



# The Cactus Wren-dition



Volume LXXII No. 4

Winter - 2019

*Yellow-headed Blackbirds at the San Pedro River*  
by R. J. Luce





MAS holds meetings (membership is not required) on the first Tuesday of the month from September through April at Papago Buttes Church of the Brethren, 2450 N. 64th Street, Scottsdale (north of Oak Street on the west side, between Thomas and McDowell roads). If southbound, turn right from 64th Street, 1/2 mile south of Thomas. If northbound, turn left (west) at Oak Street, 1/2 mile north of McDowell, and then right at the Elks Lodge. Continue past the lodge and turn right into the church parking lot. Look for the "Audubon" signs. Meeting starts at 7:30, come at 7:00 to socialize. Pre-meeting dinners (September through April) are held at 6:00 pm at Noodles Ranch Vietnamese Cuisine, 2765 N. Scottsdale Road at the southeast corner of Scottsdale Road and Thomas in the south part of Scottsdale Crossing Plaza. The May meeting is our annual banquet. Please check the Spring *Wren•dition* or our website for details.

## Committees/Support

**Arizona Audubon Council Rep**  
Position Open

**Bookstore**  
Sochetra Ly  
503 860-0370

**Poet Laureate**  
David Chorlton  
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**Maricopa Audubon Website**  
<http://www.maricopaaudubon.org>

**The Earth has received the embrace of the sun and we shall see the results of that love.**

*Setting Ball*

## An Investment in the Future

Bequests are an important source of support for the Maricopa Audubon Society. Your chapter has dedicated itself to the protection of the natural world through public education and advocacy for the wiser use and preservation of our land, water, air and other irreplaceable natural resources.

You can invest in the future of our natural world by making a bequest in your will to the Maricopa Audubon Society. Talk to your attorney for more information on how this can be accomplished.

### November 5th, 2019

#### Dr. Dave Pearson: Birds Bringing Reluctant Neighbors Together (Gila River Indian Community)

Dave Pearson has been invited to survey for birds on the GRIC for a year and a half to help with their conservation efforts. These are an extension of the annual winter bird count they sponsor that Maricopa Audubon members have been assisting with for over a decade. Pearson will illustrate how birding on the reservation adjacent to the southern county border has opened his eyes to how little most Phoenixians know about our neighbors and how much we depend on them without knowing it.

### December 3rd, 2019

#### Margaret Dyekman: Backyard Birding in Northern Arizona

Northern Arizona is a goldmine for backyard birders. It is home to many colorful, unique species that readily come to gardens, bird feeders, and bird baths. MAS member Margaret Dyekman discusses her new book designed for casual bird-lover residents of Northern Arizona as well as visitors. She will briefly talk about how she got her book published and then share some of the real-life stories that were the basis of her 10 years of newspaper articles compiled in her book.

*Margaret Dyekman has watched birds in Northern Arizona from her back yard for 20 years and documented her experiences and those of other backyard birders in entertaining and informative print articles and blogs. She is an accomplished writer and speaker, published in professional magazines, and a frequent conference presenter, now delving into birding presentations versus her career presentations in human resources topics.*



Margaret Dyekman

*She is a member of the Northern Arizona Audubon Society, the Maricopa Audubon Society, Arizona Field Ornithologists, the Central Arizona Butterfly Association, Arizona Country Club, Pinewood Country Club, the North American Butterfly Association, and the American Birding Association. Her book will be on sale to members at the meeting at a discounted price of \$20 including tax.*

### January 7th, 2020

#### Paul Landau: Nature Photography

Please check our website for further information.

### February 4th, 2020

#### Kevin McGraw: Backyard Bird Feeding

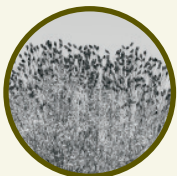
Backyard bird feeding is now more than a billion-dollar industry nationwide, and with this activity come many benefits, such as drawing attractive small birds to our yards and provisioning them with valued resources. However, there may be dark sides to bird feeding, including the spread of disease at our feeders that attract dense populations of avian visitors. Kevin will discuss the first field experiment of its kind to investigate the extent to which routine bird-feeder cleaning can impact disease severity and spread in a common feeder-visiting passerine (the House Finch).

*Kevin McGraw is Professor and Associate Director for Facilities in the*



House Finches. Photo by Kevin McGraw

*School of Life Sciences at Arizona State University. He came to ASU in 2004 and leads a research team that investigates two main areas: the evolution of exaggerated traits in animals and urban behavioral ecology. His group's primary foci have been on the control and function of ornate colors of birds (especially finches and hummingbirds), and how birds acclimate and adapt to the many ways in which humans modify city environments. Students in his lab have also studied elaborate coloration in animals such as chameleons, butterflies, and jumping spiders. He has mentored many students in research during his 15 years at ASU, including 7 post-doctoral researchers, 8 PhD graduates, 2 current PhD students, and over 300 undergraduates.*



**On the Cover:** Yellow-headed Blackbirds at the San Pedro River by R. J. Luce

# President's Message



Mark W. Larson

The Cornell Laboratory of Ornithology recently reported that the United States has lost as many as 3 billion birds in the past fifty years. This shocking report generated a great deal of nationwide media attention, but it seems that there has been little follow-up to further explain the reasons for this dramatic decline. Habitat loss was one of the reasons cited for these losses, especially with grassland species, but declines of forest and even suburban birds were also documented. Not only have millions of acres of formerly productive habitat been lost in this country, but our Neotropical breeding birds have lost enormous swaths of their wintering habitat in the tropics, a problem that has received too little attention to date. I should mention that the principal author of this report, Ken Rosenberg, along with his brother Gary, has a Maricopa

Audubon connection that goes back decades.

One of the information sources for the researchers' conclusions was many years of Christmas Bird Count data compiled across this country, Canada, and some Latin American countries. In mid-December we will again sponsor the nearby Salt-Verde Christmas Bird Count, as we have done for many years. I urge you to participate in this or other CBCs in the Phoenix Metropolitan Area. Don't refrain from taking part thinking that only expert birders and ornithologists are needed. If you have working eyes and ears you can contribute! Besides, it can be a wonderful experience spending a day in the field with accomplished observers from whom you will learn a great deal.

I hope that you enjoyed the last issue of *The Cactus Wren•dition*. The cover and an article inside featured the botanical art of our former editor, Ms. Gillian Rice, which helped to emphasize that MAS is about more than just birdlife. Instead, we are about connecting people to the natural world and helping to protect critically endangered species and their habitats—especially riparian ones—in this desert state. Please share any comments you might have about that issue, the excellent debut effort of our new editor, David Chorlton.

Among the local environmental issues that our Conservation Chairman, Mark Horlings, is pursuing now is commenting on the Draft Environmental Impact Statement for Resolution Copper's Oak Flat copper mine. The principal question the DEIS addresses is not the mine, or the methods of extracting the ore, but where to dump the tailings. The first site proposed for this dirty operation was the exceptional Sonoran Desert on the north side of U.S. 60 very near Boyce Thompson Arboretum. Thankfully, this site is no longer under consideration for the tailings.

I'm looking forward to seeing more of you at our monthly meetings and out in the field this winter. 🐦

Mark W. Larson  
President

# Letter from the Editor

by David Chorlton



David Chorlton

From the 1951 edition of Herbert Brandt's substantial ARIZONA AND ITS BIRD LIFE, come these observations about the San Pedro River: *What a wonderful land, especially for the naturalist, this must have been when, in 1540, Coronado marched his army down its length searching for the seven fabled cities of gold! At that time the climax grasses were so luxuriant as to hide a man on horseback; the now deep, shifting river channel and its affluents were an almost continuous, broad marsh; thousands of beavers saw to that.* Mr. Brandt continues with an account of the toll taken on the river by the introduction of cattle and other practices detrimental to the river's strength and health, and adds these cautionary words: *What is the outlook for man and birds? Is the dominant human factor going to continue his destruction or is he going to conserve and live in harmony with nature? In Apache-land he does not have much longer to make up his mind.*

The San Pedro is still a wonderful land, and that will be evident from reading this issue, dedicated in large part to the river, while we are also made aware of the ongoing threats to the river and its life systems. Please follow up on what you see and read here to stay abreast of developments in our borderlands and speak out in support of wise policies for wildlife. In the long run, those are the policies that benefit humans as well.

When bad news outweighs the good, I remind myself of the power nature has to regenerate itself. Think of the programs such as that to bring condors back from extinction, for example. We have to create the best circumstances and show the will to make the future one with abundant birds and beasts around us.

We continue to acknowledge those who rescue and rehabilitate birds, this time featuring Wild at Heart and their raptors. Thanks, meanwhile, go out to Gloria and Paul Halesworth, whose work as WildWing Rehabilitation Inc. saved countless birds and now they shall enjoy a well earned rest from the long hours and responsibilities.

