

VERMILION FLYCATCHER

TUCSON AUDUBON

Summer 2023 | Vol 68 No 3

BIRDS & WATER:
MONSOON SEASON



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ON THE COVER

Varied Bunting by Fred Mitchell. Fred observes and photographs birds and wildlife in southern Arizona for the sheer pleasure of it.

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Western Tanager, Francis Morgan



Saguaro National Park

MONSOON EXPECTATIONS

Monsoon. The word alone conjures up excitement, wonder, relief, and expectation. I love the palpable and immediate change it brings to our landscape—bringing our sleepy, sun-drenched desert and grasslands to verdant life overnight. As it approaches, monsoon also brings with it a sense of uncertainty (will it come?), particularly acute in the context of a changing climate.

Stepping into this new season—in senses both literal and figurative—with Tucson Audubon, I can't help but draw parallels, and find myself welling up with the same level of excitement and expectation that I experience at the onset of monsoon. Excitement about what we will accomplish together, how we will evolve together, and how we will succeed in meeting the ever-more-challenging needs of birds and their habitats, while creating a brave, inclusive space where all perspectives are valued.

I recognize that Tucson Audubon has gone through several cycles of change, and that there will be uncertainty and expectation as I transition into this role at a critical time when birds and the communities in which they (and we!) live depend on our decisive, focused action. In

my previous work with Tucson Audubon as a collaborative partner and volunteer, I've witnessed their growth in the conservation space, their bold action in advocacy, and their nimble resilience, engaging communities in conservation, science, and education in creative ways that are approachable and collaborative. I'm as eager to contribute to and amplify this work as I am to welcome the 2023 monsoon.

I hope you can join me and my colleagues at the Southeast Arizona Birding Festival this August to celebrate this most wonderful time of year and all it brings, listening for the unmistakable calls of rain crows (Yellow-billed Cuckoos) and spadefoot toads, delighting in quail antics, and charting new paths toward a brighter future for birds, birders, and future birders alike.

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ALMANAC of BIRDS

July to September

July and August are glorious months in Southeast Arizona! We've made it through very hot and dry June and usually monsoon moisture has begun to move in and at least tempt us with billowing clouds and shade. Once the rains do start and lightning cracks, the birds of the region respond to an increase in resources and fatten up for migration or go for a first, second, or even third round of breeding! Warblers and shorebirds are migrating through and also take advantage of the hordes of insects and increased water available. And if it's a really good year down in Mexico, dispersing rarities such as Aztec Thrush and Plain-capped Starthroat could make appearances. It's an exciting time for birding and living!



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Painted Bunting, Greg Lavaty



YELLOW-BILLED CUCKOO

The ultimate monsoon bird for Southeast Arizona, you can be forgiven if you've never seen a Yellow-billed Cuckoo—they're very sneaky and only here for a few weeks! Their time here coincides with our rainy season and it's said that they have a tendency to call at the sound of thunder, leading to the nickname "rain crow." These long-distance Neotropical migrants spend winters down in South America and arrive in Arizona in June and are already heading south again by late August. For a medium-sized bird with bright white underparts and a long black and white spotted tail, they can be extremely stealthy and difficult to see, even after you've heard their often loud and unique *ka-ka-ka-ka-kowlp-kowlp-kowlp* call. Because they utilize riparian areas with giant cottonwood and willow trees, you can stare up into the thick leaves for quite some time and never see one. Try your luck on the Santa Cruz River near Tubac or on the San Pedro River, but don't delay! Once started, their breeding cycle is an amazingly quick 17 days from egg laying to fledging of young.

Yellow-billed Cuckoos can also be found in the oak woodland habitat of our Sky Islands, the Patagonia Mountains, and the west-slope foothills of the Huachucas. Populations west of the Rocky Mountains have been listed as federally threatened since 2014, and Tucson Audubon's survey work with the Coronado National Forest helped determine their regular presence in this habitat type. Whether in cottonwoods or oaks, cuckoos display a vigor for feeding on large prey such as hairy caterpillars and cicadas, a trait they share with their more terrestrial cousins, the roadrunners.

Yellow-billed Cuckoo, BN Singh
Female Painted Bunting, Mick Thompson



PAINTED BUNTING

The Painted Bunting is my top nemesis bird, and yes, it is a monsoon species in Southeast Arizona. This is one amazing-looking bird that I have not yet seen! As can be expected with a bird as dazzling as this, interesting Painted Bunting facts revolve around their feathers. Males acquire the striking combo of an electric blue head, vibrant red eye ring, breast, belly, and rump, and yellowish-green back, in their second fall season. Not to be outdone, females are a cryptic shade of green that is quite unlike any other bird's coloration. The male Painted Bunting's striking coloration has inspired names such as *siete colores* (seven colors) in Mexico and *nonpareil* (without equal) in Louisiana. The western population of Painted Buntings undergoes a prebasic molt in which it migrates to Southeast Arizona and northern Mexico in late summer and early fall to molt before moving on to southern Mexico and Central America for the winter (a common strategy in waterfowl but not songbirds). Interestingly, the eastern population (limited to the coastal Carolinas, Georgia, and Florida) stays put and molts on their breeding grounds before migrating to southern Florida and the Bahamas.

Painted Buntings like weedy areas adjacent to water and can often be found foraging for seeds along with other buntings and goldfinches. August and September is prime time for them here and many have been found around Tucson in places like Agua Caliente Park, Sweetwater Wetlands, Tanque Verde Wash, and along the Santa Cruz River. Try your luck and you'll probably see one before I do!

A SEA OF GREEN

Vibrant Summer Grasslands



At the mention of Arizona, what springs to mind first? For many, it's epic scenery and wide open spaces—Arizona has no shortage of iconic landscapes. To the north we have the magnificent Grand Canyon and famous Monument Valley, with adjacent red-rock canyon lands. The southern portion of the state is famous for its desert scenes, with rugged mountains and iconic saguaro cactus.

It's surprising, but sweeping vistas of grassland habitat can also be found in Arizona. In fact, the San Rafael Grassland, east of the Patagonia Mountains, has been immortalized as the filming location of the movie "Oklahoma!" Next time you watch this musical, take a look at the mountain ranges in the distance. They should look familiar if you've spent time in Southeast Arizona.

For those aware of grasslands in Southeast Arizona (part of a larger grassland ecosystem called the Chihuahuan Desert Grasslands), you probably know how great these areas are for winter birding. Many local and visiting birders spend winter days exploring these grasslands, with the hope of finding a White-tailed Kite, a rare Rough-legged Hawk, or a flock of Chestnut-collared Longspurs, one of North America's fastest declining species.

Tucson Audubon has surveyed these longspurs since 2011 in Las Cienegas NCA and the San Rafael Grasslands, both designated as Important Bird Areas of global significance for their vital role as wintering habitat for this species. Grassland birds, as a group, are the fastest declining in North America. Large patches of this shrinking habitat type are in urgent need of protection.

The wintering species found in Chihuahuan Desert Grasslands have such a high conservation status that it's perhaps not surprising birders rarely go to these areas outside the winter months. What's happening in these

grasslands during the summer months? The summer monsoon is an amazing time in our grasslands, and it was a non-grassland associated bird that showed me what I had been missing.

Yellow-billed Cuckoos travel from South America to nest in Southeast Arizona during the summer monsoon. While surveying for them in Sky Island drainages on the west edge of the Huachuca Mountains, I fell in love with the summer version of the adjacent grasslands. Completely transformed by the summer rains, the normal rolling slopes of golden grass had turned green and verdant. Summer wildflowers were popping up all around, and the air was filled with the bird song of many species.

The Cassin's Sparrow is one of these species. It has a subtle and understated coloring of mostly beige and brown, and is in southern Arizona year-round but is much easier to spot during the summer months compared to any other time. Its song is magnificent with clear, sweet notes, often given in flight. The male's fluttering display, up into the sky and back down again, is known as "skylarking" as it's reminiscent of how the famous Skylarks of Europe perform their breeding displays. Cassin's Sparrows are incredibly responsive to rainfall and will take advantage of the insect abundance needed to successfully raise a nest of chicks. They will also abandon a dry area and quickly move to other patches of grassland that received more rain and therefore have more food resources. Their ability to respond to local environmental conditions means in some summers they can occur in areas they haven't been detected in for several years.

Another bird of the grasslands is the Botteri's Sparrow, a somewhat mysterious and little studied species. Its range within the US is restricted to Southeast Arizona and it was assumed to migrate south after wrapping up monsoon nesting. With more birders out carefully looking, its presence has now been confirmed in Arizona throughout the winter. It's likely that



OPPOSITE: Chihuahuan Meadowlark, Martin Molina
Botteri's Sparrow, Matthew Studebaker; Cassin's Sparrow, Greg Lavaty.



