



# the Cactus Wren-dition



VOLUME LXXIV NO. 4

WINTER – 2021



Gilded Flickers Nesting in a Saguaro  
by Cindy Marple

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Gilded Flickers Nesting in a Saguaro  
by Cindy Marple Taken at Reach 11.  
Canon EOS 20D, 700 mm, f/13,  
1/640 sec., ISO 400

# PRESIDENT'S MESSAGE



**Mark W. Larson**

The chapter met in person in November for the first time since March 2020. For now, we will be holding hybrid meetings- both in-person and via zoom.

Despite the pandemic, we are still active in environmental conservation. As of this writing, we are about to challenge the U.S. BLM in court over their inaction in two critically important riparian areas of the state. Desert riparian systems function as fountains of life- wonderfully diverse and abundant. But when mismanaged, there is a cascade of biological losses. Unfortunately, most of the once rich and widespread riparian habitat in Arizona has already been lost over the past 170 years from overgrazing, groundwater pumping, and dam construction. However, there are some bright spots. The City of Phoenix's effort to rebuild riparian habitat along the Rio Salado near downtown Phoenix is beginning to show returns on these investments. Hopefully, other municipalities and Tribal governments will also begin to restore their own riparian habitat.

I should also mention four bird counts that could use your help. Beginning December 14 with the **Salt-Verde Christmas Bird Count** which your society has long sponsored, there will be a slate of CBCs across the state concluding January 5. CBC's are conducted in every state, parts of Canada and Latin America as well. If you have never taken part in a CBC, I urge you to do so. You don't need to be an expert or even an experienced birder. You could be the only person who spots a distant raptor that turns out to be the only one of its species seen on that count! Please see page 16 for the schedule.

On January 15, AGFD sponsors the **Phoenix Area Waterbird Survey**. You can imagine that in centuries past, outside the Salt, Verde and Gila Rivers, there was very little habitat for migrating ducks, geese, grebes, herons, egrets, and other water-dependent species in the desert. But now there are hundreds of ponds, small lakes, and large reservoirs that host many thousands of these birds each winter. There is always a need for birders to census these wintering waterbirds. It's a chance to learn where to see some exciting birds that nest in the summer far to the north. The **Santa Cruz Raptor Count** is also January 15 and the **Great Backyard Bird Count**, sponsored by Audubon, Cornell and Birds Canada, is February 18-21. Please see page 15 for information on how to volunteer for these worthwhile activities. 🐦

*Mark W. Larson, President*

## **Myron Scott** by David Chorlton

On a sad note, I remember Myron Scott, who led field trips for Maricopa Audubon Society and who died on September 2nd of this year. Only a month beforehand, and shortly after Myron lost his wife, Barbara, I invited him to watch a DVD and remember a concert we had attended in person a decade or more ago in Phoenix. I first met Myron some forty years ago, and that was through his environmental activism, something that continued throughout his life. Most recently he was among the many who work to save Oak Flat. That balance of loving nature and being prepared to work on its behalf distinguished Myron and sets a fine example for all of us.

# LETTERS FROM THE EDITORS

## Letter from the Retiring Editor

In the recent film *Nomadland*, saguaro cacti feature in several scenes and leave us in no doubt which state the assorted RVs and mobile homes are parked in. Whether by the familiar contour standing against the desert sky or a close up with the textures of the trunk and thorns, the saguaros leave their mark early in the film's narrative. It is a story of people challenged to use their innate strength, survivors in many cases, and the saguaro is an altogether apt representative of that quality. Many westerns have proclaimed their location by showing saguaros, without which Arizona would be unthinkable. What the movie industry doesn't usually show is the range of life that depends on saguaros, which makes up much of this issue of the Wren\*dition. Thanks to Jim Burns and Tom Gatz for their contributions, and to Laurie Nessel and Cindy Marple for photographs.

As the cooler months begin, we should all be able to get out more and enjoy the landscapes around us. I hope you are able to find interesting birds and perhaps participate in a Christmas Bird Count. Whatever the temperatures, I have decided to claim more time for myself and so I'm saying goodbye as editor. This has been an honor for me, and I appreciate the writers and photographers who have contributed to the Wren\*dition in such fine style. Thank you. 🐦

*David Chorlton, Retiring Editor*

## Letter from the Acting Editor

In June of 1954, the first MAS newsletter, then called the Roadrunner, was published. Of note were the sightings of 4 starlings in Tempe and 1 Black-necked Stilt at Palo Verde. There was a pledge to "save and faithfully defend from waste the natural resources of our country, its soil and minerals, its forests, waters, and wildlife." I am humbled to receive the imprimatur from the board as acting editor to continue to provide an informative and inspiring publication with the help of our talented contributors. We thank David Chorlton for his adept editing over the last two years, his creative insights on chapter activities and his volunteering on projects such as a collaboration with Changing Hands Bookstore. Lastly, if this issue finds its way to your mailbox later than usual, we can blame it on the supply chain paper shortage. Here's to brighter times ahead. 🐦

*Laurie Nessel, Acting Editor*

## Watching Leonard Cohen with Myron

We talk through *Dance Me to the End of Love* about the old ideals and I remember the Arizona Woodpecker we saw together in Madera Canyon before *Everybody Knows* takes us back to politics and deals like the one that sold out Oak Flat where he led a walk one morning when an ice wind swept the air clean although we saw little more than species as familiar as *Hallelujah* has become, but *In my Secret Life* speaks better for the evening's mood. The pizza is finished by *Closing Time* with Oak Flat in the balance where towhees still hold their ground, inseparably paired.