The range of contents this time shows the overlapping of science, art, and the love of nature, with Sidney Riddle's river studies, Anina Gerchick extending her art work to help migrating birds with the Birdlink project, and the other words and pictures that make putting *The Cactus Wren•dition* together such a pleasure. Thanks to all contributors. 🐦

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## ANNOUNCEMENTS

### AMAZONSMILE

Maricopa Audubon Society is now registered on Amazon as a charitable organization. Go to MAS Facebook page for details or use the following AmazonSmile link for Maricopa Audubon Society:

<https://smile.amazon.com/ch/86-6040458>

Log onto your Amazon account and a percentage of your purchase will go to MAS!

president's message

# Maricopa Audubon Society Field Trips & Workshops



**Car Pooling:** Please make every effort to organize your own car pool, consolidate vehicles at meeting places and/or contact leaders for car pooling assistance. Be courteous to the trip leaders and help cover their gas costs. We recommend that passengers reimburse drivers 10 cents per mile each.

## Reminders:

- Avoid wearing bright colors. Wear neutral-colored clothing and sturdy walking shoes.
- Bring sunscreen, sunglasses, head protection, and water.
- Always bring your binoculars. Bring a scope if recommended.
- Submit trip and leader suggestions to the Field Trip Chair, Larry Langstaff.
- Unless stated otherwise, reservations are required.

**Day Passes:** Many locations in the National Forests require Day Use Passes. For details, see <http://www.fs.usda.gov/main/tonto/passes-permits>

## Saturday, December 7th

### Wickenburg area

We will begin our birding trip at Coffinger Park in Wickenburg, and move over to Wickenburg Meadows and Secret Ponds. If time allows (and depending how the birding goes), we will wrap up at Boetto Park. Expected birds include: Red-shouldered Hawk, Vermilion Flycatcher, a variety of sparrows and waterfowl (depending on water level in the ponds). Bring snacks, water, hat, sturdy walking shoes, and a scope if you have one. If possible, we can carpool from the parking lot next to the bridge. We will need one additional high clearance vehicle to access Secret Ponds. Please let the leader know if you are willing to carpool some of the participants to this location. Return about noon. Wickenburg is an old western town full of history and the well known Hassayampa River. After the trip, stay a while and enjoy lunch at one of the local restaurants or check out the town's history at the Desert Caballeros Western Museum or of course the Hassayampa River Preserve.

Leader: Chrissy Kondrat  
Difficulty 2. Eight participants need to reserve with: [azdesertbird@gmail.com](mailto:azdesertbird@gmail.com)

## Saturday, January 11th

### Oak Flat

Explore this oak and manzanita habitat sacred to San Carlos Apache, threatened by a foreign-owned copper mine. Likely species include: Crissal Thrasher, Black-throated and White-crowned Sparrows, Dark-eyed Junco, White-breasted Nuthatch, titmouse species, Canyon and Spotted Towhee, ravens and accipiters. 8:30 am - 11 am (excludes optional lunch at campground). Bring water, jacket, sturdy walking shoes, snacks or lunch, optional scope.

Leader Myron Scott  
Difficulty: 3. Maximum: 8. To register, email cell phone number to: [larrylangstaff1@gmail.com](mailto:larrylangstaff1@gmail.com)

## Wednesday, January 15th

### Tempe Ponds

This easy local trip will start about 7:45 am at Tempe Town Lake (with stops at Tempe Marketplace and Tempe Center for the Arts), continuing to the ponds at ASU Research Park, and ending at Kiwanis Park to check out the pond. We can expect the usual variety of winter waterfowl plus common urban desert species, and hope for some unusual species. This is an excellent beginner's trip, often with excellent close-up views, and it may include some surprises (such as Black-hooded Parakeets) that keep more experienced birders interested. Wrap up about 11:30.

Leader: Kathe Anderson  
Limited to 8 participants. Reservations required. Difficulty 1. Meeting place and carpooling logistics will be determined a few days before at [kathe.coot@cox.net](mailto:kathe.coot@cox.net)

## Saturday, February 8th

### Hassayampa Preserve

Join HP's Interpretive Ranger, Eric Hough, who has an Arizona life list approaching 430, for a 2-hour guided morning bird walk. The focus will be wintering and resident desert riparian bird identification by sight and sound, as well as discussion of their ecology. This site has quite a variety of species due to the year-round water available to cottonwoods, willows, walnut, mesquite, and ash trees. Cost: \$7 Maricopa County

outreach fee and \$5 adult entrance fee (unless you have a Maricopa County Parks annual pass or carpool with someone who does).

Trip limit-12. Difficulty 2. Bring warm clothes and good walking shoes, and water. To register, email cell phone number to [larrylangstaff1@gmail.com](mailto:larrylangstaff1@gmail.com)

## Saturday, February 15th

### Seven Springs

Explore this sycamore and cottonwood riparian habitat with juniper uplands. Possible species include American Robin, Cedar Waxwing, Rock, Canyon and Bewick's Wren, Western Bluebird, Hermit Thrush, Spotted and Green-tailed Towhee, and Red-naped Sapsucker. Bring water, jacket, sturdy walking shoes, snacks or lunch, optional scope. 8 am - 10:30 am.

Leader Myron Scott  
Difficulty: 3. Maximum: 8. To register, email cell phone number to [larrylangstaff1@gmail.com](mailto:larrylangstaff1@gmail.com)

## Thursday, February 20th

### Sweetwater Wetlands and El Rio

Sweetwater Wetlands, just outside Tucson on the north side, can be sweet indeed. Good days here can top 40 species easily, mostly waterfowl and water-related songbirds like Common Yellowthroat, Yellow-headed and Red-winged Blackbirds and Vermilion Flycatcher, but also some unexpected sightings such as bobcats. Paths are mostly level dirt and easily negotiated. From there, we'll head north a bit to bird El Rio (formerly the Coachline Gravel Pits, complete with a frisbee golf course). That site has habitat more conducive to waders, shorebirds and different songbirds. We'll start about 5:30 am in Scottsdale, find a spot for lunch near El Rio, and finish about 2 pm back in the Phoenix area.

Leader: Kathe Anderson  
Limited to 8 participants. Reservations required. Difficulty 1. Meeting place and carpooling logistics will be determined a few days before the trip. Please register with [kathe.coot@cox.net](mailto:kathe.coot@cox.net)

**Saturday, February 29th**

**Gilbert Riparian Preserve**

Get a jump on your Leap Year list with Dr. Kevin McGraw from ASU, at a local hotspot! If you have never been to this Gilbert site, you will benefit from his expertise and direction. Wintering waterfowl is the prime focus here, but along with them are many wading birds, raptors and birds found in the trees and bushes around the Preserve. Bring a hat and water and binoculars. The early morning start time may necessitate warm clothes, so be prepared. A spotting scope is beneficial here and others will share. Plan on birding for 2-3 hours.

Difficulty 2. Limit 10.

For reservations, send your cell number to [larrylangstaff1@gmail.com](mailto:larrylangstaff1@gmail.com)

**Saturday, March 21st**

**Mount Ord**

We will ascend the road through four life zones (desertscrub to Ponderosa Pine forest). Likely species: Gray Vireo, Olive Warbler, Painted Redstart, possible early Grace's and Virginia's Warbler, Acorn and Hairy Woodpecker, Bushtit, titmouse and nuthatch species, Crissal Thrasher. Bring water, jacket, sturdy walking shoes, snack, optional scope. 7:30 - 10:30 am.

Leader Myron Scott

Difficulty: 2. Maximum: 6. To register, email cell phone number to [larrylangstaff1@gmail.com](mailto:larrylangstaff1@gmail.com)

**Sunday, March 22nd**

**Lower Salt River**

This well-known and close-to-the-city field trip involves a drive along the Bush Highway between Mesa and Saguaro Lake, with several stops for birding in recreation areas along the Salt River. Spring migration should be starting, which could afford us views of Lucy's Warbler, Ash-throated Flycatcher, and Violet-green Swallow.

Lingering winter residents that we could spot are Yellow-rumped Warbler, Lesser Goldfinch, Eared Grebe, and Ruby-crowned Kinglet. Also likely are sightings of Bald Eagles, Ladder-backed Woodpecker, and Phainopepla. This area is within Tonto National Forest and requires a day-use parking pass for all drivers. Bring a lunch, and a scope, if available.

Leader: Richard Kaiser

Limit: 15. Difficulty: 1.

[rkaiserinaz@aol.com](mailto:rkaiserinaz@aol.com) 602-276-3312



SAVE THE DATE



WINTER BIRD COUNT  
DECEMBER 7<sup>TH</sup>, 2019

HUHUGAM HERITAGE CENTER  
23159 S. MARICOPA ROAD



MORE INFORMATION TO FOLLOW



field trips

**Looking Ahead:**

**Monday-Tuesday, March 23rd-24th**  
Rio Rico area (near Nogales)

**Friday March 27th**  
Birding by Boat on Lake Pleasant

**Saturday, March 28th**  
Northsight Park, north Scottsdale  
More information in the next Wren•dition

Grocery shopping?