Blue Grosbeak, Alan Schmierer; Loggerhead Shrike, Martin Molina

much of the population moves south for the winter, but at least some individuals stay in Arizona year-round and are very difficult to detect when not singing. Beginning in May, listening for their charismatic song is an excellent way to find them as they often perch in a prominent location, sometimes at the top of a mesquite tree. Their song is a dynamic mix of jazz style “scatting” that segues into a “bouncing ball” series of notes. It’s extremely distinctive, and one of my very favorite sounds of the grasslands. Botteri’s Sparrows nest on the ground, often in the center of large clumps of sacaton grasses, and their primary prey are grasshoppers which are very abundant during the monsoon months.

There are many other species that take advantage of the summer abundance of these grasslands, such as Chihuahuan Meadowlark (recently split as a distinct species from Eastern Meadowlark), Loggerhead Shrike, Blue Grosbeak, and Varied Bunting.

The rains that come with a good monsoon are the primary source of moisture for the native grasses for the year. They do most of their growing and develop their flowers and then seeds at this time. Therefore, the abundance of grass seeds for wintering birds to feed on, is directly tied to the quantity of the previous summer’s monsoon rains. The summer season has a huge impact on how good the birding will be for all of us in the following winter.

If you haven’t been to the grasslands of Southeast Arizona during the summer, try it this year and witness one of the most exciting and surprising birding experiences of this region. It really is monsoon magic out there!

Jennie MacFarland,
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A sea of green in the San Rafael Valley, Jennie MacFarland

The North American Monsoon Explained

Zack Guido

Living in southern Arizona, June can feel like one of the longest months. The days have been steadily growing longer through the spring and now finally peak at their longest length. The noon sun is at its highest point in the sky. It feels closer now, like you can touch it. The afternoon heat, arid wind, and random dust devil look to be hunting down every drop of water, desiccating plant, animal and human alike. But, change is in the air. By the end of the month high cirrus clouds are on the horizon to the south. Sometimes you can see the lightning at night down in Mexico as storms build. Then, one morning, a stiff and humid breeze flows out of the south into southern Arizona. This is the beginning. The monsoon has arrived.

The shift from the reliably hot and dry conditions in June to the humid and wetter weather pattern in July is part of a larger seasonal climate shift called the North American Monsoon System. A monsoon, by definition, is a seasonal reversal in the prevailing wind pattern and is caused by the land surface heating up faster than nearby ocean areas. There are monsoon systems all over the world, but the South Asian monsoon is the best known. The prevailing winds shift from north to south in the summer, drawing humid air from the Indian Ocean up into the Indian subcontinent, fueling torrential rains.

The shift in winds with the North American Monsoon is more subtle, but caused by the same mechanism. As the interior areas of northern Mexico and the southwest U.S. heat up in the late spring and early summer, a large high-pressure dome in the mid to upper levels of the atmosphere

builds and slowly moves north. This shifting weather pattern also causes the winds in the mid to upper levels of the atmosphere to shift from a dry southwesterly flow in June to a more moist southerly and southeasterly flow by early July. This shift in winds draws in a moist tropical airmass that supports afternoon thunderstorms.

This moist airmass is more reliably present as you go south into Mexico, and the boundary between hot and dry air to the north and moist and cool air to the south is usually present across far northwest Arizona. It can move north and south throughout the summer leading to active periods when deeper moisture is present across the Southwest and breaks when drier air from the northwest moves back in across the region. Typically, the monsoon circulation patterns start to break down in early September as the days get shorter and the land surface starts to cool. The typical, dry desert airmass starts to overtake the Southwest again in September as the tropical moisture retreats south into Mexico. Occasionally, a tropical storm can curve into the Southwest later in the season, but the moisture is temporary and the monsoon gives way to fall weather by October.



Mike Crimmins is on the faculty of the Department of Environmental Science at the University of Arizona and is an Extension Specialist in Climate Science for Arizona Cooperative Extension. He has been in this role for 15 years working with ranchers, farmers, and natural resource managers across Arizona to integrate climate information in their planning and decision making.

GOING WITH THE FLOW

Birds and Arizona's Riparian Areas



Cottonwood-willow forest is the single most productive habitat in the United States, Alan Schmierer

Lying on a boulder in Aravaipa Creek, under shady cottonwoods and willows, I was watching longfin dace shimmering in a shallow pool, when a loud, agitated squawking caught my attention. I looked up in time to see a Great Blue Heron flapping ponderously downstream complaining all the way, as a Black Hawk chased it out of its territory. The hawk came cruising back and landed on a sandbar upstream, eyeing the Sonora suckers.

Everywhere I gazed the riparian area was full of wild displays of life in all its exuberance. Calls of Canyon Wrens, Yellow-breasted Chats, Blue Grosbeaks, and Yellow Warblers filled the air. A common buckeye flitted about. Mountain lion, Gila monster, and deer tracks dotted the sandy bank. A troop of coatis swarmed up the cliff wall.

Riparian ecosystems—the zone of vegetation along the banks of a river, stream, or creek (usually including the aquatic habitat)—are linear oases, ribbons of broadleaf forests that are incredibly rich in biodiversity and natural beauty. In lower elevation riparian areas, such as Aravaipa Canyon, the San Pedro, and the Santa Cruz (near Tubac) Rivers, cottonwoods and willows predominate. These forests are relict populations left from the

mid-Tertiary period (30 million years ago) when the climate was cooler and wetter, and these trees were more widespread. Now they are restricted to streams or near water where they can keep their toes wet. Cottonwood-willow forest is the single most productive habitat in the United States, providing a cornucopia for birds and wildlife of every kind.

These riparian areas are dynamic ecosystems, always changing as they are frequently disturbed by, but are adapted to and need, flooding (especially during the monsoon). This flooding is necessary for the recruitment of new trees and creates a patchwork of micro habitats with different sizes of trees, shrubs, thickets, ground covers, open areas, and edge habitats. This great species and structural diversity allows a myriad of birds, such as Common Yellowthroats, Yellow-billed Cuckoos, and Abert's Towhees, and animals like spotted skunks, ringtails, and black-tailed rattlesnakes to thrive here.

Some birds, such as the Black Hawk, are obligate riparian nesters, dependent on the mature gallery forest, but plenty of other raptors such as Cooper's hawks, Gray Hawks, and Zone-tailed Hawks also favor the tall cottonwoods for building their large stick nests. Old giant trees are



Common Black Hawk, Alan Schmierer



Summer Tanager, Hemant Kishan



Yellow-breasted Chat, Greg Lavaty

important for this. When the epic 1983 flood wiped out most of the huge cottonwoods in Aravaipa Canyon, the number of nesting Black Hawks dropped precipitously. Birds may also utilize various areas for different needs. Gray Hawks often nest in the tall cottonwoods but need the adjacent mesquite forest to hunt for snakes.

In addition to the microhabitats, the vegetation also changes with distance from the river or water source.

Just back from the creek, velvet ash, Arizona walnut, sycamore, netleaf hackberry, alder, and other trees and shrubs mix in with the cottonwoods and willows providing habitat for Vermillion Flycatchers and Song Sparrows.

Still further back from the stream where the water table is a bit lower, are lush mesquite bosques supporting a whole different suite of animals and birds, such as Lucy's Warbler, Bell's Vireo, Gray Flycatcher, and Ladder-backed Woodpeckers, among others.

These zones then transition out to the surrounding habitat. In the desert, washes with catclaw, palo verde, desert hackberry, desert willow, wolfberry, desert broom, and climbing milkweed are often called dry riparian areas. They may carry water only a few times a year, but that's enough to support lush vegetation and taller trees where Gila Woodpeckers, Curve-billed Thrashers, Cactus Wrens, and Gambel's Quail flourish.

As I splashed upstream I heard the calls of Summer Tanagers, Hooded Orioles, and Yellow-breasted Chats, but it was the *pie, pie, pie, pie* call of a Northern Beardless Tyrannulet that grabbed my attention. It was gleaning insects from the foliage and I hoped it would soon fly back to a nest. Their nests are often hidden in the webs of tent caterpillars and can be hard to find. This one was completely hidden, tucked into a clump of mistletoe. That made 16 species of bird nests I've found in mistletoe clumps so far.

The hollow trunk of an old cottonwood beckoned. It's always worth a look, as bats, saturniid moths, owls, or some other surprise may be occupying it. As I peeked inside, a Bewick's Wren flew out. Nearby, a Lucy's Warbler

slipped into a tree hole. Nesting cavities are valuable real estate, and the big, older trees tend to have more holes.

These riparian forests are critically important to birds and animals of all kinds. About 80% of animals in the southwest spend at least a portion of their life in the riparian zone. In a dry year, more songbirds may survive by crowding in along the streamside oasis where they can still find insects, fruits, and other food resources as well as nesting sites. Ravens and other birds may nest elsewhere but commute to the riparian zone to forage. Though they comprise just a small percentage (0.4%) of the land in Arizona, riparian areas host more birds and wildlife than any other habitat. Over 228 bird species have been reported in Aravaipa, from Osprey, White-faced Ibis, American Dippers, and Northern Waterthrush to Elegant Trogon.

Streams are also natural flyways for migrating birds (the Tubac Hawk Watch on the Santa Cruz River recorded over 3,100 raptors this spring) and they are important corridors for black bears and other mammals, contributing to genetic diversity.

