

BRINGING BIRDS HOME

*A Guide to Enhancing Rivers,
Streams and Desert Washes
for Birds and Other Wildlife*



INTRODUCTION

Arizona contains amazingly diverse habitats—from mountains with moist canyons to grasslands to parched deserts. Many kinds of plants and animals call these habitats home; the sheer variety of habitats helped Arizona become world famous for the number of bird species found in the state. In an arid environment, the water and rich vegetation along Arizona’s rivers, creeks, wetlands, lakes, ponds, and washes (riparian areas) draw in the highest diversity of birds. This guide aims to help landowners and residents who live along riparian areas to conserve, enhance, and restore habitat specifically to benefit birds. In so doing, you will also create habitat for an incredible variety of mammals, reptiles, amphibians, and insects.

Your actions will help ensure Arizona’s waterways remain healthy. Keeping riparian areas healthy is important for many reasons:

- Riparian vegetation helps control flood events.
- Stabilizes river banks, traps nutrients and soil, and improves water quality.
- Improves water quality, provides shade, moderates temperatures, and helps keep the water table high.
- Riparian areas provide multiple uses and enjoyment to people.

Let’s get started!

Aravaipa Creek, J. MacFarland



Areas with water, like this stretch of Aravaipa Creek, are rare and precious in Arizona. They provide excellent recreation opportunities, increase the value and beauty of private property, and provide homes for wildlife. They are worth protecting and enhancing!

What is a Riparian Area?

Riparian areas are spots that have water at least part of the year. They are home to plants and animals that need more moisture than available in their surroundings. In Arizona, riparian areas border flowing streams, rivers, and even desert washes (which have flowing water only a few days per year).



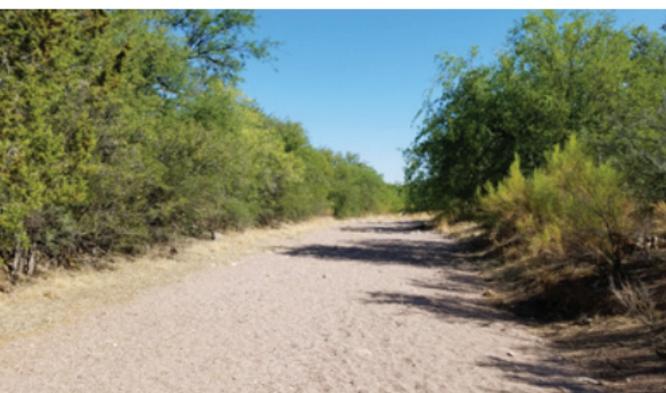
Perennial River
River with year-round water that supports large trees and many other plants.

Lower San Pedro River, J. MaacFarland



Springs
Water bubbling up from a spring can create green areas that are very productive for wildlife.

Arivaca Cienega, Matt Griffiths



Desert Wash
Washes that run through the desert only have water after it rains, but these areas still support larger trees than their surroundings and provide shade and shelter for animals and people.

Desert wash in Tumacacoris, J. MacFarland

Your Riparian Habitat—Why Do We Need It?

All the plants that grow along rivers and streams help stabilize the banks. Without this vegetation, seasonal floods can cause severe erosion and result in lowered water tables and decreased water quality. Native vegetation along riverbanks helps slow and spread flowing water, which reduces the chances of a damaging flood event. This also allows soil particles to deposit on the floodplain instead of being washed downstream. The rich new soil creates the perfect environment for more plants to grow. The high organic content of the soil in riparian areas acts as a sponge to hold water. This water is then slowly released back into the river. The richer the soil, the more water it can hold and the more slowly the soil releases the water. Healthy native plants growing on the banks of washes, creeks, and rivers help increase the length of time that water flows in the channel and help recharge, or raise, the water tables, which in turn help keep the trees healthy. It's a positive feedback loop.

Sycamore lined drainage in Ramsey Canyon, J. MacFarland



While the sycamore trees along this creek in Ramsey Canyon use water from the creek to live, they also help keep a creek flowing by providing shade, which reduces evaporation, decreases erosion, and slows the flow of water across the landscape.

RIPARIAN LAND ASSESSMENT

Riparian areas are very productive and important to the overall health and stability of your land. If you manage them well, they will protect and enhance your property while providing food and shelter for many wildlife species. The first step is to assess your current conditions. How do you begin? Take a walk through your property. Take special note of the areas along the waterway itself and conditions nearby.