Support Maricopa Audubon when you shop at Fry's Food Stores.

MAS is part of Fry's Community Rewards Program. Register your Fry's VIP card and select Maricopa Audubon #89166 as your non-profit organization at no cost to you. Go to <https://www.frysfood.com/topic/new-community-rewards-program>

# Conservation Update

by Mark Horlings

## SAN PEDRO RIVER NEWS

### 1. New Management Plan for the San Pedro Riparian National Conservation Area (SPRNCA)

The Bureau of Land Management (BLM) recently adopted a new Resource Management Plan (RMP) for those portions of the San Pedro River included in the SPRNCA. BLM abandoned its plan to open another 20,000 acres of SPRNCA to grazing. Under the RMP, as adopted, grazing will be allowed on the same 7,030 acres already being grazed. The RMP also dropped the original Plan's proposal to increase the number of months per year each acre may be grazed.

Public protest, including from MAS members, played a role in convincing BLM to make this change, so we can count it as a victory. As so often, however, conservation "victories" don't mean things improved, merely that they did not deteriorate.

MAS and its allies also objected to the original Plan's proposal to allow ORV use and hunting in more of SPRNCA. The final RMP added restrictions on firearms near the San Pedro House but opened new areas to hunting and ORV use.

### 2. Vigneto Development and the Saint David Cienega

The U.S. Army Corps of Engineers has reissued its Clean Water Act permit allowing Vigneto's developer to fill washes within the planned 28,000 home development near Benson. Vigneto lies four miles from the San Pedro, and proposes to rely entirely upon groundwater for its 70,000 residents.

Conservation groups, as well as the U.S. Fish and Wildlife Service, objected to the permit because the Corps of Engineers considered Vigneto's impact on fewer than 100 acres of washes within the 12,000 acres of Vigneto, rather than the entire project. The controversy surrounding Vigneto has intensified since the retired U.S.F&WS Arizona State Director reported that he was instructed he would be "wise to reconsider" his earlier objections to the permit.

Hydrologic studies indicate that Vigneto will further deplete and San Pedro and dry up the Saint David Cienega. The Arizona Department of Water Resources (DWR) has issued its own Groundwater Management Act finding that the aquifers supplying the project contain a 100-year supply of water for Vigneto. The Groundwater Management Act assures homebuyers that their wells will not run dry. It does not assure rivers that their aquifers will not do so.

### 3. Groundwater Pumping in Sierra Vista and Fort Huachuca

Last year, the Arizona Supreme Court ruled that DWR did not need to consider SPRNCA's reserved rights to water in the San Pedro before issuing its finding that a 7,000 home development in Sierra Vista enjoyed a 100-year supply of water. MAS Vice President Robin Silver served as the named plaintiff in that suit. That development, now under construction, will pump more than 3,000 acre-feet of water annually.

Recent reports list additional stressors on the San Pedro. Fort Huachuca has increased its water use by thirty percent since 2014. DWR has issued 420 permits for new wells in and near Sierra Vista since 2012.

Draining the San Pedro will end a migratory corridor for more than 300 species of birds, including species listed as endangered or threatened. MAS and its allies have filed a Notice of Intent to sue with Fort Huachuca and the Department of Defense.

## OAK FLAT AND RESOLUTION COPPER

Tonto National Forest (TNF) published its draft Environmental Impact Statement in August. The Arizona Mining Reform Coalition, which includes MAS, prepared detailed comments to file by November 7.

The most important change from previous plans is that TNF named a new preferred site to dispose of the waste rock and tailings from the mine. Instead of dumping tailings in a 400-foot deep pile across from the Boyce Thompson Arboretum, Resolution Copper would send them 22 miles from the mine, to Skunk Camp near the existing Ray Mine. Relocating the tailings pile would remove one major objection to the mine. However, the Native Americans and rock climbers opposing the mine care chiefly about Oak Flat itself, and this change does not affect the loss they will suffer.

Tonto National Forest held six public meetings in six affected towns. Members of the San Carlos Apache Tribe were particularly eloquent at those meetings, stressing the cultural importance of Oak Flat, which the mine will collapse, to their traditions. 🦅

## Help MAS with an Employer Matching Gift

Many Maricopa Audubon members aren't aware that their employers may include a matching gift program in their benefits package. Programs vary from business to business, but they generally offer a dollar-for-dollar match when an employee makes a personal gift to a nonprofit organization like Maricopa Audubon Society.

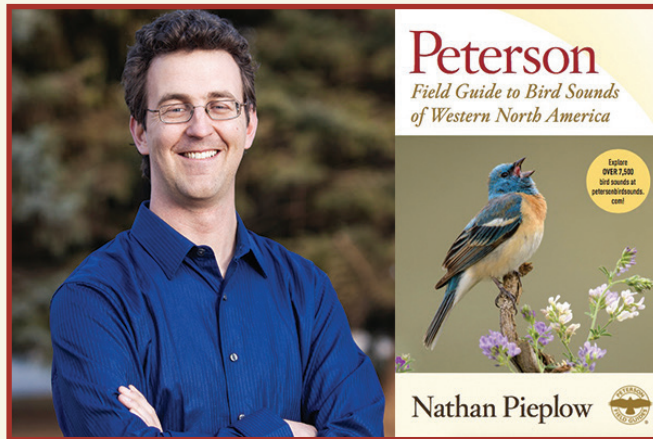
Please visit your human resources department or charitable giving department to see if this opportunity is available to you. You usually have to fill out and submit a form, which is sometimes done online. If you have already made a donation to MAS in the past year, you may be able to get a matching gift after the fact from your employer for up to 12 months later. 🦅

# Peterson Field Guide to Bird Sounds of Western North America

Nathan Pieplow, Houghton Mifflin Harcourt, 648 pp., 2019, \$28

by Laurie Nessel

**Those who bird by ear hear about ten times more birds than they see (beware the mimics!), but auditory memory is difficult for many so they rely primarily on visual signals (plumage, morphology, behavior, habitat, etc.) for identification. Bird sounds were first analyzed by spectrograph in 1961 by British ornithologist W.H. Thorpe. *The Singing Life of Birds: The Art and Science of Listening to Birdsong*, Donald Kroodsma, 2007, had an accompanying CD with sonograms. *The Warbler Guide*, Stephenson & Whittle, 2013, has a \$5.99 audio download of species in the book. Pieplow's is the first comprehensive guide. This book teaches you how to visualize bird sounds using spectrograms. Pieplow, a professor of writing and rhetoric at the University of Colorado, Boulder, pitched the idea for this book to Houghton Mifflin, who agreed to print it after the eastern guide was published in 2017. The western edition was released last April.**



Thumbing through the array of spectrograms - computer-generated graphs that show an audio wave through time - can be intimidating. The book's introduction includes a primer on translating the graphs (also available free online at [earbirding.com](http://earbirding.com)) to guide you to visualizing sound at a glance. Sounds are broken down into five essential components: pitch, speed, repetition, pauses, and tone. Each of these is dissected further to describe the full spectrum of bird sound. There is a section on making your own recordings and spectrograms as well as one on playback ethics and regulations. Pieplow summarized this topic quite well by noting that while birders refer to a bird responding to playback as "cooperative," the bird may call it harassment.

He concludes the introduction with other resources, including online recordings from Zeno-canto and Cornell Lab's Macaulay Library; books; and the blog he and Andrew Spencer created: [earbirding.com](http://earbirding.com), which includes a page on selecting software to create your own spectrograms.

After the primer come the Species Accounts in taxonomic order with a small illustration (most are by Roger Tory Peterson), a range map, and multiple spectrograms representing various vocalizations from 1 – 8 seconds long with brief descriptions

of each one. There are over 500 species (including a dozen introduced Psittacids, excluding pelagics), 3,600 digitally edited spectrograms, and an online companion of some 7,500 edited streaming audio files by nearly 350 recordists, including local birders- Chrissy Kondrat-Smith, Lauren Harter, Ryan O'Donnell, Micah Reigner, and David Vander Pluym. The outside footer is labeled with the species name for quick reference.

The Visual Index, which follows the Species Accounts, is what really makes this book unique. Spectrograms are simplified into symbols or "shorthand". Each sound is named, described, and grouped with similar sounds (including tricky, non-avian ones) along with possible species and their page numbers in the Species Accounts. The Visual Index is divided into seven color-coded sections according to a primary

characteristic such as a single-note sound, repeated similar notes, 2- and 3-syllabled phrases, etc. To expedite your search, the back endpaper has a guide to sub-categories. You can quickly search the Visual Index for a bird heard in the field.