Though only a limited number of riparian areas still flourish in Arizona, (90% have disappeared) each is a critical reservoir of biodiversity, a complex ecosystem vital to plants, wildlife, and ourselves. These wild places restore and renew us, uplift and inspire us. They reconnect us to the wonders of life on earth. These seem like good reasons to do everything we can to conserve such treasures of nature.

As I sat under a magnificent sycamore, listening to the sweet song of a Canyon Wren, I remembered Jane Austen's quote, "To sit by a creek and watch nature is the most perfect day."



Pinau Merlin is a nationally known speaker, naturalist, and writer. She is the author of several books and over 80 articles about the wildlife, natural history, and ecology of the Desert Southwest.

FROM URBAN DESERT TO OASIS: Rewilding Tucson with Rainwater Harvesting

In the Sonoran Desert, all living beings are limited and shaped by water. The rain comes in two seasons, winter and summer, but it is not predictable. Sometimes it falls in a drizzle, other times it's a monsoon deluge. Half a season's worth of rain can come all at once. To adapt, many plants and animals are opportunistic—they take advantage of periods of abundance and rest during scarcity. Humans are the only ones who dare to squander water in the desert. But as temperatures rise and aquifers dry up in the American Southwest, one thing is clear: we need to find more sustainable ways of living that respect and care for water in the long term.

Here in Tucson, the impacts of urban development can be felt viscerally. Temperatures have gone up by 0.45°F on average each decade since the 1950s, in part because of the heat island effect and likely made worse by climate change. The Santa Cruz River, whose floodplain had been used for agriculture for thousands of years, dried up in the 1940s after decades of mismanagement, and Tucson residents now receive much of their water from the Colorado River over 300 miles away. This is draining the water table of that once bountiful watershed, and just like the Santa Cruz, it may eventually run dry.

In looking for solutions, we can learn from civilizations that lived sustainably for centuries in arid environments all over the world. What did they do differently? How did they cope with harsh desert conditions and conserve water to survive? One of their key innovations was to “plant the rain”

through passive and active methods of rainwater harvesting. By using these techniques we can make our city a more sustainable and resilient home for both humans and birds. Here's how.

Passive harvesting uses gravity and dirt barriers to create standing pools of water during rainstorms. Anyone can do it. Next time it rains, observe the water. How does it flow? On asphalt streets, water moves fast and is not absorbed. This urban runoff collects contaminants and trash, discharging pollution into nearby rivers and streams. If dirt is compact and dry, as is often the case in the desert, water also flows off easily, leading to erosion and flooding. By shaping the landscape with basins that are contoured by dirt mounds and rocks, we can slow the flow of water to help plants better soak it up through their roots. As water infiltrates deeper into the soil, less of it is lost to evaporation or runoff, helping the ground retain more moisture and become more sponge-like in the long term. If enough people and neighborhoods implement passive rainwater harvesting, we could restore lush native habitats in urban areas and re-establish migratory corridors for many animals and birds.

Those who wish to go a step further might also consider active rainwater harvesting. You can do this by using gutters to channel the rain from a building's roof into a large container (cistern) that feeds your irrigation system. This technique can be especially helpful during droughts or on a regular basis to extend bloom periods and create a lush habitat.



Black-throated Gray Warblers benefit from velvet mesquite, Scott Olmstead



Pyrrhuloxias feed on the fruit of desert hackberry, Mick Thompson



Rainwater harvesting structures can create oases in the desert, Kari Hackney



A basin awaits rainwater via a curb cut, Jennie MacFarland

People tend to associate the desert with dryness, but did you know that more rain falls on Tucson over the course of a year than the total amount of municipal water used by city residents? With a free online rainwater calculator, you can easily estimate how much water you could collect from your roof based on square footage and average annual rainfall. Try the calculator at TUCSONAUDUBON.ORG/RAINWATER—you might be surprised with the results.

Urban environments actually offer a variety of microclimates, often with more shade and concentrated moisture than the surrounding desert. This supports a greater biodiversity, similar to what you would find in a range of biomes throughout the Sky Islands. Rewilding our cities and suburbs means mimicking these healthy natural environments, with an overstory, midstory, and understory.

The velvet mesquite is one of the best overstory trees you can plant for wildlife and it becomes established more quickly if aided by rainwater harvesting basins. This tree supports countless native pollinators and insects, which provide nourishment for birds like Bell's Vireos, numerous migrating warblers, and Verdins. They are used as roosting or nesting sites by White-winged and Mourning Doves, Lucy's Warblers, and Phainopeplas, and their seeds are eaten by a variety of mammals and birds, including Gambel's Quail.

Smaller midstory shrubs and trees are also essential—they provide hiding spots, nesting sites, and food for many birds. The desert hackberry, for instance, produces a bounty of orange berries that feed Northern Cardinals, Pyrrhuloxias, and Northern Mockingbirds. Finally, planting the

rain creates pockets of coolness and moisture necessary for shade-loving understory plants like violet wild petunia, red justicia, and sacred datura that are important for pollinators, or grasses like side oats grama and bush muhly that birds use for nesting and coverage.

Though rainwater harvesting may seem daunting, there are many great resources available to help you get started. Tucson Audubon's Habitat at Home program offers landscape water conservation plans, native habitat consultations, and installation services for homeowners. The City of Tucson offers free rainwater harvesting workshops and a rebate that can be used towards installing a cistern or creating passive harvesting earthworks. And at a larger scale, neighborhoods can apply for mini grants to build water harvesting features. There are also government initiatives like the Storm to Shade Program that support rainwater harvesting on city property. Tucson Audubon helps maintain these public basins so they can be fully functional for the upcoming monsoon season.

Through its Urban Conservation and Sustainability Department, Tucson Audubon is trying to make the city more resilient by using simple solutions like rainwater harvesting. With this approach, we can all help conserve water, create shade, and restore native habitats that will benefit birds, wildlife, and humans.

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A Permanent Wetland at the Ash Canyon Bird Sanctuary

“The cienega is dry. Unless we do something, it’s not going to be a cienega anymore. Can you help?” asked Mary Jo Ballator in the fall of 2018. A few weeks later, we slowly walked down the hill from the backyard feeding station of the Ash Canyon B&B to what had formerly been a healthy cienega replete with cottonwoods, sycamores, sedges, and spikerush constantly showing emerald green due to the abundant water. The ground was now parched and dry, deeply cracked and crusted with salts. A few months later in May of 2019, Mary Jo passed away.

The project, to restore the cienega, never left my mind, even as drought intensified and the feasibility plummeted. I then received a call from Tom Wood of Southeastern Arizona Bird Observatory (SABO), the new owners and managers of the renamed Ash Canyon Bird Sanctuary. They’d seen our pond and stream in the Grand Memorial Meadow at the Paton Center and wanted to create something similar. Could we help? The idea clicked: a unified wetland complex with a recirculating stream, a pond, and a cienega, created and managed to support numerous threatened and endangered species. Partners for Fish and Wildlife loved the idea and agreed to help fund the project.

Work began in earnest in 2022: excavating the pond, installing the underlayment and liner, and getting all the stream pool elevations just right to create appropriate spawning areas for Gila topminnows, and desert pupfish. “We should be getting fish in July!” said Tom at our last visit wrapping up the project. “And, our Safe Harbour Agreement is done,

so hopefully Chiricahua leopard frogs will come soon, too.” The artificial cienega is already proving to be a success: the threatened Arizona eryngo we planted last year set seed and there are over 30 little seedlings growing quickly. The whole complex is filling in quickly and starting to look natural. “It’s so much fun having wetland plants. As a desert gardener, anything that requires water seems like the Holy Grail to me” said Sheri Williamson of SABO. The project still awaits the correct clone of Huachuca water-umbel to be available to include, but even before things had started growing in at all it was a resource for the surrounding birds, bats, and insects—aquatic insects colonized the feature almost immediately.

With two incredible monsoon seasons back to back, followed by a consistently wet winter, the cienega at the bottom of the hill is looking renewed as well. So many of the plants that had lain dormant have sprung back up, sedges, spikerushes, and cottonwoods emerald green once more. How long it will last is anyone’s guess. Even with the new artificial cienega proving to be a ready resource for the local wildlife, the desire to preserve and enhance the natural cienega lies strong with Tom and Sheri, and with me. Plans are underway...

Jonathan Horst
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The Ash Canyon Bird Sanctuary now has a unified wetland complex with a recirculating stream, a pond, and a cienega, created and managed to support numerous threatened and endangered species; Jonathan Horst

Help Us Find Martins of the Monsoon



Desert Purple Martins nest in saguaros during the monsoon, Richard Fray

If you spend time in Sonoran Desert habitat in Southeast Arizona between May and September you may encounter large swallows near saguaro cacti. These are Desert Purple Martins, a distinct subspecies of Purple Martin that nests exclusively in cavities in large columnar cacti such as saguaros in Arizona or cardons in Baja. Desert Purple Martins are loosely colonial and multiple pairs will nest in adjacent saguaros or even in different cavities within a single, large saguaro. They can be perched on top of saguaros, seen going in and out of cavities and frequently heard calling while flying around their territory. When they detect a threat or human intruder near their saguaro, they give a loud alarm call which attracts other Desert Purple Martins to the area to help them intimidate the target by calling and swirling around. They can be found on or near saguaros as early as late April after their migratory journey from South America. They will choose a saguaro for nesting through May and June but don't actually lay eggs until July. This timing is very important as they depend on the insect abundance that comes along with monsoon storms and elevated humidity. The adults are very capable hunters and will catch dragonflies, damselflies, and other flying insects with agile and precise flying skills.

