They have been eliminated from most of their southern range.

Colorado River squawfish

Ptychocheilus lucius

Spanish: charalote

Endangered Species



Squawfish feed on other fish, and small birds and mammals that fall into the water.

Loach minnows lie low in shallow streams

These small minnows are secretive bottom dwellers and usually hide out in algae beds. They're about 2in/5cm long, and olive-brown with black specks and blotches. During breeding season, the males feature bright orange to red spots on their fins and bodies. Loach minnow females locate their nests in slow waters, downstream from stones that create ripples, and the territorial males protect them from predators.

Look for Loach minnows in coarse gravel at the bottom of shallow streams (less than 6in/15.2cm deep) in the upper Gila River drainage and the San Pedro River.

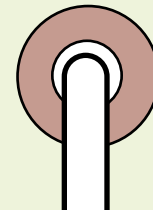
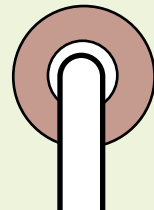
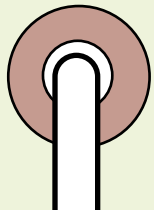
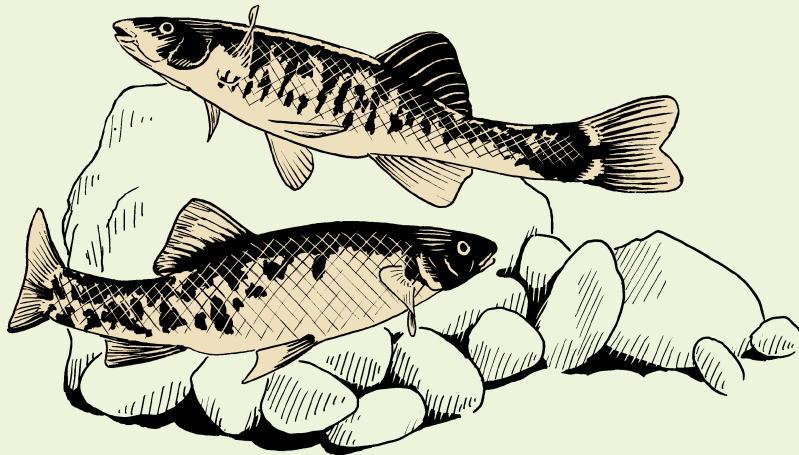
Mayfly larvae and blackfly larvae are about all that Loach minnows eat.

Loach minnow

Rhinichthys cobitis

Spanish: haralito adornado

Threatened Species



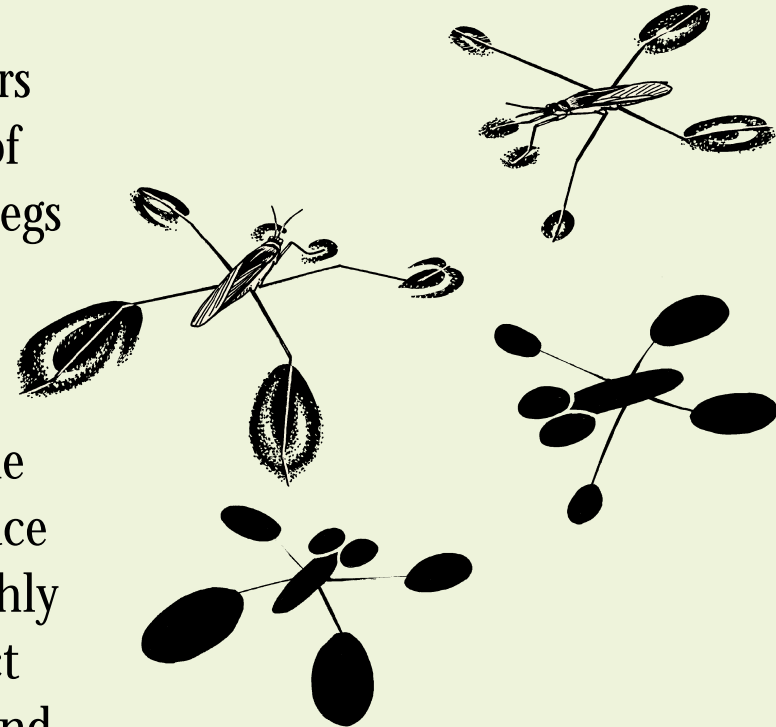
Water striders walk on water

Also known as “pond skaters” or “Jesus bugs,” water striders travel across still ponds and lakes. They have three pairs of legs and use each set for a different job — their long hind legs for steering, their middle pair for paddling and propelling forward, and their front set for grabbing food.

Water-striders feed on larvae and insects that drop into the water, and can jump several inches above the water’s surface to catch prey, or avoid capture by their own predators. Highly sensitive to movement on the surface, but unable to detect movement above or below it, they fall prey to fish, birds and other insects.

Look for water striders on Arizona’s ponds and lakes.

Dimples form in the water around the tips of the water strider’s legs — you might see these clues even before you see the bug!



Water Strider

Gerris spp

Spanish: tejedor, zapatero

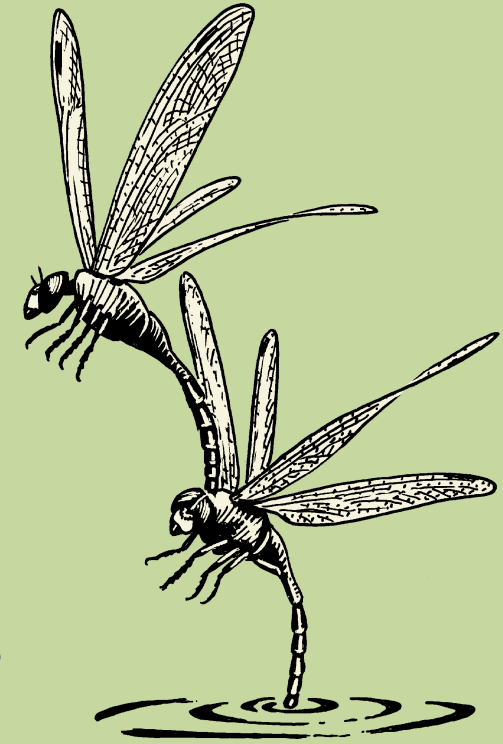
Territorial dragonflies patrol riparian air space

For more than 200 million years these winged hunters have been claiming space above riparian areas, preying on flying insects and patrolling constantly to keep other dragonflies away. Even nymphs — immature dragonflies, which live under water — are active hunters, feeding on other aquatic insects, mosquito larvae, and, in the case of larger species, small fish and tadpoles. Dragonflies are territorial about females, too. They aggressively block other males from courting them.

More than 5000 species of dragonfly live in temperate and tropical climates around the world.

While both dragonflies and damselflies belong to the Odonata order, and both have two pairs of wings, you can tell them apart quite easily — dragonflies rest with their wings outstretched and damselflies fold theirs over their backs.

Look for dragonflies in riparian habitats throughout Arizona.



Dragonfly

Order: Odonata

Spanish: libélula, cigarrillo

Tohono O'odham:
mukchiwitham