If you can't confirm your species from the spectrographs, you can refer to the scrolling sonograms (audio tracks from which the books graphs were made using Raven Pro software) for free, online at Peterson bird sounds where you can "see" the sounds as they are heard. Many species have multiple files representing various behaviors, ages, and sex such as alarm, courtship, begging, etc.

In conclusion, if your eyes glaze over reading an owner's manual, this book may not be for you. But with a little discipline and drive, you will be greatly rewarded. At \$28 list, this is well worth the cost. It tackles a complicated subject with elegant simplicity and takes your birding to another level. While the book is a tad heavy for a field guide, if you learn the symbols shorthand, you can draw spectrogram symbols while fresh in your mind to look up later on. This alone makes the study of spectrograms, and this book, worthwhile. 🐦

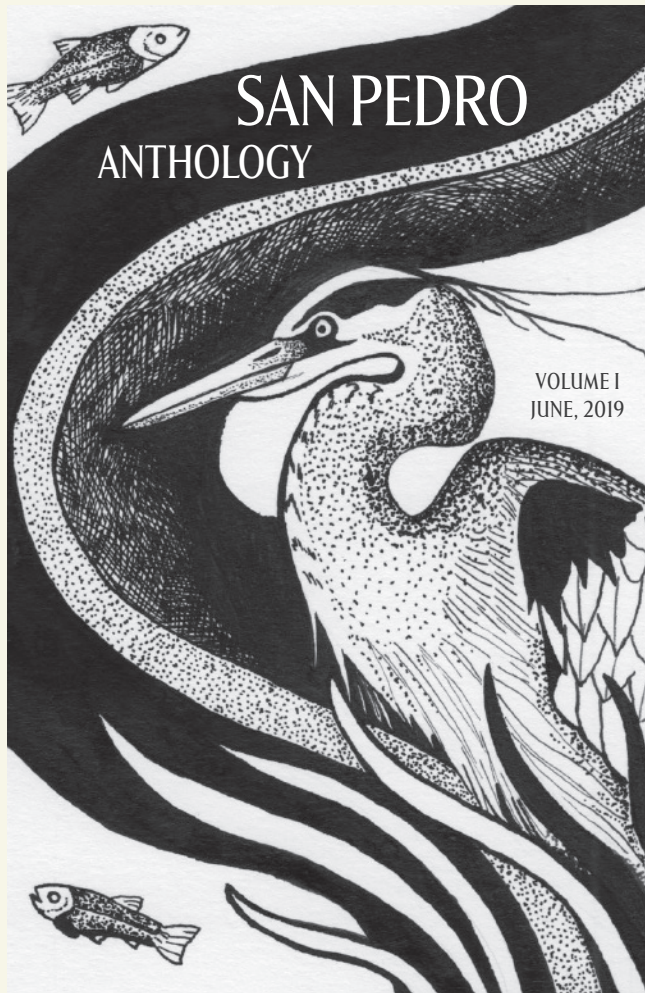
*Laurie Nessel organizes the programs for MAS meetings, along other work on behalf of wildlife. (She did not take the photograph attributed to her in our last issue of Mary Jo Ballator. We don't know who did.)*

# San Pedro Anthology

Essays submitted in support of the 30th Anniversary of the San Pedro Riparian National Conservation Area  
 Compiled by Kate Scott & Tony Heath with Nicole Gillett in coordination with Tucson Audubon Society, 42 pp.,  
 \$15, includes shipping. To order, go to [www.MAWCenter.org/shop](http://www.MAWCenter.org/shop)

by David Chorlton

**This short but varied collection of writings ranges from personal reflection through scientific and historical aspects of the San Pedro River in prose and poetry, with illustrations that are strikingly effective in black-and-white. The opening contribution is from novelist Barbara Kingsolver, who formerly lived in Tucson and knows the river well. “In summer this modest saint invites us down from the blazing heat into a willowy tunnel of cool shade, birdsong, and the velvet brown scent of riverbank. We take unhurried hikes, reading the dappled script of animal tracks and the driftwood history of flood and drought embedded in the steep banks. The sight of a vermilion flycatcher leaves us breathless every time—he’s not just a bird but a punctuation mark on the air, printed in red ink, read out loud as a gasp.”**




R. J. Luce succinctly summarizes why the river is so important: “The San Pedro River is the primary wildlife movement corridor that connects the mountains of the Madrean Archipelago, often referred to as Sky Islands. These isolated mountain ranges: Whetstone, Dragoon, Mule, Chiricahua, Galiuro, and Huachuca, to name a few rise from the Chihuahuan desert in southern Arizona.”

We can sense the character of a place best as it is experienced directly, and here is a record of exactly what the river means in personal terms. This anthology brings focus to detailed observations such as this, from Lizann Michaud, a Bisbee based graphic artist and musician: “Another trip... seeing (and hearing!) several bees inside a large Datura flower bud—the skin of the flower cone, translucent, backlit by the setting sun, dark buzzing bee shadows bouncing inside, then, waiting and watching as the bees pried the large fragrant blossom open, in their eagerness to take pollen.”

Based just outside Bisbee, Michael Gregory has long been an observer of natural systems and is a former conservation chairman of the Sierra Club Grand Canyon Chapter, and former director of Arizona Toxics Information. He is also a poet whose work has deep roots in his chosen ground. His poem, When it Rains in May ends by listening to local voices:

“Up on the rimrock they decipher unanswered prayers.  
 Down here the message goes round by word of mouth.”

Deni Seymour traces threads of history in A River Heals: The San Pedro’s Legacy, Paul Young tells about Environmental Engineers: Beavers on the San Pedro River, and Kelly Tighe recalls San Pedro River Memories, to point out just three selections that touch on the senses as well as the science of an Arizona treasure. The photographs appear carefully selected and bring more light to a collection that strengthens the case for careful stewardship of the San Pedro. 

## Sign up for the e-newsletter!

To receive updates and supplements to *The Cactus Wren•dition*, sign up for the monthly (September to May) e-newsletter. It includes meeting and field trip reminders, special events, and citizen science projects. To subscribe, contact [laurinessel@gmail.com](mailto:laurinessel@gmail.com)

Note: We do not use the email list for anything other than the described purpose.





# Protecting the San Pedro River

by Gail Cochran



*White-crowned Sparrows by Vicki Hire.*

protecting the san pedro

**Like a magic elixir, water brings life to the arid desert. The San Pedro River is the last undammed river of the American Southwest, and critically important to multitudes of resident and migratory birds. This riparian corridor is also precious habitat for eighty-four species of mammals, including jaguar, coatimundi, bats, mountain lions, and beaver; and more than forty-one species of reptiles and amphibians. Six native fish species remain, including the Gila Chub which is proposed for federal listing as endangered.**

As a mild climate and relatively low land costs have driven growth and development along the Santa Cruz and Salt River valleys, the San Pedro corridor has become ever more vital to the survival of birds navigating the north-south migratory flyways. The species of note that qualify the site as an Audubon Important Bird Area are the endangered Southwest Willow Flycatcher, Yellow-billed Cuckoo, Northern Beardless Tyrannulet, Tropical Kingbird, Bell's Vireo, Lucy's Warbler, Yellow Warbler, Gray Hawk, Common Black Hawk, Zone-tailed Hawk and the majority of nesting Mississippi Kites in Arizona.

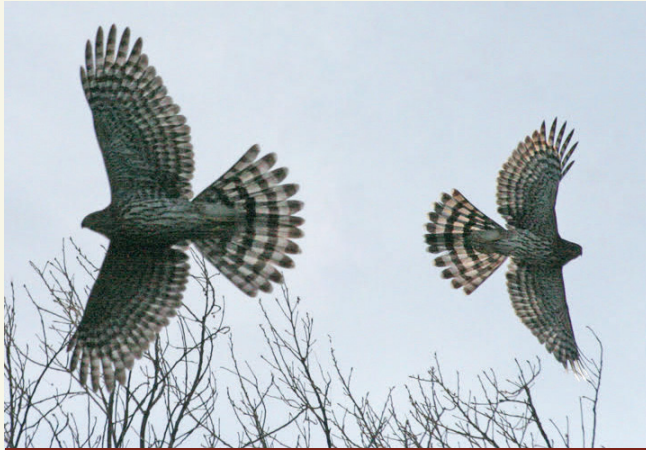
Groundwater pumping since the 1940s has decreased the San Pedro River's base flows by 67%. The last remaining perennial flows are now threatened. When the river's water is drawn deep underground, native streamside plants such as cottonwoods are weakened and invasive species such as tamarisks thrive. This has a profoundly negative effect on bird species in particular and all animal species in general.