Where do you come in? We need help finding and mapping the saguaros used by nesting Desert Purple Martins! If you have noticed a particular saguaro that seems to have been chosen by martins for nesting this

summer, please share this information with Tucson Audubon. Your reports help with our ongoing project to identify and map patches of desert favored by nesting Desert Purple Martins. Sonoran Desert habitat faces serious threats from invasive grasses and associated fires that can kill full grown saguaro cacti. Since Desert Purple Martins have only been known to nest in cavities within saguaro cacti in Arizona, protecting these birds relies on preserving their nesting saguaros. Knowing which patches of saguaros they prefer for nesting helps Tucson Audubon prioritize sites for invasive plant control.

To report saguaros used for nesting by Desert Purple Martins to Tucson Audubon, you can snap a photo of the saguaro with your smartphone and then submit the sighting to **iNaturalist**, a free app, and identify the species as "Purple Martin." You can also report the details of your observation on our website: TUCSONAUDUBON.ORG/PURPLEMARTIN.

Thank you!

Jennie MacFarland,
Bird Conservation Biologist
jmacfarland@tucsonaudubon.org



WATER IN THE WILDLIFE GARDEN



Yellow Warbler, Rick Williams

Like all wildlife, birds need water as well as food and shelter to survive. Although many obtain moisture from the fruits or insects they eat, almost all birds are attracted to some source of water, both for drinking and for bathing.

Not only do birds seem to enjoy getting wet, they also require bathing for cleaning and realigning their feathers. If you watch an enthusiastic bather, you will see something like this: The bird will wade into the water, duck its head in, then quickly raise it, all the while vigorously beating its wings. The wing action causes water to be splashed over the ruffled feathers on its back. The bird may then fly to a less vulnerable spot, shake itself to dry and begin to preen, systematically drawing feathers through its bill to remove oil, dirt, and parasites. Water bathing may also be a means of temperature control.

Water features can be as simple as a planter pot saucer or as elaborate and ornate as a three-tiered fountain with a pump that recycles water. Having the water raised off the ground helps protect birds from lurking predators. But a shallow dish, if placed away from dense shrubbery where stalking

cats and other predators might hide, also works well. Ground level birdbaths have the advantage of attracting other types of wildlife such as ground squirrels, cottontails, coyotes, and bobcats.

Whichever type of water feature you use, keep it shallow—no more than three inches in depth—suitable for some of the smaller songbirds. You can use flat rocks to create different depths. It is also important to keep your water source clean. Daily cleaning by scrubbing and rinsing is ideal. On the other hand, if you are able to provide moving water, it will stay cleaner longer. Even a slight flow can prevent water from stagnating and reduce the chances that disease-carrying organisms will be spread from one bird to another. The sound of moving water may also help to attract passing birds. The hookup for moving water can be as simple as a copper pipe connected to an irrigation tube or slow-drip faucet.

Lynn Hassler
*Green Gardeners Volunteer Captain
Historic Y*



Second Spring Brings Exciting Birds

Arizona in the summer! This does not sound appealing to most people from outside Arizona, but Arizona birders revel in the monsoon season. In our “second spring,” the desert and grasslands become lush, and the birds respond with a flurry of breeding activity.

This rainy season is famous for the grassland sparrows, in particular Cassin’s and Botteri’s. Like magic, they are suddenly everywhere singing their hearts out, as if they’ve emerged out of the ground like spadefoot toads. One of the most iconic birds of Southeast Arizona during July and August is the displaying Cassin’s Sparrow, rising and singing its distinctive trilling song in flight, and dropping like a rock to perch on a bush or fence. Botteri’s are perhaps even more common, and other sparrows such as Rufous-winged, Grasshopper, Black-throated, and the much sought-after Five-striped Sparrow, also become much more conspicuous once the summer rains start.

Although it is exciting to see Arizona’s breeding birds at this season, the summer monsoons also extend down into Mexico, and we sometimes benefit from breeding successes south of the border, as rare species move north into the US from July through September. One in particular, the Aztec Thrush (first seen in Arizona in the summer of 1978), is exceedingly rare in Mexico, so it is amazing that it has shown up in Arizona about 30 times. In 1996 alone, there were about 20 individuals around Southeast Arizona, and some lucky birders saw as many as eight in one tree in Carr Canyon!

Virtually all the Aztec Thrush records are in August and September during the monsoons. Another “vagrant” from Mexico that shows up during the monsoon season is the Yellow-green Vireo, which has occurred in Arizona no fewer than 20 times. Interestingly, this species occurs regularly along the California coast, but virtually all those records are from later in the fall, mainly September and October.

The monsoon season is also an excellent time for rare hummingbirds from Mexico, such as Plain-capped Starthroat and White-eared and Berylline Hummingbirds. Other “Mexican” species, such as Black-capped Gnatcatcher and Rufous-capped Warbler, periodically become established in Southeast Arizona after what are presumably very good breeding seasons in Mexico during the summer monsoons, with dispersing birds colonizing areas farther north. It is also well-known that Painted Buntings, once thought of as a rarity in Arizona, stage and go through a molt in Southeast Arizona before migrating south. During especially wet monsoon years, as many as 50-100 individuals have been found during August and early September. The summer monsoon is an exciting season in Arizona!

Gary Rosenberg is Secretary of the Arizona Bird Committee and co-author of the season bar graphs section of *Finding Birds in Southeast Arizona*.



Aztec Thrush, Carlos Palomera

FROGS & TOADS

of SOUTHEAST ARIZONA

Amphibians were among the first vertebrates to colonize terrestrial habitats. They emerged out of the Devonian period's lowland lakes and swamps about 370 million years ago. However, the first frogs and toads did not evolve until the early Triassic period about 240 million years ago. Today, 7,624 species of frogs and toads are known across the globe, but most are found in the tropics and many require surface water for reproduction. The New World tropics reach their northern limits in Sonora and some of that influence spills over into Arizona. But the biodiversity of southeastern Arizona is also enhanced by biotic influences from the Sonoran and Chihuahuan Deserts, short-grass prairies of the Great Plains, Mogollon Rim, and woodlands and forests of the Rocky Mountains and Sierra Madre Occidental and associated sky islands. Southeastern Arizona is relatively arid with a pronounced dry season from about April through June that limits the opportunities for amphibians; nevertheless, 21 frog and toad species occur in our corner of the state. Included are three spadefoots, six species of "true toads" (genera *Anaxyrus* and *Incilius*), four species of Treefrogs and Chorus Frogs, Sinaloan Narrow-mouthed Toad, Barking Frog, the introduced African Clawed Frog, and five species of true frogs (family Ranidae) including three species of leopard frogs, the Tarahumara Frog, and the introduced American Bullfrog.

All of these species except for the Barking Frog lay eggs in aquatic habitats. Eggs hatch into tadpoles that develop in water and metamorphose into small frogs or toads that live a terrestrial or semi-aquatic lifestyle. The Barking Frog is the lone member of the tropical family Craugastoridae in Arizona; frogs in this family practice direct development, which foregoes an aquatic larval stage. Female Barking Frogs lay eggs in moist rock crevices, the larvae develop inside the egg, and small frogs hatch from those eggs.

Frogs and toads in Arizona feed upon arthropods, mostly insects, but some larger individuals, such as large American Bullfrogs and Sonoran Desert Toads, can eat vertebrates, such as other frogs and toads, small snakes, lizards, rodents, and other small animals. Larvae are primarily herbivorous, but many will also feed on living or dead small animals.

Although only one of southeastern Arizona's frogs and toads (the Chiricahua Leopard Frog) is listed under the Endangered Species Act, in just the last two decades 168 species of amphibians around the globe are believed to have gone extinct and over 43% have populations that are declining. In southeastern Arizona, many frogs and toads are in decline due to habitat loss and degradation, disease (chytridiomycosis and ranavirus), introduced predators (particularly fishes, American Bullfrogs, and crayfishes), and climate change, which exacerbates wildfires and can lead to drying of wetlands.

In the following series of images, I have included species birders and other naturalists are most likely to encounter in southeastern Arizona (e.g. Couch's and Mexican spadefoots, Sonoran Desert Toad, Great Plains and Red-spotted toads, Canyon Treefrog, and American Bullfrog), but also species of special concern, like the Chiricahua Leopard Frog and Tarahumara Frog (the latter was extirpated from Arizona in 1983 but was reintroduced beginning in 2004), as well as species with interesting life histories. For further information, consult the following books: *A Field Guide to Amphibians and Reptiles in Arizona* (2022) and *Amphibians of the Sky Islands* (2023).