Riparian areas are vulnerable to changes in the climate, including drought, increased frequency of wildfires, and extreme weather. Sustainable management of Arizona's streams and rivers ensures Arizona's working landscapes remain resilient and viable for the industries, people, and diverse bird and animal populations that rely on them. Enhancing streams and rivers for birds and wildlife is an investment in the prosperity, resiliency, and health of traditional ranching and agricultural economies.

Signs of a Healthy Riparian Ecosystem

Habitat Score Sheet Part 1

- Does the waterway curve and meander? Yes No
- Do you see a greater variety and quantity of smaller plants within 10 feet of the banks compared to the surrounding areas?
 Yes No
- Are there shrubs (bushes less than 6 feet tall) of different types present? Yes No
- Is there evidence of vines climbing shrubs and trees? Yes No
- Are there young trees present? Yes No
- Are there more mature taller trees with spreading branches that provide shade? Yes No

For every ‘Yes’ add one point—enter total here: _____

Look for Potential Issues *Habitat Score Sheet Part 2*

- Has there been soil erosion caused by livestock or horses?
 Yes No
- Has there been soil erosion caused by vehicles? Yes No
- Are there large patches of bare earth with cracked soil or large muddy basins? Yes No
- Is there a steep vertical drop-off of several feet from the banks to the waterway or channel below? Yes No
- Are there invasive plants present such as salt cedar, bufflegrass, Johnson grass, or giant reed? Yes No
- Do trees look stressed with yellow leaves and/or bare “outer” branches? Yes No
- Is there a lack of grasses, flowering plants and/or bushes near the drainage? Yes No

For every ‘No’ add one point—enter total here: _____

Combine the two scores—overall total _____

What Did You Find?

Overall score 12–14:

Lookin' good!

This booklet contains many ideas on what you can do to keep your riparian habitat healthy or enhance it further for your enjoyment and the benefit of wildlife.

Overall score 9–11:

Opportunities for improvement

Your system is fairly healthy, but a little work and some streamlined management practices can make it even better for your family and for wildlife. There are many ideas in this booklet to help you accomplish a goal of a healthier riparian system.

Overall score 8 or lower:

Needs some work

Making some systematic changes could really improve the overall health of your riparian area and reduce the chance of dangerous flooding. This booklet has many ideas on simple practices and procedures to help improve your riparian zone.

**If your score was four or below, there are resources in the back of this booklet with more comprehensive information to help you.*

Healthy riparian areas with year-round surface water support excellent stands of large cottonwood and willow trees.



The upper San Pedro River, J. MacFarland

This sycamore and oak-lined drainage has experienced recent bank erosion after a storm.



Mouth of Korn Canyon, Jonathan Horst

Even though this stream has flowing water, cattle have damaged the banks and vegetation. Bare soil will wash away in high water events, causing erosion and increased flooding.



Upper Santa Cruz River, K. Kroesen

TYPES OF RIPARIAN AREAS

Some riparian areas are comprised of trees much larger than the trees in their surroundings. Others are thin lines of small shrubs and trees. Some riparian areas are even empty of trees and dominated by dense grasses or wetland plants.

Cottonwood & Willow Gallery *Elevation 100–4500 feet*

Giant Fremont cottonwoods, willows, velvet ash, and a few other species form the impressive gallery of dominant trees along the few major rivers and creeks in Arizona. Underneath, look for smaller trees like, net-leaf hackberry, Mexican elderberry, and mesquites and shrubs like wolfberry with seep willow growing right next to or in the channel.

Recommended Practice: Let understory, ground-level, and vegetation grow freely. If possible, fence cows out of the densest part of a gallery riparian area and away from the stream channel to protect young trees and fragile banks. If grazing must happen, keep it minimal, and only during non-growing seasons. Make every effort to keep livestock out of the stream channel itself and away from the banks. If there's a shallow water table, pole planting can be a fast and inexpensive way to increase the number of trees, especially cottonwood and willow. More detailed information is available at nrcs.usda.gov.

Tall cottonwood trees mixed with willows line the San Pedro River helping create a shaded and fertile area for dense understory plants to grow and do their job of stabilizing the banks.