Just as a wide range of animals leave their prints at the river's edge, so the conservation of the San Pedro River watershed has been taken up by a surprisingly diverse group of organizations. A common recognition of the ecological stakes and a collaborative approach have made these alliances strong.

"Despite the critical importance of this major riparian zone in context of rapid dwindling wildlife habitat in the state, the San Pedro Watershed is being subjected to inappropriate development pressure." In response to these threats stated on their website, the Lower San Pedro Watershed Alliance has formed a collaborative of twenty entities including local, state, and federal agencies, as well as non-governmental organizations. Using tools such as conservation easements, advocacy and wildlife monitoring programs, the Lower San Pedro Watershed Alliance has fought to save this unique desert river ecosystem. Their efforts have resulted in the conservation of 190,000 acres of private and leased watershed land now held in various types of easements. At the Three Links Farm project a 90% reduction in agricultural water use has been achieved over the last five years. Cottonwood seedlings now grow along the riverbed and shores and the natural flows are intact throughout this reach of the river. The LSPWA has taken a stand against development pressures such as the I-10 Bypass proposal and the SunZia Transmission Project.

The most recent threat, the proposed Villages at Vigneto development near Benson, would bring 70,000 new residents to a verdant Italian style complex that would draw all of its water needs from the fragile San Pedro watershed aquifer. That planned development is now held up in the court system thanks to EarthJustice efforts.

# Protecting the San Pedro River cont.



*Cooper's Hawks by Matt van Wallene.*

The Nature Conservancy has been a key contributor to the protection of the San Pedro watershed. Through easements, four private properties have been conserved from development and now make up a 10-mile long corridor linking the Galiuro Mountains to the Rincon and Catalina Mountains.

The Cochise Conservation and Recharge Network is a cooperative effort with Cochise County and Fort Huachuca. One stormwater runoff recharge facility is already using surface water to replenish the aquifer and support river flows, and three other sites owned by Nature Conservancy are planned along the river.

Groups of citizen scientists walk the entire 170-mile length of the San Pedro River every June and record where it is wet and where it is dry during the most arid time of the year. Twenty years' worth of data on summertime surface flows within the San Pedro Riparian National Conservation Area are now available as an animation. These observations were recorded by volunteers through the Wet/Dry Mapping Project - a collaboration between the Nature Conservancy and the Bureau of Land Management. For more information on the Wet/Dry Mapping Project see [http://azconservation.org/projects/water/wet\\_dry\\_mapping](http://azconservation.org/projects/water/wet_dry_mapping)

The Business for Water Stewardship is a collaborative project between Arizona Land and Water Trust, Intel Corp and the Arizona Game and Fish Department. Over 100 acres of agricultural fields near Mammoth, Arizona historically used to grow corn and wheat have been converted to pasture of native grasses. This restoration not only saves on irrigation but better captures and filters surface water and enhances groundwater recharge. The Trust estimates 710 acre feet of water has been saved the first six years of crop conversion, with 610 acre feet potentially saved every year going forward.

Even SRP is involved in conservation of the San Pedro River. Mitigation obligations placed on SRP relating to the Roosevelt Lake Habitat Conservation Plan require the utility to acquire and manage into perpetuity replacement habitat for Southwestern Willow Flycatchers and Yellow-billed Cuckoos on the lower San Pedro. These and other legal requirements will

drive the utility in efforts to transfer surface water rights on the lower San Pedro from agriculture to instream flow for wildlife.

The Cascabel Conservation Association works to develop collaborative stewardship of the Middle San Pedro River watershed, while the Upper San Pedro Partnership is active in the Sierra Vista and Fort Huachuca areas. Audubon's Western Rivers Action Network is also involved in this essential work.

Over our lifetimes, the interests of big money, resource extraction and development have won out over the needs of habitats and wildlife. But here on the stage of this one river, internationally recognized for its biodiversity, we see how clarity of purpose and collaboration may still save the day. 🐦

*Gail Cochrane is a 22-year resident of the Sonoran Desert and wildlife advocate.*

## Poem by David Chorlton

### *Villages at Vigneto*

Turn on a faucet in the kitchen  
of a new house among houses  
built close to a river that has been  
redirected to serve  
domestic needs, and out comes the first  
Vermilion flycatcher followed  
by Yellow-billed cuckoos, a Gray hawk,  
grosbeaks, warblers, vireos, doves, jays,  
and struggling through the plumbing  
a badger prepared to gnaw through  
every chair leg he can find.  
It won't be long  
before the orioles appear, and after them  
a Coachwhip and a garter snake.  
Some turtles thud as they drop  
into the basin, then two dozen  
sparrow species come  
back into the light  
after their journey through darkness  
left behind when the current  
weakened and the water was too little  
to sustain them. A bobcat shakes the last  
moisture from his fur  
as sunlight spreads its dusk glow on the window  
and the bats arrive. It's too late to turn  
the faucet off. Too late  
to put the river back  
where it belongs.

*(First published in Slipstream, Niagara Falls, NY)*

# Raptor Rescue

by Beth Edwards



Outside WAH sign



Sam Fox and Great Horned Owl nestlings

**Wild at Heart, Inc is a volunteer-based, non-profit organization dedicated to the rescue and care of Arizona's hawks, owls, eagles, and falcons. Since its founding over 28 years ago, over 10,500 rescues have come through its doors. Bob and Sam Fox, Co-Directors, created WAH with the rescue of a single Barn Owl, Chia, who went on to become Wild At Heart's first Barn Owl foster bird parent. Thanks to their efforts and to the 100+ active volunteers, WAH now rescues approximately 800 birds each year.**

Another aspect of WAH is its involvement in community outreach and education for Arizona wildlife. With the aid of its volunteers, WAH goes on the road to take some of its educational birds into schools, community centers for the general public and, into the workplace to



Zone-tailed hawk

raise awareness of not only nature but for the opportunity for volunteer group activities.

Wild at Heart is also known to be the most active, if not only, organization to “pre-rescue” Arizona’s threatened population of Burrowing Owls. WAH has a strong relationship with real estate developers where it helps to remove the ground dwelling owls before bulldozing and construction begin. With the help of volunteer groups from the general public (from youth to senior citizens), over 2,000 Burrowing Owls have been relocated to

new safer areas within the state.

How you can help if you find an injured bird:

Contact Wild at Heart by calling 480-595-5047. Please DO NOT send an emergency message through e-mail or through the Facebook page. Take a picture if you are not sure of species or if it needs help and call. Phone is answered 24/7!

Secure the injured bird in a box, laundry hamper, or pet kennel.

If the bird is a large owl or hawk, you can toss a large towel over it and then scoop up the bird. It is their feet, not their beak that are dangerous.

Cover the box with a towel and place the bird in a dark, quiet area that is protected from the heat or cold.

Never try to give the bird food or water. Their diets are specialized -food could harm their stressed bodies and it is easy to asphyxiate a bird with even small amounts of water poured into its mouth. At most, place a shallow dish of water with the bird and let it choose if it wants to drink.

If you would like to learn more about how to help Arizona's raptors or would like to support your wildlife through volunteering or donations, see their website at <https://WildAtHeartRaptors.org> or their Facebook page <https://www.facebook.com/WildAtHeartOwl>. 🦅

Beth Edwards works with Wild at Heart



Sheherezade and Nestlings

*San Pedro River Seasons*



*Photo by Vicki Hire*



*© Robin Silver*



© Robin Silver



© Robin Silver



the turning year



## A Bird for Every Season

R. J. Luce

*Ladder-backed Woodpecker by R. J. Luce*

**Simply put, the San Pedro River bird migration corridor in southeastern Arizona makes the long trip from South America to Canada possible for many of the migrant birds that use our part of the Pacific Flyway. Without stopover places with good habitat they just couldn't make it.**

I enjoy the San Pedro River corridor and the annual migration as much as the birds do. I'm not a snowbird because to me the river environs are new and exciting all year. Twice a year, over 250 species temporarily use their migratory home along the San Pedro River. The migration period is a great time for birding, while the 100 or so year-round residents are close friends and I like to see them too.

Winter is interesting because some species become more inter-specifically social in winter and gather in large groups, proving that birds of a feather really do flock together. For instance, the congregation of the Yellow-headed Blackbirds defines winter like nothing else, as does the persistent calling of Great Horned Owls. The appearance of Mexican Mallards, American Wigeon, and Northern Shovelers on the river, and big flocks of brown/gray-colored sparrows: Chipping, Brewer's, and White-crowned Sparrows help mark the season.

The first call of the Canyon Wren in February and the Gray Hawk, usually in late March, both say spring to me. The arrival of the orioles: Scott's, Hooded, and Bullock's; and many warbler species is always thrilling. Great Blue Herons carry nest building material and one day, the mostly empty sky is

filled with dozens of soaring Turkey Vultures. The mournful calls of poorwills fill the early morning airwaves and loud chirps of Gambel's and Scaled Quail preparing to mate are a mid-day chorus. Gould's Turkeys gobble often in early morning.