Jim Rorabaugh has worked in Arizona and Sonora as a herpetologist for the last few decades. He is also an avid bird watcher, nature nut, and conservation advocate.





COUCH'S SPADEFOOT
(< 3.5 inches): With the first heavy, summer rain, this spadefoot emerges from the ground where it spend the winter and moves to rain pools where it breeds. Common in the desert, its “waaaa” calls announce the beginning of the monsoon.



ARIZONA TREEFROG
(< 2.25 inches): Its southeastern Arizona distribution is limited to the Huachuca Mountains and Canelo Hills where it likely persists as a relict of wetter times. It is widespread along the Mogollon Rim and in the Sierra Madre Occidental.



MEXICAN SPADEFOOT
(< 2.5 inches): Also a summer rain pool breeder, this species occurs to higher elevations than Couch's Spadefoot and into northern Arizona. The call resembles someone running a fingernail over the tines of a comb.



MAZATLAN NARROW-MOUTHED TOAD
(< 1.5 inches): Arizona's only representative of the widespread, mostly tropical family Microhylidae, this little toad breeds in summer in the lower, western sky islands but also in desert arroyos.



SONORAN DESERT TOAD
(< 7.5 inches): Our largest toad, this species occurs across southern Arizona, but is more common in the southeast. All toads and many frogs have poisonous skin secretions, but this one is particularly toxic.



BARKING FROG
(< 3.75 inches): This enigmatic and hard-to-find frog is usually located by its loud “walk, walk” calls that originate from bouldery slopes in the sky islands from the Quinlan Mountains east to the Huachuca. It breeds in summer and often overwinters in caves.



RED-SPOTTED TOAD
(< 3 inches): This small toad breeds in spring and summer in canyons, tinajas, and other water sources in mountains and bajadas. Its call is a high-pitched trill lasting 2–12 seconds.



TARAHUMARA FROG
(< 4.5 inches): Historically in Arizona, this species was limited to a few rugged canyons in the south-central portion of the state. It persists as a reintroduced species in remote areas of the Santa Rita and Atascosa mountains.



GREAT PLAINS TOAD
(< 4.5 inches): Occurring throughout much of Arizona outside of the high mountains, it breeds spring and summer in permanent and ephemeral ponds. Its call is an almost deafeningly loud trill lasting 25–50 seconds.



CHIRICAHUA LEOPARD FROG
(< 5.4 inches): Listed as a threatened species, this frog has disappeared from most of its historical localities. It has benefited from a state and federal recovery program that has restored habitats and reintroduced the species to many wetland sites.



CANYON TREEFROG
(< 2.25 inches): This is the common treefrog of southeastern Arizona montane canyons. It is often seen atop boulders where it blends in well or in rock crevices. Its call is a series of loud, short trills that may sound like they're coming from inside a tin can.



AMERICAN BULLFROG
(< 8.5 inches): Introduced to Arizona from the central or eastern U.S., this adaptable frog is now found in most permanent or nearly permanent waters in southern and western Arizona. It preys upon and is a serious threat to a number of vulnerable frogs and gartersnakes and is a carrier of amphibian diseases.

SOUTHEAST ARIZONA BIRDING FESTIVAL



AUGUST 9-13, 2023

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PRESENTED BY



Violet-Crowned Hummingbird,
Mick Thompson

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Be sure to drop by the Nature Expo at the festival venue, the DoubleTree by Hilton Hotel at Reid Park. Our hours will be:

- Wednesday, August 9, 4–6pm
- Thursday, August 10, 12–5:30pm
- Friday, August 11, 12–5:30pm
- Saturday, August 12, 10am–5:30pm

The Nature Expo is free and open to everyone.

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April 2023 bird's eye view of the South32 Trench Mine, which operated more than 50 years ago on the current Hermosa Project site in Santa Cruz County. Credit: Patagonia Area Resource Alliance (PARA)

SOUTHERN ARIZONA IS ON THE CUSP OF A MINING BOOM—one that will forever change this special place we call home.

Arizona is already the top mineral-producing and second most mining-friendly U.S. state, according to the Fraser Institute. With sustainable-energy technology drastically increasing the demand for critical minerals—and with profits to be made—multi-billion-dollar companies are scrambling to mine copper, silver, zinc, lead, and manganese in our backyard.

Hard-rock mining produces more toxic waste than any other industry in America, and traditionally lax environmental regulations have been further weakened by a recent Supreme Court ruling gutting the Clean Water Act. The result: Arizona's water, wildlife, and vulnerable communities are at increasingly grave risk.

For those who seek a greener future and love birds, this “minerals rush” presents a conundrum: How can we support a rapid transition to sustainable energy without sacrificing what clean energy is supposed to protect? There are no easy answers. But the first tenet of responsible mining should be: some areas shouldn't be mined.

The Patagonia Mountains are one such place. This migration corridor, home to more than 100 federally endangered, threatened, and sensitive species, is one of the world's biodiversity hotspots most in need of protection. No mining method or degree of environmental oversight will sufficiently safeguard it.

Yet the federal government is heavily supporting mining here. South32's Hermosa Mine, the first mining project approved for the FAST-41 process (to streamline federal environmental review of high-priority transportation infrastructure projects), is in the heart of the Patagonia Mountains. And two exploratory-mining proposals (one from South32, one from Barksdale Resources) were recently granted full approval without environmental review or consideration of the cumulative impacts of the area's many proposed mines. Tucson Audubon recently joined a lawsuit to overturn these approvals.

As for the Hermosa project, its “dewatering” plan risks lowering the underground water table thousands of feet and releasing 6.5 million gallons of water a day into Harshaw Creek, a small seasonal waterway lined with ecologically vital riparian habitat. Harshaw Creek flows into Sonoita Creek, which itself flows past Tucson Audubon's internationally renowned

PACTS OF MINING BOOM

Paton Center for Hummingbirds. As Jonathan Horst, Tucson Audubon’s Director of Conservation & Research, comments, “The Hermosa Mine dewatering will create an ecological boom and bust along Harshaw and Sonoita Creeks, with dense riparian vegetation growing in response to the newly available water, followed by a severe crash when the dewatering ends, leaving the habitat in worse shape than today.”

While South32 claims the treated water will eventually find its way back into the aquifer, groundwater removed by mining can take thousands of years to replenish. It’s like putting a giant straw in the aquifer and sucking it dry — in a state already experiencing a water crisis!

That crisis is about to worsen, thanks to the Supreme Court’s 5-4 ruling in *Sackett v EPA*, stripping Clean Water Act protection from all water “without continuous surface connection to navigable waters,” which includes most of Arizona’s waterways and wetlands. Says David Robinson, Tucson Audubon’s Director of Conservation Advocacy, “Without new clean-water legislation from Congress, this pollution-over-people ruling spells catastrophe for biodiversity, the environment, climate change, and human health.”

Mining already disproportionately impacts Native American communities. A recent study in *Nature Sustainability* found that 54 percent of mining projects globally are on or near Indigenous people’s lands. And according to a 2021 study by MCSI, “97% of nickel, 89% of copper, 79% of lithium and 68% of cobalt reserves and resources in the U.S. are located within 35 miles of Native American reservations.” Health outcomes linked to mining include increased rates of cancer, respiratory illness, kidney disease, and miscarriage.

Here in Arizona, Indigenous communities are fighting several proposed mines. Best known is the Resolution Copper project at Oak Flat, in the Tonto National Forest east of Phoenix. Sacred to the San Carlos Apache and other Indigenous nations, Oak Flat has been the nexus of Apache

religious tradition since long before white settlers arrived. Resolution Copper would use “block-cave mining,” replacing the mountain with a two-mile-wide crater.

In southern Arizona, the Tohono O’odham, Yaqui, and Hopi tribes are opposing Hudbay Minerals’ proposed Copper World (formerly Rosemont) Mine in the Santa Rita Mountains, east of I-19 in Green Valley. Hudbay plans to decapitate more than one mile of scenic mountain ridgeline, creating four open pits and building roads and waste dumps on the mountains’ east and west sides. Like Hermosa, Copper World benefits from a regulatory loophole removing most environmental oversight on private lands.

Meanwhile, Arizona Senator Kyrsten Sinema has co-sponsored a bill, the Mining Regulatory Clarity Act, allowing mining companies to operate on land without having valid mineral claims, and preventing the BLM from regulating where mining pipelines and roads would go.

In contrast, Arizona Congressman Raul Grijalva and New Mexico Senator Martin Heinrich have introduced the Clean Energy Minerals Reform Act to modernize the 150-year-old law still governing U.S. mining: the 1872 Mining Act. Says Grijalva, “Securing the minerals we need for our clean energy future cannot come at the cost of our environment, our health and safety, or tribal sovereignty. For more than a century and a half, the mining industry has operated under an outdated, free-for-all claims system that gives them carte blanche to pollute and destroy, while American taxpayers get stuck with the cleanup bill.” The act would bring requirements for hard-rock mining in line with those for oil, gas, and coal on public lands.

To avert the worst impacts of climate change, the world urgently needs a swift transition to renewable energy. But while making that transition, we must protect human health, especially of communities long subjected to environmental injustice, and fight for birds, other wildlife, and the habitats they depend on.