San Pedro River, J. MacFarland



Mesquite Bosque *Elevation 100–3500 feet*

These areas are found where the water table is a little too low for gallery trees, but above 35'. They are sometimes on the upslope shoulders of the gallery trees. The mesquites in a mature bosque have giant diameter trunks with heavy drooping branches that often sag back down to the ground. Intermixed are net-leaf hackberry and Mexican elderberry trees, and a mid-story including graythorn, and wolfberry shrubs. Vines will frequently be found snaking their way up the trees. The understory will often include small bunchgrasses and sod-grasses, and flowering forbs (wildflowers and herbs). Below the mesquite canopy is frequently fairly open due to the dense shade.

Recommended Practice: Allow large mesquite, hackberry, and elderberry to grow. These larger and older trees provide nest sites for cavity-nesting birds such as woodpeckers, wrens, Lucy's Warblers, and small owls. Whenever safe and possible, allow dead trees and logs to remain—they are a valuable resource for many species of wildlife. In a developing bosque lacking large trees with cavities, put up nestboxes for screech-owls, Lucy's Warblers, and a variety of flycatchers. For more information, visit: tucsonaudubon.org/nestbox.



Tall mesquite trees create a cool and shady area that allows grasses and wildflowers to grow below. These almost park-like areas are beautiful and very important for a wide variety of birds.

7B Ranch near Mammoth, AZ. J. MacFarland

Sycamore-Lined Drainages *Elevation 3,000–6,000 feet*

This riparian community is found along streams in Arizona's higher elevation canyons, often with boulders and evidence of frequent floods. Large oaks dominate this community but sycamores frequently stand out being the largest trees and growing right in the drainage. Arizona walnut, cottonwood, and velvet ash are the other major trees you may



Creeks, streams, and drainages at higher elevations can be lined with Arizona sycamore, along with other trees. Besides being beautiful, many birds and mammals nest in the natural cavities the trees create, including Elegant Trogons.

Buehman Canyon, J. MacFarland

find, especially in the lower elevation ranges. Smaller trees include: Arizona cypress, Arizona alder, net-leaf hackberry, box elder, Texas mulberry, big tooth maple, cottonwood, and chokecherry.

Recommended Practice: Consider installing livestock “drinkers” located outside the riparian zone and installing fencing to keep cattle out of the drainage bed. This will provide cattle with water but protect the riparian habitat. Vegetated stream banks are more resistant to erosion than bare banks. Planting a mix of native vines, shrubs, and grasses and allowing them to grow naturally (without mowing) is optimal. The collective force of all of their roots growing into the soil provides effective bank stabilization.

Desert Washes *Elevation 100–4,500 feet*

It takes a robust plant to grow in the arid landscape along desert washes. Desert willow, foothills and blue palo verde, velvet mesquite, catclaw acacia, and ironwood all thrive here in differing areas. In the understory you will find: desert broom, burro bush, mimosa, desert hackberry, and wolfberry. A desert wash will only flow when it rains, but these areas still have more moisture than the surrounding desert and act as a haven of food and shelter for wildlife.

Recommended Practice: Help your wash flow better. If your property has small barren washes, you can slow and spread flowing water by installing tiny trincheras or rows of rocks. These are easily made with rocks and larger sticks that might be lying around nearby. This helps

Even though these washes are dry most of the year, when it rains they can be raging torrents. The trees that edge this wash will help protect the banks from these flows.



Atturbury Wash, Kendall Kroesen

trap blowing leaf litter (which holds water longer than the rocky soil), and blowing seeds. The seeds are planted in the perfect bed for them to sprout and establish. Repeated rows of a single layer of rocks are more effective than single rows of larger rock piles.

Marshes, Cienegas, and Wetlands *Elevation 75–9500 feet*

Grassy wetlands found near springs and perennial streams in southern Arizona are called cienegas. Look for the characteristic sacaton grasses that are tall and grow in tight bunches. In Arizona, marshes are usually in broad valleys with large rivers that form oxbows and backwaters. The plants in marshes are often temporary and can be scoured out by flooding or as the river channel moves with time, but they regenerate quickly. Look for plants such as cattail, sedges, or bulrushes. Wetlands can also be present on the edges of lakes, ponds, and reservoirs, as well as irrigation ditches and canals.

Recommended Practice: Do all you can to keep water levels relatively constant, or at least change water levels slowly. Occasional managed burns can be a useful tool if you are equipped and take the proper precautions, and can help control cattails and improve wetland habitat for key species. It is important to leave some vegetation so species that depend on the area have habitat.



Areas with still or slowly moving water, such as along irrigation canals, can create marshes and wetlands. Even a small marsh is valuable to wildlife and filters and purifies the water.