*Gray Hawk by R. J. Luce*



Gambel's Quail chicks by R. J. Luce

The appearance of the first summer tanagers and grosbeaks (Black-headed and Blue) in May heralds summer as does the first appearance of Gambel's Quail and turkey broods. Passing Common Black Hawks, calls of Yellow-billed Cuckoo, groups of Blue Grosbeaks and hummingbirds (mostly Black-chinned and Broad-billed, but occasionally Rufous and Anna's) define the summer season too. Mallard broods, including Mexican Mallard, roam the river and juvenile Great Blue Herons, Red-tailed Hawks, and ravens stand up in their nests to squawk and beg.

In fall, the annual White-crowned Sparrow shift change takes place in southern Arizona when our summer birds move south to Mexico and birds from the north arrive to occupy their niche along the San Pedro. Flocks of Lark Sparrows, Western Kingbirds, and mixed groups of hundreds of swallows (Barn, Tree, Rough-winged and Violet-green) line fences and power lines. Groups of migrating Sandhill Cranes, Double-crested Cormorants, and ducks of various species are heard or seen flying over.

It is a year-round nature show along the San Pedro River, each species living a life that makes a television-worthy documentary. Hopefully the birds can just keep doing what they do. Our job is to protect the forests, rivers, mountains, wetlands, and grasslands so they can. 🐦



Hooded Oriole by R. J. Luce

*R. J. Luce received a Bachelor of Science in Wildlife Biology. He worked for the Wyoming Game and Fish Department for 30 years on songbird, marsh, and small mammal management programs. Among his books is River of Life, a photo essay about the San Pedro River.*

# Along the Lower San Pedro

by Sidney Riddle



Gallery Forest

Photographs by Sidney Riddle



Mesquite Forest

**Water is king in the arid Southwest. So too are the places where water resides: streams, rivers, and their terrestrial confines. These riparian zones, which surround rivers, often support a wide array of habitat types and wildlife species. By most estimates, riparian zones are less than two percent of the total landmass in the Sonoran Desert, but are used by the majority of wildlife species. To compound this issue of rarity, there exists a constant tug-of-war between ecological and human water needs.**

The lower San Pedro River basin in Southeastern Arizona is a prime example of this wildland-human water conflict. It is part of one of the last remaining undammed rivers in the Southwest and supports expanses of native cottonwood-willow gallery forests which provide critical habitat for a rich wildlife assemblage. This portion of river has the great misfortune of

fertile soils and abundant copper deposits. Mining and irrigation practices alone account for an estimated 140,000 cubic meters of groundwater extraction each day. As groundwater is taken for mining, irrigation, and development, thirsty trees like Fremont's cottonwood and Gooding's willow can be replaced by species like velvet mesquite that can tolerate drier conditions. When streamflow is altered or diverted, riparian zones become disconnected from rivers. This can lead to a reduction in native gallery forest and a proliferation of non-native species like the infamous saltcedar. To make matters worse, climate change is predicted to result in a hotter and drier climate in the Southwest, which may exacerbate and accelerate the shift from cottonwood-willow gallery forests to non-native saltcedar and mesquite forests.

Amphibians and reptiles (collectively, herpetofauna) provide a useful lens through which we can examine the effects of habitat change. Amphibians are good indicators of habitat health, and because of their dual aquatic-terrestrial lifecycle they are also



Saltcedar Forest



sensitive to changes in water conditions. Lizards are similar to birds in that some species exhibit a strong affinity for particular types of habitat structure, making them useful animals for understanding the effects of habitat change.

The research that my colleagues and I conduct aims to address the question of how these predicted habitat changes might alter the amphibian and reptile communities



Couch's spadefoot

than in comparatively drier mesquite forests. In addition to lower abundances, we found marked differences among lizard community composition between the three riparian habitat types. The most commonly captured species in gallery forests and mesquite forests was the parthenogenic (asexual; all-female) Sonoran spotted whiptail. Interestingly, this species was almost completely absent in saltcedar forests, and seemed to be replaced

## “Overlooked wildlife demonstrate the value of intact riparian habitat along the lower San Pedro River”

of the lower San Pedro River. To address this question, we compared capture rates of herpetofauna in native riparian forest dominated by Fremont's cottonwood and Gooding's willow, monotypic forests of non-native saltcedar, and forests of velvet mesquite. We trapped amphibians and reptiles in 2016 and 2017 at eighteen sites in the aforementioned three riparian forest types near the confluence of the San Pedro River and

by the closely related tiger whiptail. This finding is consistent with patterns found in other wildlife communities wherein habitat specialists are replaced by generalist species when riparian habitats are dominated by saltcedar.

We encountered amphibians less frequently than lizards and captures were largely composed only of Couch's spadefoot



Tiger whiptail



Sonoran spotted whiptail

Gila River. We trapped only during the summer months, when ectothermic animals are most active. We assigned each animal a unique mark so that we would have an idea of how many individuals of each species were at each site. In addition to our trapping effort, we also deployed sound recorders to document reproductive vocalization effort of amphibians.

During the course of our study we captured 960 individual lizards, representing nine species. The most notable result of lizard-trapping was that lizard abundance was more than twice as high in gallery forests than in monotypic saltcedar forests, and was about fifty percent higher in gallery forests

toad. This mostly fossorial frog was captured three times more often in mesquite forests than in gallery forests and only two individuals were captured in saltcedar forests over the course of two summers. Our sound recordings told a similar story, as we detected calls of male Couch's spadefoot in both mesquite and gallery forests, but not in saltcedar forests. We were not surprised to have a greater number of captures in the drier mesquite forests, as this species is possibly the most arid-adapted amphibian in North America. However, we were alarmed to find so few individuals residing in saltcedar forests and to see no reproductive effort there.

To date, the bulk of wildlife research on the San Pedro River has focused on birds, and for good reason, as several threatened or endangered species use the river and its riparian habitat. Our research demonstrates the importance of an intact San Pedro River to not only charismatic wildlife groups, but also to overlooked wildlife communities like amphibians and reptiles. Our findings add to an extensive and growing body of literature which argues that the San Pedro River riparian system is unique and valuable ecological resource that warrants protection. As thirsty human populations continue to flock to Arizona, rivers like the San Pedro could be pushed beyond their limits. 🐸

As a wildlife biologist with Arizona State University, Sid Riddle specializes in riparian ecosystems of the Southwest.

# Birdlink: A Tool In Support Of Biodiversity

Anina Gerchick & [www.birdlink.world](http://www.birdlink.world)



**One million plant and animal species are facing extinction risks according to the 2019 UN Inter-governmental Science-Policy Platform on Biodiversity and Ecosystem Services. Habitat creation, conservation, and expansion in cities can be challenging due to spatial and fiscal constraints. BIRDLINK responds to the challenges of biodiversity loss and critical stopover habitat conservation with an innovative concept of habitat interventions that enhance community engagement in conservation. Birds are universally appealing to people, and they help to focus attention on environmental issues. Native plant habitat is critical for a significant number of bird species that migrate through our cities, as well as for other important pollinators.**

BIRDLINK offers low cost, deployable native plant structures to cities facing a shortage of ground and mid-level canopy habitat. The BIRDLINK sculptures "green infill" public spaces--adding species diversity and vegetated areas to neighborhoods. The first BIRDLINK prototype has sparked public excitement with its living structure. These densely planted native species habitats provide food and refuge for birds and insect pollinators. BIRDLINK living sculptures outperform planting beds, which the public generally ignores, by making vegetation noticeable through artful stacked configurations of planted modules that attract people's attention. The universal appeal of birds, the display of plant beauty and accompanying informational signage also make BIRDLINK an

educational tool. Two New York City public spaces currently site BIRDLINK. The project is poised to build its initial successes into a scalable, replicable tool for confronting the challenge of biodiversity loss and for communicating ecological urbanism to diverse communities. 🐦

[aninagerchick.com/birds](http://aninagerchick.com/birds)

<https://sunstonestrategies.coveragebook.com/b/323daacf/attachments/17119202>

**Birdseye Prey digital image 2017 is a collage made from my original painting Birdseye which is oil on canvas 48 x 34 inches.**

I have been a painter all my life with an emphasis on people and portraiture as well as landscape with animals. I became focused on birds while painting outdoors, and since I live on the Atlantic Flyway I thought about habitat requirements to support the large bird populations that migrate through New York City twice a year. I began designing interventions for urban public space as an artist and then studied landscape architecture in order to have the ecological knowledge and the planning tools to design for public space. Now the BIRDLINK project is a way to integrate both my fine art and landscape architecture interests and connect people with birds.



in the arts



# Connecting with nature makes Arizona a fun and better place to live!

Compiled by Vicki Hire  
Photos by Vicki Hire

## What If There Were No Rivers? Protecting Arizona's San Pedro River

**Did you know** one of the most important riparian areas in the United States is the San Pedro River? The San Pedro is home to 84 species of mammals, 14 species of fish, 41 species of reptiles and amphibians, and 100 species of breeding birds. More than 200 species of migrant and wintering birds also depend upon the San Pedro for temporary habitat. Nearly 45% of the 900 total species



Mississippi Kite

of birds in North America use the San Pedro River at some point in their lives.<sup>1</sup> That amounts to millions of migrating birds using the cottonwood-shaded corridor.<sup>2</sup> Unique wildlife such as the coatimundi, Yellow-billed Cuckoo, jaguar, ocelots and ringtails also inhabit the area.