The Hepatic Tanager is a Southeast Arizona specialty bird that will be affected by mining in the Patagonia Mountains, Hemant Kishan

Laurie Cantillo is a Tucson-based writer, nature lover, and volunteer at the Paton Center for Hummingbirds.



SOME WAYS YOU CAN HELP

Urge your representatives in Washington to support the Clean Energy Minerals Reform Act and oppose the Mining Regulatory Clarity Act.

Sign up for Tucson Audubon Action Alerts at: TUCSONAUDUBON.ORG/E-NEWS.

Join Tucson Audubon’s nonpartisan Birding & Canvassing events (TUCSONAUDUBON.ORG/COMMUNITY-EVENTS) to ensure that environmentalists get to the polls and vote in every election!

Here, There, Water Everywhere... Sort of

Monsoon season is just around the corner, hopefully. We're never sure these days, though Patagonia and further to the southeast usually gets a bit more rain, starting earlier in July, than does Tucson. At the Paton Center, some water is reliable, regardless of the circumstances. Behind the viewing pavilion the small water feature brings birds in for a close-up look. Just around the corner, removed from the occasional "crowds" of the backyard, the quiet stream and pond in the Grand Meadow provide a respite to inhabitants and visitors alike. The endangered Huachuca water-umbel and Arizona eryngo are thriving there. Senior field crew member Dan Lehman has removed over 1500 bullfrog tadpoles from the pond this spring and found numerous egg masses for tiger salamanders. We're still trying to fully identify whether they're the endangered local subspecies or just escaped bait from the lake downstream.

Tucked neatly into a heavily shaded area of the newest portion of the Paton Center lies a secret small depression, a constantly damp seep that even had standing water thanks to the wet winter. This area already has nutsedges and a variety of other uncommon plants that need very damp soils. This rare set of conditions converges with those needed by many of the favorite plants of Montezuma Quail: oxalis, nutsedge, and other plants

with fleshy tubers, all surrounded by insects attracted to the humidity. Restoration project manager Aya Pickett is leading the effort to turn this, and other nearby sites, into prime quail foraging habitat.

Unknown changes to Sonoita Creek itself are also at hand. The Hermosa Mine project in the Patagonia Mountains promises to tap into large deposits of manganese and zinc ore needed for batteries and has become the first mine project added to the FAST-41 process (learn more on page 22). To keep this deep pit dry enough to mine, water will be pumped out, treated, discharged into Harshaw Creek, and will then flow down to the Sonoita Creek and past the Paton Center. What this will mean, long-term, is still being debated. Whether the creek will flow perennially through town during the decades the mine operates remains questionable with models showing both outcomes.

If the adage for the West holds true that "whiskey is for drinking and water is for fighting," some contentious times are still to come for Patagonia on multiple fronts.



The pond in the Grand Meadow provides a space for quiet contemplation, Dan Lehman; Sign photo by Louie Dombroski

ACCESS NOTE:

If you have visited the Paton Center recently, you may have seen these signs on either side of the Sonoita Creek crossing. One of the new neighbors has closed off emergency flood access through their private land to the Paton side of the creek. Please make sure that you and your vehicle are on the town side of the creek at the first sign of flow in the creek during monsoon season. Flows can increase quickly and there will be absolutely NO escape route available, potentially for days, if you are caught on the wrong side of the creek.



TUCSON AUDUBON'S
PATON CENTER
for HUMMINGBIRDS

Jonathan Horst
Director of Conservation & Research
jhorst@tucsonaudubon.org



THE MONSOON IS HUMMINGBIRD SEASON!

Want to see Southeast Arizona's renowned variety of hummingbirds when numbers are at their peak? Surprising as it may seem, nothing beats the summer monsoon season for viewing sheer numbers of hummingbirds!

Several factors contribute to the windfall of hummingbirds. First, the monsoons bring forth a wildflower bonanza that extends from the desert lowlands all the way up to the meadows of the sky island mountain ranges. Added to this nectar smorgasbord is an increased supply of tiny flying insects which make up a significant percentage of all hummingbirds' diets, providing necessary protein. When you see a hummingbird zig-zagging erratically in the sky in short bursts, it is capturing insects, usually ones so tiny they can't be made out with our eyes.

In addition to the hummingbirds that have spent the summer in Southeast Arizona, there are plenty that were raised here during the late spring and early summer, augmented by fledglings from second broods hatched during the monsoon season itself.

The migration of hummingbirds that nested or were hatched in the north also begins in earnest in late July, aiding those hummers that head south early to take advantage of the monsoon season bounty Southeast Arizona provides. Rufous Hummingbirds from the Pacific northwest are regular at this time of year, but it is also the best time to see a Calliope Hummingbird from the northern Rockies or even an Allen's Hummingbird from coastal California or Oregon. Numbers of Black-chinned and Broad-tailed Hummingbirds swell as those that nested to the north join those that summered here.

The presence of so many juvenile hummingbirds during this time of year poses some identification challenges. For example, even adult male Allen's Hummingbirds are difficult to distinguish from the closely related Rufous Hummingbird without good looks (or photos) of the spread tail,

but females and immatures are close to impossible to separate under most field conditions. Then there are those immature male Broad-billed Hummingbirds which resemble females but have variable amounts of blue on the underparts, sometimes possessing a blue throat patch that can cause confusion with the much larger Blue-throated Mountain-gem.

Finally, this is one time of year when the hummingbird ranks are likely to be spiced up by a rare wanderer from Mexico such as the Plain-capped Starthroat. The first Cinnamon Hummingbird seen north of its normal range in Mexico and Central America (and one of only two United States records to date) was a monsoon season visitor, gracing the Paton Center for a few days in late July 1992.

When storm clouds threaten, hummingbird activity reaches a fever pitch, with normally aggressive individuals (not all of them Rufous Hummingbirds by the way!) sometimes sharing feeders with the rest, as all tank up on sugar water fuel in anticipation of a possibly long stretch of rain during which none will be able to feed. The temperamental monsoon storms often begin with a deluge that sends the hummers diving for the cover of concealed sites deep in the foliage. Sometimes, though, the rain begins more softly. On one such occasion last August, a group of birders at the Paton Center were left spellbound at the sight of more than a half dozen hummingbirds, mostly Broad-billed but also two Violet-crowned, festooned in an elderberry tree, all fluffing up and flapping joyfully on their perches, shaking off water as they bathed in the gentle rain.



Louie Dombroski
Paton Center Birder-In-Residence





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PARTICIPANTS

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It was another successful and fun Tucson Audubon Birdathon! Kudos to all involved—the dedication and creativity of every participant is truly inspiring. Thanks to the birders, their supporters, our sponsors, and most of all, the birds! We are grateful to you for making this another amazing Birdathon.

CATEGORY WINNERS

Grand Champions | Team Birdini (Peggy Steffens, Andrea Serrano, Marie Davis)

Big Day: Traditional | Wrenegades (Sara Pike, Tim Helentjaris, Chris Rohrer, Jennie MacFarland, Matt Griffiths)

Big Day: Freestyle | Kinda Hawkward (Nancy Bent, Sherry Massie, Taylor Rubin, Janel Miller, Roswitha Tausiani, Bea Mendivil)

Brand New to Birdathon | The Hash-Slinging Curve-billed Thrashers (Audrey, Drake, and Colleen Ridge and Scott Murray)

Creative "Home" Patch | Roadrunner Randy (Paula Palotay)

Best Bucks for Birds | SaddleBrooke Ranch Cuckoos (Jim Hoagland, Jim Bradford, Laurie McCoy, Deb Sandin, Kathy Williams, Karen Vanderwall, Carrie Gelsey, Nancy & Ben Eisenstein, Sheree & Rick Gillaspie)

Social Media Storytellers | Birdies, Bogeys and Eagles (Dan Weisz, Deb Vath, Jenise Porter, Deanna MacPhail, Danny Gin, Michele & Reuben Weisz)

Birdathon Beyond AZ | Forts & Port (Laura Davis)

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TOP: Costa's Hummingbird, Shawn Cooper
LEFT: Invasive Plants Shrike Team
RIGHT: Kinda Hawkward

BIRDS OF A FEATHER: Birding and Friendship in the Tucson Audubon Volunteer Community

Volunteering is about lots of things: contributing to conservation, sharing knowledge, making an impact on birds and people alike... I could go on and on. But it's also about making personal connections with others within the volunteer community—the friendship of Peggy Steffens, Marie Davis, and Andrea Serrano is a perfect example. Each of these women have contributed immensely as volunteers, but I want to highlight their personal story because it's these small stories about friendship that really celebrate a community.

Like many of us, both Peggy and Andrea started birding during COVID. They began separately, first with Tucson Audubon Zoom classes and then with field trips. It was on these field trips that they started seeing some of the same people repeatedly, including each other and fellow birder, Marie. Meanwhile, Peggy and Andrea started chatting about one of the controlled burns at Sweetwater Wetlands and decided to check it out together and Peggy invited Marie along. Peggy says, "It was the first time we birded together, and we learned that we have very similar birding styles." Marie adds, "there's something special when you immediately 'click' with someone else." As Andrea sagely notes, "the basis for a strong friendship or community is a shared passion. Luckily, our shared passion is time together in nature."