RECOMMENDED PRACTICES

Any vegetated area can be broken down into three basic areas:

- the understory: plants growing near the ground and less than three feet tall
- the mid-story: shrubs and other plants three-ten feet tall
- the canopy: trees and the vines growing up them... higher above your head

There are very simple activities that can be done to improve each of these areas that apply to all types of washes, creeks, streams, and rivers.



Understory Habitat Improvement Tips

The understory includes the grasses, wild flowers, and small shrubs. This layer is very important for bank stabilization. A robust understory greatly reduces soil erosion during flood events.

- Plant clumps of low-growing shrubs and flowering plants that are native to your region and appropriate to the type of riparian area you have. Native plants are more likely to be successful and support more wildlife.
- Postpone mowing until after the bird nesting season (March–August) to avoid destroying or disturbing birds that nest on and close to the ground.
- Once flowering plants lose their blossoms, give birds a chance to feed on the seed heads before removing them. Native plants that look “weedy” to us are an important food source for goldfinches and other birds.



Mid-story Habitat Improvement Tips

The mid-story can consist of tall shrubs, young trees, and vines climbing up the taller plants. This zone is very important for nesting birds; and many birds search for fruit, insects, and seeds here.

- Avoid pruning large shrubs and trees during bird nesting season (March–August).
- Plant native fruit-bearing plants, such as elderberry and hackberry.
- Maintain potential nest sites by leaving dead trees standing whenever possible and safe.
- Consider installing nest boxes for native birds, especially if your property doesn't have many natural tree cavities. More information and free nest box plans, visit: tucsonaudubon.org/nestbox.
- Plant armored vegetation, like wolfberry and graythorn, to help protect nesting birds from predators.



Canopy Habitat Improvement Tips

The canopy is the uppermost layer, formed by the crowns of trees. The canopy provides shade to the plants and soil below, which can greatly reduce evaporation in warm months.

- Do not remove large native trees whenever possible.
- Remove invasive tree species, such as tree of heaven and Russian olive, and replace by planting native trees.
- Conduct necessary tree felling and pruning during the non-nesting season (September–February) to allow birds to finish nesting and raising young.
- If young trees are not present, plant some to create large trees in the future.

Cover Your Pipes!

Open and uncapped vertical, standing pipes could be on your property for many reasons. They may look innocuous to us, but these pipes are literally death traps for many birds and other wildlife. Cavity-nesting birds investigating what looks like a potential nesting site are often unable to escape and die slowly. It is very straightforward to prevent future deaths by capping or covering these pipes. If it is a ventilation pipe, then cover it with fine metal screening (small enough to prevent bees). Sometimes the simplest solution is to remove the pipe entirely.

Death Pipe, National Forest Service

Hundreds of dead birds and lizards have been found in open vertical pipes throughout the American West.



RECOMMENDED PRACTICES

Capped Pipe, Susan Drown

This pipe has been covered with metal screening to prevent animals from entering. You can also use plastic caps or cement, or you could simply remove a standing pipe.



Wildlife Escape Ladders

Water tanks and troughs can be a great benefit to birds and wildlife but can also present a lethal danger. Wildlife can drown if they fall into the water while trying to get a drink and cannot climb the smooth metal walls. Installing an escape ladder is simple, inexpensive, and very effective at preventing these needless deaths. Many types of material can be used including metal screening sloping into the tank. This forms a ramp, which needs to connect to the side of trough so that an animal can get to the edge and escape.



Water tanks are a good alternative to cattle entering a riparian zone and trampling the banks. A ramp in the tank gives wildlife an escape if they fall in.

Wildlife escape ramp, NRCS



Birds and other wildlife are drawn to tanks for the valuable water they provide. If an animal falls in, it can swim to an escape ladder, such as this one made of metal screen, and climb to safety.

Aluminum Wildlife Ramp, montanafberglass.com

CHARACTERISTIC SPECIES

Characteristic Species of Healthy Riparian Areas

Beaver

Beavers are a keystone species. This means their presence in nature greatly affects other wildlife in positive and important ways. In fact, beavers create and maintain riparian areas, and their removal leads to a decrease in habitat quality. Beavers help purify and control water by building dams that filter silt from the water bodies in which they live. Beaver dams can also slow flood waters, raise water tables, and control erosion. Fortunately beavers have come back to some of Arizona's rivers.