**Did you know** the San Pedro is unique because it is the last undammed desert river in the American Southwest? It is one of two Arizona rivers that flow north from Mexico into Arizona.<sup>3</sup> The San Pedro begins at the confluence, or meeting, of two streams in Sonora, Mexico about twenty miles south of Sierra Vista, Arizona and continues for 143 miles north, ending as a tributary of the Gila River. On November 18, 1988, Congress designated 40 miles of the upper San Pedro River as a Riparian National Conservation Area to protect its riparian ecosystem.

**Did you know** rivers are part of a 'water cycle' which replenishes the Earth's supply of fresh water essential for almost every living thing? Rivers carry water from land to the ocean. As seawater in the ocean evaporates, clouds form. They carry moisture and release it as precipitation or rain, which feeds small streams and rivers. This endless process is part of the Earth's water cycle.<sup>4</sup> If there were no rivers there would be no rain, no wildlife, no freshwater fish, and not enough clean drinking water for humans. Rivers bring life to hundreds of plants, birds, and animals that depend upon water for survival.

**Did you know** parts of the San Pedro River are no longer perennially flowing, and there is concern that the river is drying up due to population explosion and the pumping of thousands



Pyrrhuloxia

of acre-feet of groundwater from the aquifer beneath the river? An aquifer is an underground layer of water-bearing permeable rock, rock fractures or material such as gravel, sand, or silt. Because the San Pedro River aquifer is close to the surface, water from the mountains can run down and be stored in there for use during dry spells. If the water table in the aquifer gets below a level where the trees and plants cannot reach it, the trees will perish and the river will dry up.

**Did you know** volunteers are helping to map the flows of the San Pedro so that water managers can come up with strategies to restore year-round flows and prevent further deterioration of the ecosystem? Each year, more than 100 volunteers have worked along 300 miles of the San Pedro River and its key tributaries to map where the river has water and where it doesn't.<sup>5</sup> Organizations such as the Center for Biological Diversity in Tucson and the Maricopa Audubon Society of Phoenix-Scottsdale-Tempe, are working tirelessly to protect the threatened San Pedro ecosystem against the encroaching population and its pumping of groundwater. Visit these websites for information on their efforts, how you can become involved or support their efforts:

<https://www.biologicaldiversity.org/support/join/> and  
<https://www.maricopaudubon.org/join>

- 1 [https://www.biologicaldiversity.org/programs/public\\_lands/rivers/san\\_pedro\\_river/index.html](https://www.biologicaldiversity.org/programs/public_lands/rivers/san_pedro_river/index.html)
- 2 <https://www.nature.org/en-us/get-involved/how-to-help/places-we-protect/san-pedro-river/>
- 3 <https://www.nature.org/en-us/get-involved/how-to-help/places-we-protect/san-pedro-river/>
- 4 <https://www.nationalgeographic.org/encyclopedia/water-cycle/>
- 5 <https://www.nature.org/en-us/about-us/where-we-work/united-states/arizona/stories-in-arizona/arizona-san-pedro-water-mapping>

### EXTRA

**Did you know** The United States has more than 2.9 million miles of rivers? Rivers can carve out canyons in the landscape like the Grand Canyon in Arizona which was carved by the waters of the Colorado River. The watershed of a river is an area of land that contains a set of streams which drain into a single body of water. Rivers and the waters that feed them have many different names -stream, creek, brook, rill, runnel, rivulet and watercourse, which all are considered tributaries.

*Vicki Hire is an accountant who loves to see birds when she looks up from statistics.*

## Green Scene True or False?

- T F 1. The San Pedro River flows North.  
 T F 2. The San Pedro River begins in Sonora, Mexico.  
 T F 3. The San Pedro River's waters flow perennially.  
 T F 4. Coatimundi live in the San Pedro riparian areas.  
 T F 5. Congress designated 40 miles of the upper San Pedro River as a Riparian National Conservation Area.

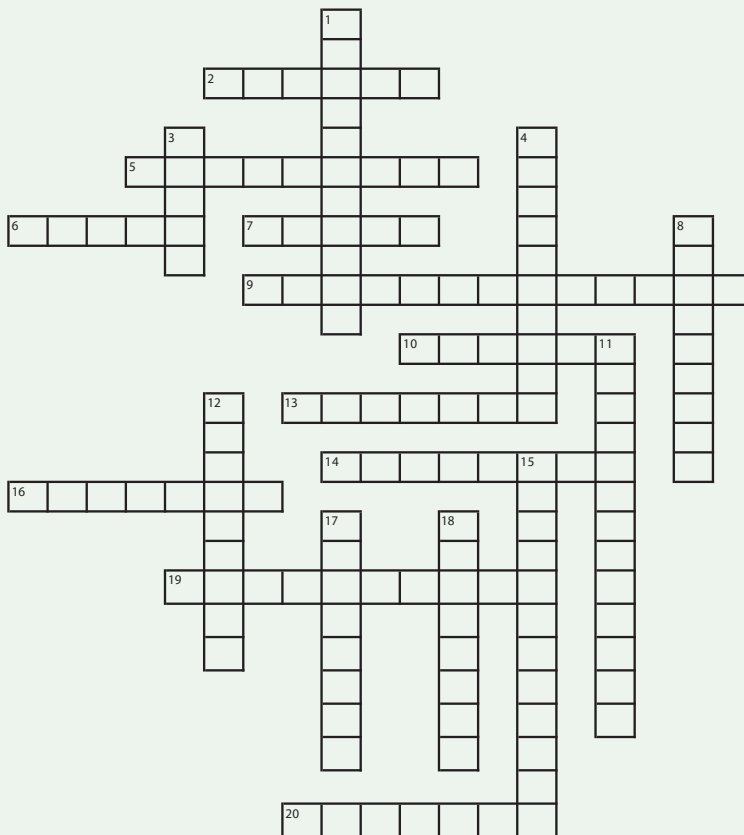
## Guess this Bird!

**CLUE:** This bird does not drink water but obtains it from the food it eats. It has a long tail that has a stroke of cinnamon color down the center.



## Protecting Arizona's San Pedro River

Answers on page 23



### Across

- 2 The San Pedro River begins in Sonora, \_\_\_\_\_  
 5 Millions of \_\_\_\_\_ migrating birds use the cottonwood-shaded corridor along the San Pedro River  
 6 Rivers are part of a process called water \_\_\_\_\_, which replenishes the Earth's supply of fresh water  
 7 The San Pedro River flows \_\_\_\_\_  
 9 Another word for rain  
 10 These carry water from land to oceans  
 13 Rivers can carve out \_\_\_\_\_ in the landscape  
 14 Clouds carry \_\_\_\_\_ and release it as rain  
 16 An underground layer of water-bearing permeable rock, rock fractures or material such as gravel, sand or silt  
 19 Where two or more streams of water meet  
 20 The San Pedro River is home to 84 species of \_\_\_\_\_

### Down

- 1 Streams or rivers flowing into a larger river or lake  
 3 The San Pedro River is 143 \_\_\_\_\_ long  
 4 \_\_\_\_\_ are mapping the flows of the San Pedro  
 8 Organizations are working to protect the threatened \_\_\_\_\_ of the San Pedro River  
 11 The last undammed desert river in the American Southwest  
 12 Rivers are the \_\_\_\_\_ to hundreds of plants, birds, and animals  
 15 The \_\_\_\_\_ has more than 2.9 million miles of rivers  
 17 The Grand Canyon was carved by the waters of the \_\_\_\_\_ River  
 18 In 1988, forty miles of the upper San Pedro River was designated as a Riparian Natural Conservation Area by \_\_\_\_\_

# Christmas Bird Count

The National Audubon Society has conducted Christmas Bird Counts since the year 1900. Volunteers from throughout the Western Hemisphere go afield during one calendar day between December 14 and January 5 to record every bird species and individual bird encountered within a designated 15-mile diameter circle. These records now comprise an extensive ornithological database that enables monitoring of winter bird populations and the overall health of the environment. Participants are typically assigned to teams based on their bird identification skills and endurance. Many counts hold a compilation dinner at the end of the day where results are tabulated and stories are shared. Help is needed on most of these counts.