Peggy, Marie, and Andrea started birding and volunteering together more often and they all noted that it made them stronger birders in addition to cementing their friendship. Peggy loves that they can "talk out loud the bird identification process" which can be a helpful way to learn. She also

praised Marie's skills at birding by ear and added that she has developed a better birding ear through birding with Marie. Peggy adds that they also "do bird surveys together, hang the hummingbird feeders for the Southeast Arizona Birding Festival, work at the Tucson Festival of Books booth and try to sign-up for similar events and field trips." For the 2022 Birdathon, they created the team name Birdinis, and it stuck beyond Birdathon, as did their mentality as a team. I'm sure it was this friendship and team mentality that led them to win the Grand Champion prize for the 2023 Birdathon! In a full circle moment, all three women are now volunteer Field Trip Leaders with Tucson Audubon.

Their friendship now goes beyond being birding buddies. Peggy says, "We have become great friends because of birding. The drives and time in the field have helped us bond and know about each other's families and lives." Marie adds, "before the Birdinis, I'd have said that I didn't feel super plugged in to the birding community. Being a semi-introvert, the Birdinis really drew me out of my shell. Having close friends affects my birding experience because now I try to make conversations and connections with other birders on field trips. Andrea and Peggy have given me confidence to be myself. And that's quite a gift!"

Thanks so much to Andrea, Peggy, and Marie for letting me tell their story and for reminding us all about the personal connections that blossom through birds. A quote from Andrea wraps up this story so well: "I love seeing a new bird, but the memories I cherish are the adventures I've taken with my friends along the way." Cheers to Team Birdini!



Taylor Rubin
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We'd love to welcome more people to the Tucson Audubon volunteer team!
[TUCSONAUDUBON.ORG/VOLUNTEER](https://tucsonaudubon.org/volunteer)



From left to right: Andrea Serrano, Marie Davis, and Peggy Steffens

IT TAKES A COMMUNITY

Youth education is a crucial part of human development, playing a major role in the growth and success of an individual, and ultimately, the community in which they live. In any given community we have varied types of educators: formal teachers and those who take on the role of guides, community mobilizers, and mentors. Here are a few of the many faces that have brought immeasurable value to the learning spaces in Tucson and have partnered with Tucson Audubon to broaden our reach and share the joy of birding in the community.

DRU BERRYHILL

COMMUNITY MOBILIZER
DRUTOPIA BOTANICAL GARDEN



If you've been to the Dunbar/Spring Neighborhood you might have stumbled upon Dru's space, a corner lot full of life. You can hear some of your favorite birds enjoying this urban oasis Dru has created, along with the joyful laughter of kids at the playground next door. You can find Dru watering plants and talking to the kids that will drop by, "Just to talk." Dru stands by the belief that a strong community is made

by fostering diverse, dynamic and intentional collaborations with its members. He prides himself in providing community members a space where they can gather, collaborate and heal.

CARMEN SMITH-ESTRADA

GARDEN TEACHER
DAVIS BILINGUAL ELEMENTARY MAGNET SCHOOL



Carmen became one of the first collaborators to reach out to our Education Department requesting full Spanish lessons. We were excited to use our resources for a classroom full of kids either fluent in Spanish or learning it as a second language. We love that Carmen has inspired students by framing success as the critical

engagement with the world around them instead of just memorizing content. "I see success when the kids ask thoughtful questions and pose problems in garden class: What should we do about people from the district spraying Roundup chemicals all over the school grounds? What are the chickens trying to tell us when they make that sound?"

KAITLYN MILLER-VARGAS

MUSICIAN, COMPOSER, MUSIC TEACHER
MOUNTAIN VIEW HIGH SCHOOL



Kaitlyn knew she wanted to be a teacher at a young age, and started giving her first violin lessons when she was still in high school. Kaitlyn talks about her students and their wins with pride. Her joy doesn't only come from students getting good grades but more importantly from the connections she makes with them

and the connections they make with their peers. Kaitlyn's approach to student-centered teaching promotes the importance of curiosity and exploration of spaces where students feel they can thrive. She knows that empowering students will ultimately strengthen our communities and environment.

MEGHAN HUGHES

INSTRUCTIONAL DATA INTERVENTIONIST,
PALO VERDE



Megan had been teaching in Arizona Schools for over 27 years, and as she was approaching retirement, she had the opportunity to work at Palo Verde to help students reach their potential. We love collaborating with Meghan, as her excitement and passion for helping students brought Tucson Audubon in to assist with the restoration efforts of the school's courtyard.

As we begin planning for the new school year, we will draw inspiration from the Tucson community and come together to help our youth learn and thrive.

Bea Mendivil
Education Coordinator
bmendivil@tucsonaudubon.org





Welcome New Community Engagement Manager Donito Burgess!

Born and raised in Texas, Donito has extensive birding experience along the Texas Gulf Coast and the Hill Country areas around Austin and San Antonio. After several years of traveling to, and falling in love with, the Sonoran Desert, Donito relocated to Tucson to attend the University of Arizona and pursue a degree in Environmental Science. While attending classes, he volunteered extensively through Tucson Audubon, and was a natural fit to join the team. Whether it's strolling around an urban park or bushwhacking through a remote canyon, he always finds a way to enjoy the birds and the unique environment of Southeast Arizona. As the Community Engagement Manager, Donito enjoys birding with birders of all skill levels and sharing his love of his new desert home.

Get to know Donito on a field trip! He'll be a regular leader at the Sweetwater Wetlands walk every week, among others. He hopes to meet you on a field trip soon!

Upcoming Photography Virtual Presentations with Hunt's Photo

Tuesday, September 5, 11am–12pm, Virtual
FINDING & PHOTOGRAPHING AMERICA'S 19 OWL SPECIES
with Izzy Edwards

Izzy is a 19-year-old wildlife photographer and conservationist based in Washington State. She has devoted the past four years to photographing and understanding all 19 of America's owl species. Join her as she recounts her journey and passion for owls and discover how to observe these elusive birds in local habitats.

Thursday, November 9, 11am–12pm, Virtual
2022: MY BIGGEST YEAR YET with Patrick Maurice

Patrick, a birder and nature photographer from Atlanta, Georgia, has been birding for as long as he can remember and carrying a camera with him for over a decade. While he is primarily a bird photographer, he also enjoys photographing other wildlife and landscapes. Join us as he talks about his travels and the birds he saw in the United States, Ecuador, and Mexico in 2022.



Great Horned Owls, Izzy Edwards



Red Warbler, Patrick Maurice

Visit Tucson Audubon at these upcoming partner events

- SEDONA HUMMINGBIRD FESTIVAL, July 28–30
- CRITTER NIGHT at the Mission Garden, August 18
- FAMILY SATURDAYS with Watershed Management Group, September 16

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BIRDING THROUGH EXPERT EYES: Get Tucson Audubon tips for spotting local favorites.

Thursday, July 27, 10:00 a.m. • Register at SplendidoTucson.com/events or call us!

TUCSON AUDUBON WISH LIST

Every donation you make to Tucson Audubon gets put to great use, expanding our mission of inspiring people to enjoy and protect birds. When you contribute to our general fund, you help us secure a long and productive future for the work we do. If you'd like to help us reach some specific funding goals, here is our current "Wish List":

\$3000 – A GPS TRANSMITTER TAG DEPLOYED ON DESERT MARTINS

\$2000 – LAPTOP AND OTHER TECHNOLOGY SETUP FOR A NEW TUCSON AUDUBON EMPLOYEE

\$750 – SPONSOR A SAGUARO-CAVITY EXPERIMENTAL NESTBOX ARRAY

\$500 – SPONSOR A "BIRDING WITH A PURPOSE" FIELD TRIP

\$250 – SPONSOR A SAGUARO HOTEL FOR A YEAR

If you'd like to provide funding for one of these specific projects, please note it in the comments section of your online donation, or on the memo line of your check. You may also contact Ethan Myerson (emyerson@tucsonaudubon.org) to talk about funding specific projects such as these. If the project you specify has become completely funded, we will apply your donation to the next closest area that needs funding. Thank you!



Tagging Desert Purple Martins, Jennie MacFarland; Desert Purple Martin, Scott Olmstead; Birding field trip, Karen Howe

THANK YOU, LINDA

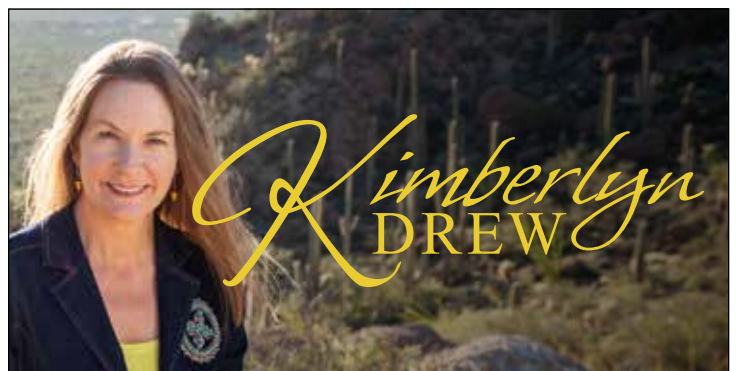


Tucson Audubon's Board of Directors is a group of volunteer leaders tasked with providing guidance and governance to the organization. Most recently, our board was helmed by chairperson Linda McNulty.