Beavers have a dramatic and positive impact on waterways where they live. The ponds created by their dams make for rich soil and lots of infiltration of water into your water table.

Beaver, Pete Toscano

Checkered Garter Snake

This lovely little snake is perfectly safe to humans and devours many pests, such as rodents. Their presence indicates a high quality riparian corridor with adjacent grassland or low elevation Madrean Oak habitat. Consider yourself lucky if you see one of these on your property.



Checkered Garter Snakes, along with other species of Arizona garter snakes, are small and non-venomous. They are drawn to water and healthy riparian zones, and will sometimes relax in pools of water with only their heads above the surface.

Checkered Garter Snake,
Squammatologist

CHARACTERISTIC SPECIES

Yellow-billed Cuckoo

Cuckoos nest in gallery, bosque, and mid-elevation oak-sycamore type riparian areas. Cuckoos are usually detected by a knocking “ku-ku ku-ku-ku-kowp-kowp” song. Although large (12 inches), Cuckoos are very secretive and good at hiding from curious humans. They have drastically declined in the American west and benefit from an open mid-story and vegetation types that support the large insects they feed their voracious young.

Yellow-billed Cuckoo populations declined by 90% in the western half of the US due to loss of suitable riparian habitat. They respond well to restoration efforts and have nested in replanted areas of cottonwood and willow along rivers and streams and in higher elevation oak-sycamore drainages.



Lucy's Warbler

This small warbler has a loud and bright song and is a lovely pearly gray with a black eye. Lucy's Warblers are characteristic spring birds of any area containing numerous large mesquite trees. One of only two cavity-nesting warblers in North America, the Lucy's Warbler nests in a variety of cavities, nooks, and crannies. This species will also use tiny nest boxes. Information on building or buying nest boxes is available at tucsonaudubon.org/nestbox.

Lucy's Warblers are one of the first spring migrants to return each year. Listen for their rapid, three-stage song while they forage for tiny insects.



Western Red Bat

The Western Red Bat, named for its red fur, is one of the most beautiful of all bat species. They are solitary animals that prefer riparian areas dominated by walnuts, oaks, willows, cottonwoods, and sycamores that provide the broad-leaved trees which are their only roosting area. They consume a tremendous amount of insects every night. An installed bat house can attract other species of bat, which will also devour many insects. For more information, visit: batconservation.org.

Rivers, streams, and washes are very important for bats, such as this Western Red Bat. All bats are attracted to such areas and will eat many insects every night.



Abert's Towhee

This handsome brown bird, with black facial markings that look like a bandit mask, is found in all types of low-elevation riparian areas in southern Arizona. They occur almost exclusively in southern Arizona and will stay on their territory all year. They are often seen foraging in small family groups and frequently call to one another with their high pitched “pik” notes. When a pair reunites they give an emphatic descending squeal call.



Often seen in pairs, Abert's Towhees, like all towhees, spend much of their time on the ground digging for insects. Leaving dead leaves and brush on the ground makes an area very attractive to them.

Abert's Towhee, cv.vick

Gila Topminnow

Historically, topminnows were the most abundant fish species in the entire Gila River basin, occupying river systems from western New Mexico to southern and western Arizona. The females are larger and silver in color and give birth to live young. The males are smaller and darker in color, with the most dominate males being jet-black. They are usually found in warm, shallow water; congregating in areas of moderate current, below riffles, and along the margins of flowing streams in accumulated algae mats.



Native fishes, such as the Gila Topminnow, are precious and rare in Arizona. Nearly all of the 35 native fish species in Arizona are of high conservation concern, and efforts are being made to reestablish populations in waterways.

Gila Topminnow,
Brian Gratwicke

CHARACTERISTIC SPECIES

Chiricahua Leopard Frog

The Chiricahua Leopard Frog has historically been found in the mountains and valleys along the Mogollon Rim, east of Camp Verde and the Verde River; but also in southeastern Arizona, south of the Gila River, from the Baboquivari Mountains east to Peloncillo Mountains. Although still fairly- well distributed through this range, the species has disappeared

from about 88% of its historical localities in Arizona. Its decline is largely due to disease and habitat loss, and there are many projects underway to create suitable ponds to aid in their recovery.

Chiricahua Leopard Frog:
Jim Rorabaugh, USFWS

These native frogs require permanent water for their young to grow and feed. Their “song” is often described as a snoring sound.