Date	Day	Count Name	Compiler	Phone	Email
12/14/19	Sa	Salt-Verde Rivers	Kurt Radamaker	480-585-1606	kurtrad at mexicobirding.com
12/14/19	Sa	Avra Valley	Mary Lou Cole	925-389-1397	marylou40 at gmail.com
12/14/19	Sa	Ajo-Cabeza Prieta	Stephanie Doerries		stephaniedoerries at fws.gov
12/14/19	Sa	Nogales	Alan Schmierer	805-801-3701	aaschmierer at yahoo.com
12/14/19	Sa	Martinez Lake-Yuma	Lin Piest	928-341-4049	lpiest at azgfd.gov
12/14/19	Sa	Santa Catalina Mountains	Kendall Kroesen	520-971-2385	kkroesen at cox.net
			Holly Kleindienst	520-308-7604	hollykleindienst at gmail.com
12/14/19	Sa	Jerome	Rob Gibbs	240-780-1318	robgbbs54 at gmail.com
12/15/19	Su	Grand Canyon	Brian Gatlin	928-638-7723	brian_gatlin at nps.gov
12/15/19	Su	Organ Pipe Cactus NM	Daniel Martin		daniel_j_martin at nps.gov
12/15/19	Su	Ramsey Canyon	Ken Blankenship	770-317-8486	kenblankenshipbirding at gmail.com
12/16/19	Mo	Lukeville	Daniel Martin		daniel_j_martin at nps.gov
12/16/19	Mo	Chino Valley	Russell Duerksen	928-925-5567	duerksen at msn.com
12/17/19	Tu	Tucson Valley	Luke Safford	520-629-0510	saffordluke at gmail.com
12/17/19	Tu	Phoenix-Tres Rios	Marceline VandeWater	602-689-4356	marceline at ermaroni.net
12/18/19	We	Prescott	Carl Tomoff	928-778-2626	tomoff at northlink.com
12/19/19	Th	Patagonia	Patsy Vandenberge	520-604-6601	pvndnbr5 at gmail.com
12/20/19	Fr	Saint David	Heather Swanson	520-307-4405	SPRNCAbird at hotmail.com
12/20/19	Fr	Sedona	Richard Armstrong	928-282-3675	richarmstrong at q.com
12/21/19	Sa	Atascosa Highlands	John Yerger	814-308-4078	john at adventurebirding.com
12/21/19	Sa	Hassayampa River	Chrissy Kondrat-Smith	623-451-1250	hassayampacbc at yahoo.com
12/26/19	Th	Superior	Joy Bell	480-760-1393	joyabell_az at yahoo.com
12/27/19	Fr	Gila River	Troy Corman	602-717-2928	aplomado02 at gmail.com
12/28/19	Sa	Buenos Aires NWR	Bonnie Swarbrick	520-240-3737	bonnie.swarbrick at gmail.com
12/28/19	Sa	Green Valley-Madera Canyon	Malcolm Chesworth	203-947-2440	malcolmsc at yahoo.com
12/28/19	Sa	Flagstaff-Mount Elden	Terry Blows	928-523-6863	terence.blows at nau.edu
12/28/19	Sa	Portal	Jackie Lewis	520-558-2287	winjac12 at vtc.net
12/29/19	Su	Bill Williams River NWR	Marge Penton	928-201-0619	malgaep at gmail.com
12/30/19	Mo	Havasu NWR	Marge Penton	928-201-0619	malgaep at gmail.com
12/30/19	Mo	Carefree	Cathryn Wise	602-301-7530	cwise at audubon.org
01/02/20	Th	Camp Verde	Kay Hawlee	432-703-0007	khawlee at gmail.com
01/02/20	Th	Payson	David Hallock	928-474-9475	eldoradh at rmi.net
01/02/20	Th	Lake Pleasant	Mary McSpren	602-790-0110	marymacdanes at q.com
01/03/20	Fr	Appleton-Whittell	Suzanne Wilcox	520-455-5522	swilcox at audubon.org
01/03/20	Fr	Glen Canyon	John Spence	928-608-6267	john_spence at nps.gov
01/04/20	Sa	Dudleyville	Doug Jenness	520-909-1529	d_jenness at hotmail.com
01/04/20	Sa	Timber Mesa	Mary Ellen Bittorf	928-367-2462	mcbit30 at cableone.net
Unknown		Willow Beach	Joey Saccomanno	928-767-4772	joseph_sacomanno at fws.gov
Unknown		Tonto NM - Roosevelt Lake	Danielle Herzner	860-940-8187	herznerdani at yahoo.com



Spotted Towhee by Matt van Wallene



## Green Scene Puzzle Answers

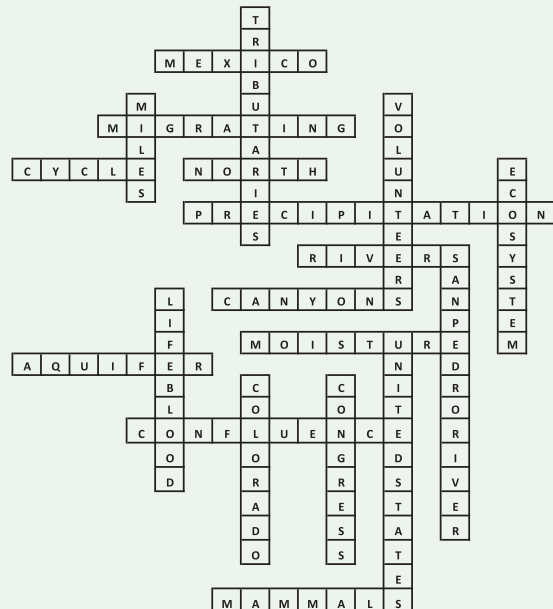
### Answer to Guess this Bird

Ash-throated Flycatchers like to winter in Arizona and Mexico. They rely on nest holes originally made by other birds such as woodpeckers, or in naturally occurring cavities in dead trees. Sometimes they will also nest in artificial cavities like mailboxes, fence posts and other structures. They forage mostly by flying from a perch to hover and pick insects from foliage, but seldom catch them in mid-air! Their diet also includes spiders, bees, and caterpillars. Learn more at [https://www.allaboutbirds.org/guide/Ash-throated\\_Flycatcher/id](https://www.allaboutbirds.org/guide/Ash-throated_Flycatcher/id)

### Answers to True or False?

1. TRUE
2. TRUE
3. FALSE
4. TRUE
5. TRUE

### Answers to Protecting Arizona's San Pedro River Crossword Puzzle



## Membership

Being a Friend of Maricopa Audubon Society keeps you in touch with fellow birders and brings you four issues of *The Cactus Wren•dition* annually. It costs \$20, or more if you choose to give additional support, and you can pick up a form at the book sales table during a monthly meeting. You can also sign up by visiting our website:

<http://maricopaaudubon.org>

There is more! You can contribute in the best way possible by lending your abilities to our board. Interested? Send an email to: [larsonwarren@gmail.com](mailto:larsonwarren@gmail.com)



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# Maricopa Audubon Society

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## Monthly Meeting

Please see meeting information on page two. Contact a board member if you have questions, or check out our website at [www.maricopaaudubon.org](http://www.maricopaaudubon.org)

## Membership Information and How to Receive *The Cactus Wren*•dition

Two distinct memberships exist: membership of the National Audubon Society (NAS) and membership of the Friends of Maricopa Audubon Society (MAS).

To become a member of the NAS please go to:  
[www.audubon.org/audubon-near-you](http://www.audubon.org/audubon-near-you)

We send *The Cactus Wren*•dition to all current members of NAS if you are assigned to or choose MAS as your local chapter. NAS provides MAS \$3.00 per year for each member assigned to us.

To become a Friend of MAS, please pick up a form at the book sales table at our monthly meeting or visit our website, <http://maricopaaudubon.org>

For specific questions please contact our Membership Chair.

## Submissions

Copy for *The Cactus Wren*•dition must be received by the editor by email by **January 15**, April 1, July 1, and October 1. Articles not received by the deadlines may not appear in the upcoming issue. Some issues may feature a specific focus, so please feel free to enquire and take the theme into account. Email to: *The Cactus Wren*•dition Editor, David Chorlton: [chorltondavid3@gmail.com](mailto:chorltondavid3@gmail.com)

## Opinions

The opinions expressed by authors in this newsletter do not necessarily reflect the policy of the National Audubon Society or the Maricopa Audubon Society.

## Reprinting of material

Unless stated explicitly in the article, material in *The Cactus Wren*•dition may be reprinted in other newsletters as long as the material is credited to the original author and to *The Cactus Wren*•dition.

**This publication is printed on recycled paper.**

Layout and design by Ben Franklin Press Inc., Tempe, AZ

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