During her tenure as Board President, at a time of growth and change, she championed protection of Reid Park and led work to preserve

and enhance the Paton Center, to recruit executive leadership, and to embark on strategic planning to ensure continuation of Tucson Audubon's soon-to-be 75-year legacy of inspiring people to enjoy and protect birds.

We are grateful for the leadership and service Linda provided during her tenure, and wish her well in all her future endeavors. The Board of Directors will choose their next president this summer.



17-year Tucson Realtor
20+ year Tucson Audubon Member, Supporter & Volunteer
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KimberlynDrew.com
520.237.1408



WOO HOOT!

BIRDY NEWS BITES WORTH CELEBRATING

CONGRATULATIONS TO THE WINNERS OF THE PURPLE MARTIN NESTBOX DESIGN CHALLENGE!

Thank you to all the brilliant minds and creative geniuses who participated in our Nestbox Design Challenge.

Our judges had a tough time selecting the winner but it ultimately came down to temperature-buffering abilities.

FIRST PLACE IN ADULT CATEGORY: Greg Corman

RUNNERS UP: Lyle Hale, George Kleindienst, Russ Hefty, John Hoffman, Harlon Meryhew

FIRST PLACE IN YOUTH CATEGORY: Sophie Nguyen

RUNNERS UP: Brandon Russell, Devan Kramer

We will be replicating the top three designs and will find out this summer if the martins prefer one over the others.

Learn more at: TUCSONAUDUBON.ORG/PURPLEMARTIN

The Desert Purple Martin project partners include Purple Martin Conservation Association, Northern Arizona University, University of Arizona, and Instituto Butantan (Brazil). Our work is made possible by the Wildlife Conservation Society's Climate Adaptation Fund, the Disney Conservation Fund, private donations, Purple Martin Conservation Association, Arizona Game & Fish, North American Bluebird Society, and New York State Bluebird Society.



Nestbox Design Challenge winner Greg Corman

GIFTS IN HONOR OR MEMORY OF

In memory of Adele Benter from Karen Zadkovic

To Bill Foster from Diane Schramm

In honor of Cassin Jaquette from Lissie Jaquette & Dan Perelstein Jaquette

In memory of Chris McCooey from Beryl & Donald Zerwer, Cynthia Dowd, Dale Bugasch, Douglas Browne, Elizabeth Giles, Kathleen Sayles, Louise Hedstrom, Pamela McKenna, Sandy Bland, Sheila & Matthew Dowd, Sue & JP Nelson, and William Reichwald

In honor of Chris Rohrer from Julee Dawson

In honor of Dan Weisz from Bonnie Sedlmayr-Emerson and Jill Bland

In honor of Deb Sandin from Sandy Jessop

In memory of Genevieve Hawxwell from Stephen Lubin

In memory of Hazel & Herb Judd from Cheri McConnell & Mike Judd

In memory of Jim Fisk from Alisa Master

In honor of Karen Vanderwall from Rita Lepaska

In honor of Kathy Jacobs from Christina Bickelmann and Regina Murphy-Darling

In honor of Laura Davis from Janice Crist

In honor of Laurie McCoy from Teresa Culkins

In honor of Laurie McCoy & Kathleen Williams from Marcia Jacobson

In honor of Luke Safford from Linda Phelan & Mort Womack and Matthew Derr

In memory of Martha Pille from Lynn Hassler

In memory of Mary Caldwell from Jane & Don Powers and Linda Phelan & Mort Womack

In memory of Mary Lou Cole from Ann Powley, Jacquie Clark, Mary Jo Coleman, and Kevin Cole

In honor of Matt Griffiths from Jan & Vic Schachter and Keith Ashley

In memory of Michael Mardis from Eric Olson

In memory of Miriam Abell from Shelly Abell & Dan Weisz

In memory of Nancy Zook from Ellen Zook Osborn

In memory of Patricia Griffiths from Denise Griffiths

In honor of Prudy & Bob Bowers from Janet Fink

In memory of Rico Guerrero from Epifanio Guerrero

In memory of Roslyn Schiffman from Sandy Schiffman

In memory of Rowyn Balman from Matt Griffiths, Lia & Jerry Lavalley, and Nallely Corral

In memory of Ruth & Walt Hileman from Karen & Gilbert Matsushino

In honor of Sherri Stolte from Laurie McCoy & Thomas Campbell

In honor of Sorel Johnson from Mai Schaefer

In memory of Terrie Merritt from Evelyn Thomas

In honor of Terry Decarolis from Barbara Lowe

In honor of the Milner & Swanson wedding from Philip Paige

In memory of Walter Frederick from Holly Geiger



Western Grebe, David Kreidler



Ask anyone from southern Arizona what their favorite season is, and you're likely to hear the same answer over and over. With the refreshing rains and the reprieve from the heat, our monsoons are beloved by longtime residents and newcomers alike.

And for good reason: The monsoon rains replenish our water resources and rejuvenate our plant life. Local waterways, dry for much of the year, finally swell and flow. The rains bring insects and berries, leading to healthy reptile and bird populations.

But just as significantly, *the rain just feels good*. The air gets heavy, the skies darken, the heady smell of creosote is everywhere. When the monsoons arrive, there's a burst of activity, flashes of lightning, and the ground is suddenly soaked. It's mesmerizing to watch; I'll admit, there have been summer days when my colleagues and I would stop working just to stare out the windows at the torrential rainfall drenching the Mason Center.

Arizona gets about half of its annual rainfall in roughly eight summer weeks. A good season of monsoon rain can mean the difference between a lush, green Sonoran desert habitat, and dry brush covering our mountain slopes and arroyos. Several times in recent memory, those dry slopes and washes have led to devastating wildfires.

Tucson Audubon can't do much to impact the amount of rainfall we get during the monsoon months, but with your help we can mitigate the effects of a dry season. When you support Tucson Audubon with a philanthropic gift, you give us what we need in order to fight back against invasive plants like stinknet that become the fuel in those wildfires. Because of your donations, we are working to replant thousands of saguaros that were lost to wildfire over the past few years. To Tucson Audubon, your support is like the monsoon rain—it replenishes, it rejuvenates, and it restores.

When you see our Monsoon Magic letter in your mailbox in the coming weeks (or visit TUCSONAUDUBON.ORG/MONSOON), please think about how the monsoons make you feel, and remember that your support brings us that very same feeling. *Thank you.*

Ethan Myerson
 Director of Development & Communications
 emyerson@tucsonaudubon.org



The *Vermilion Flycatcher* is the newsletter of the Tucson Audubon Society, a chapter of the National Audubon Society. National Audubon Society members and members of other chapters may receive the *Flycatcher* by becoming a member of Tucson Audubon. For more information visit: TUCSONAUDUBON.ORG.



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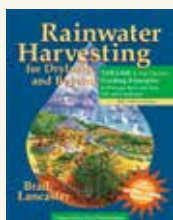
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Please note summer shop hours: Wednesday–Friday, 10am–4pm and Saturday, 10am–2pm.
Always available online at tucsonnatureshop.com



Rainwater Harvesting for Drylands and Beyond

\$40.00

Learning to live in harmony with the desert can take some time! In Vol 1, Lancaster outlines how to conceptualize and implement rainwater harvesting for your home and community. Includes success stories from those who've welcomed rainwater in their lives and landscapes.



Beat It! Insect Repellent

Starting at \$12.00

The monsoon season can bring out some pretty annoying bugs! This new line available at the shop should be all you need to protect yourself when exploring the great outdoors. Repel all biting bugs at home or on your travels. Made with essential oils, DEET-Free.



Zeiss SFL 8x30

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The new Zeiss SFL makes a great companion on your next outing. Lightweight, ergonomic construction makes it easy to carry and focus quickly. With powerful optics that shine in those very early mornings or cloudy days, the SFL makes a great tool for the summer birder!



Kowa BDII XD 8x42

Member Price \$450

Either in brightest days, or in challenging light, the BDII XD from Kowa is a top-contender in mid-range binoculars. Easy to grip and maneuver, an extra wide field of view, and a very crisp image make these tools for birding a top pick!



Sunday Afternoons Cruiser Hat

\$36.00

Sun protection is a must if you're exploring the great outdoors. The Cruiser Hat offers UP50+ protection and ventilation on those scorching days up ahead. It's probably better to have it and not need it, than need it and not have it! Available in multiple colors.



Verdin/Baloncito Tee

\$30.00

The verdin, or baloncito en espanol, is featured perched on a cactus and printed on a soft tri-blend. Makes for a comfortable shirt to go observe nature or run errands. Hand designed by our favorite local artist, this tee will make a great addition to your checklist!