Yellow-breasted Chat

This large warbler is very striking with its bright yellow throat and chest, and bold white “spectacles” on its face. As impressive as it looks, this bird is more often heard than seen and makes many different sounds, including knocks and whoops. This is a widespread species found in thick vegetation in many types of riparian habitat.

Yellow-breasted Chat,
Bob Devlin

With a diverse range of different sounds they can make, the song of a male Yellow-breasted Chat can be complex and individualistic.



Song Sparrow

This sparrow has reddish-brown plumage with dark streaking, and a gray face with brown stripes. They are wide spread throughout Arizona and present year round. Song Sparrows prefer stream edges in thick underbrush, an indicator of running water and very high quality riparian habitat.

Song Sparrow, mizmac

Scientific investigations have demonstrated that Song Sparrow presence is an indication of water quality as well as robust vegetation. They are not found along streamsides that have high levels of heavy metals.



CHARACTERISTIC SPECIES

Bell's Vireo

This songbird is smaller than a sparrow and is gray all over with faint white “spectacles” on its face. With a loud song that sounds like questioning phrases repeated over and over, the Bell’s Vireo is rarely seen but often heard in the thickest riparian mid-story. They especially favor low elevation riparian habitat, upland mesquite thickets, and xeric wash habitat with mesquite.

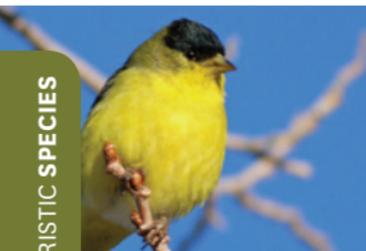


Bell's Vireos provide an iconic sound of summer in riparian areas with their repetitive song loudly sung by the male. He will sing even while sitting on the nest.

Bell's Vireo, tombenson76

Lesser Goldfinch

With a lovely, upbeat song, this lemon-yellow finch has distinctive white patches in its dark wings that are visible when it flies. This bird is very widespread and will use many types of habitats at many different elevations. They especially love to eat seeds from flowers and weeds that have already bloomed, so delaying mowing or “dead heading” can be very beneficial for them.



Lesser Goldfinches do well in all types of riparian habitat. They also use urban habitat to take advantage of food sources from landscaped yards and thistle seed feeders.

Lesser Goldfinch,
Carla Kishinami

CHARACTERISTIC SPECIES

Vermilion Flycatcher

The males of this species are a dazzling red with strikingly dark black facial mask and wings. The females are less ostentatiously colored with creamy white fronts with a rose pink lower belly and brown facial mask and wings. The male does a marvelous courtship display in the spring where he flutters high above the canopy while singing his “pit-pitasee” song.

Like many flycatchers, these beautiful birds hunt by perching out in the open and swooping on insects. They often return to the same few perches over and over throughout the day.



Bewick's Wren

Often seen creeping up tree trunks or in piles of fallen limbs, this handsome wren is brown all over with a bold white eyebrow and long tail. They forage in brush piles and in leaf litter—leaving such cover on the ground is very helpful for them. Listen for their loud and sudden song that brings to mind a rotary phone after dialing nine.

Like all wrens, Bewick's Wrens spend much of their time searching in leaf litter or under tree bark for small insects. They are free, all-natural pest control.



Summer Tanager

The male Summer Tanager is a shockingly-vivid red all over its body, while the female is a more subtle, dusky yellow all over. They spend most of their time high up in cottonwood and willow trees, and are wide spread throughout Arizona in high-quality stream habitat, as well along lush desert washes.

Male Summer Tanagers are North America's only all-red birds, and they are a very bright shade of red. They are surprisingly good at hiding in the tree tops, so listen for their two-part chu-chup call in the spring and summer.



CONCLUSION

Arizonans know that water is a precious resource for both people and wildlife. The areas around washes, creeks, streams, and rivers serve an important function in the larger landscape, and when healthy, protect our properties and provide vital resources for wildlife.



Audubon's Important Bird Areas Program is a partnership of Audubon Arizona and Tucson Audubon, and is committed to identifying the areas most important for native birds. Sometimes these areas are large and grand, but more often birds find refuge in small patches of good habitat that are being protected and enhanced by someone like you.

We encourage you to check with your area Audubon chapter and become involved with a local riparian project. Caring for your own wildlife habitat that you manage is a critical link in the conservation of riparian habitat statewide. Birds know no boundaries; and, especially during migration, a reach of healthy, dense, riparian vegetation is a welcome resource for species like the Wilson's Warbler, which may be on a cross-continental trek. We hope this guide aids in making your oasis hospitable for that warbler while also providing healthy landscape for the benefit of your family and community.

More Resources for Improving Your Riparian Property

The Natural Resources Conservation Service (NRCS), an agency of the U.S. Department of Agriculture, provides many voluntary programs to assist private landowners with wildlife habitat conservation projects. The U.S. Forest Service, Fish and Wildlife Service, Arizona State Land Department, and Arizona Game and Fish Department also have programs to assist landowners, providing technical advice, best practices projects, habitat restoration, protection, and conservation easements. Key programs are described below.

Wildlife Habitat Incentives Program is known as the “WHIP” program within the federal Farm Bill. WHIP is a popular program that helps landowners through cost-sharing and technical advice to successfully implement a wildlife habitat project during an agreed upon 5-, 10- or 15-year contract period. For more information visit: nrcs.usda.gov/programs To find the application online go to: sc.egov.usda.gov.

Conservation Reserve Program (CRP) is run through the Commodity Credit Corporation of the Farm Service Agency of U.S. Department of Agriculture. For more information and to find your local county contact visit: fsa.usda.gov/az/AZ.htm

Healthy Forests Reserve Program (HFRP) is an NRCS program for private land-owners who own forest resources who wish to: 1) restore or enhance their forest ecosystems to promote recovery of threatened and endangered species; 2) improve biodiversity; and 3) enhance carbon sequestration. For more information visit: nrcs.usda.gov/programs.

Wetlands Reserve Program (WRP) is an NRCS program for private landowners that provides technical and financial assistance to restore, enhance, or protect wetlands on their property. This includes protecting riparian habitat where it links with protected wetlands. For more information visit: nrcs.usda.gov/programs.

USDA Forest Service Forest Legacy Program (FLP) is a federal program administered by the U.S. Forest Service that may be applicable to conserving riparian forests in Arizona. The program sets priority areas within the state for forest conservation projects, where forests are threatened by conversion to non-forest uses. For information for the southwest region, including Arizona, visit: fs.fed.us/spf/coop/library/flp_state_coord.pdf.

Forestland Enhancement Program (FLEP) is a federally-funded (2002 Farm Bill) program to the U.S. Forest Service and is administered by the Arizona State Land Department, State Forestry Program. For information on this program visit: southwestareagrants.org/az/flep.php.

U.S. Fish and Wildlife Service Partners for Fish and Wildlife Program is a federal program administered by the U.S. Fish and Wildlife Service to assist private landowners to protect, enhance, or restore wildlife habitat for federally-listed endangered or threatened species. For information on Arizona's program visit: fws.gov/southwest/es/arizonaes/Partners.htm.

We encourage you to check with your area Audubon chapter and connect with the **Arizona Game and Fish Department's Landowner Relations Program**. This state program coordinates funding sources, and provides technical assistance to private landowners and public lands lessees to develop, plan, and conduct habitat projects to conserve, enhance, or restore habitat for all wildlife species. For more information about this program, visit azgfd.com/Wildlife/LandOwners/. The Habitat Partnership Committee is a collaborative group of Federal and State Agency personnel, members of the agricultural community, and Non-Government Organizations working together to plan and implement habitat improvement projects, and operates under the wing of the Landowner Relations Program. For more information about this program, visit azgfd.com/Wildlife/HPC.

Tribal Landowner Incentive Program (TLIP) is a federally-administered program by the U.S. Fish and Wildlife Service. Technical assistance and funding are available to federally-recognized Native American tribes to develop, plan and, conduct projects to conserve, enhance, or restore habitat for federally-listed, proposed, or candidate species; or other at-risk species on tribal lands. For information on this program visit: fws.gov/grants/tribal.html.

Online Resources for Birds and other Wildlife

Arizona Important Bird Areas Program—aziba.org

Arizona Game and Fish Department—azgfd.gov

eBird—ebird.org

National Audubon Society—audubon.org

Reptiles and Amphibians of Arizona online field guide—reptilesfaz.org/

Sonoran Joint Venture—sonoranjv.org

ACKNOWLEDGMENTS

This booklet was created by Tucson Audubon Society and Audubon Arizona as part of their Arizona Important Bird Areas program, a joint initiative. Help and support for this project was generously given by Arizona Game and Fish and Sonoran Joint Venture. Special thanks to National Audubon Society's Western Water Initiative.

Copyright © 2018