*David Chorlton*

## COMMITTEES/SUPPORT

**Arizona Audubon Council Rep**  
Position Open

**Bookstore**  
Sochetra Ly  
503 860-0370

**Poet Laureate**  
David Chorlton  
480 705-3227

**Maricopa Audubon Website**  
[www.maricopaaudubon.org](http://www.maricopaaudubon.org)  
Be sure to check it. You never know what you'll find!

*"I choose joy over despair. Not because I have my head in the sand, but because joy is what the earth gives me daily and I must return the gift."*

*Robin Wall Kimmerer*

## 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.

### 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. No membership required. It includes meeting and field trip reminders, special events, and citizen science projects.

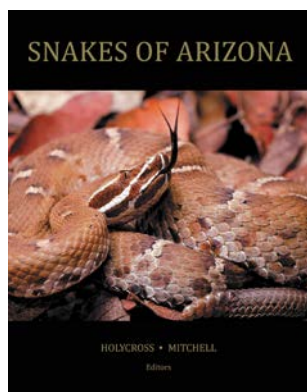
To subscribe, email: [laurienessel@gmail.com](mailto:laurienessel@gmail.com)

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

# MEETINGS. . .

We are conducting hybrid meetings, both in-person and via zoom. Zoom codes are posted on our website close to the meeting. In person, please follow the latest CDC guidelines regarding the wearing of masks and booster vaccinations.

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, ½ mile south of Thomas. If northbound, turn left (west) at Oak Street, ½ 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” sign. Meeting starts at 7:30, come at 7:00 to socialize. Pre-meeting dinners (September through April) are held at 6:00 pm at Saigon Bowl Restaurant, 8213 E. Roosevelt St Scottsdale AZ 85257, at the southeast corner of Roosevelt and Hayden Roads in the north side of Scottsdale East Plaza. The May meeting is our annual banquet. Please check the Spring Wren-dition or our website for details.



## ANDREW T. HOLYCROSS *Snakes of Arizona* DECEMBER 7

A fascination with snakes drove the creation of the tome *Snakes of Arizona*, the definitive reference that celebrates every species found in Arizona. For tyro to expert, this book examines all aspects of Arizona's snakes biology supported by a complete review of the scientific literature plus a trove of previously unpublished data and observations. 59 peer-reviewed species accounts by leading authorities comprise the heart of this opus. Each account discusses taxonomy, distribution, abundance, habitat, diet and foraging biology, predators, parasites, behavior, and reproduction. It includes over 390 figures, dot distribution maps, and photographs, chapters on the biotic communities, conservation, over 3k literature citations in 860 pages. Illustrations by Randy Babb.

Andrew Holycross earned his Masters at University of Nebraska -Omaha studying Prairie Rattlesnakes in the Nebraska Sand Hills. He earned a Ph.D. in Zoology from ASU studying the conservation genetics and natural history of two endangered species of rattlesnakes in the Southwest. In 2004

he joined the faculty at Mesa Community College and has been teaching biology there ever since. He is an adjunct curator for herpetology in the BioCollections at ASU. He has contributed dozens of scholarly articles to the scientific literature, co-authored the 1st and 2nd editions of *A Field Guide to the Amphibians and Reptiles in Arizona*, and co-edited *Snakes of Arizona*, the topic at this meeting. His passions include outdoor activities. He is 1 of only 3 people who have hiked the entire length of Grand Canyon on both sides of the Colorado River. He started the Adventure Association at MCC to instill confidence and leadership skills in future leaders. He helped build the Red Mountain Campus true to its Environmental Sustainability and Environmental Education missions.

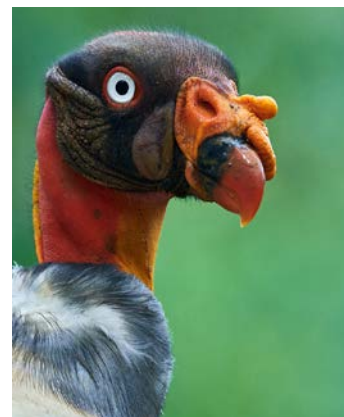


## DR. ANDREW LENARTZ *South Mountain Park and Preserve* JANUARY 4

In the new book *South Mountain Park and Preserve: A Guide to the Trails, Plants, and Animals in Phoenix's Most Popular City Park*, local college educator and park volunteer Andrew Lenartz covers the history, hiking trails, and recreational opportunities of the 4th largest municipal park in the US.

Lenartz will share information on this unique local treasure including the geology, natural history, and his favorite places to visit.

Dr. Andrew Lenartz is a Psychology Professor at Gateway Community College in Phoenix. He is a volunteer Park Steward and a near-daily user at South Mountain Park. When not visiting the park, he is generally talking, writing, or dreaming about it.



## CINDY MARPLE *Neotropical Birding* FEBRUARY 1

The tropical regions of the planet are known for their biodiversity; the New World tropics have the most diversity of birds of any region. From the familiar to the unique, we'll explore bird families and species of the various habitats found in the Neotropics. Spoiler alert- it isn't all rainforest!

Cindy Marple is a Nature Photographer whose favorite subject is birds. Her interest in birds and birding has grown as she spends time observing and learning more about her subjects. She now teaches Birding skills and bird photography through the City of Chandler Recreation department, with Thursday night classes starting January 2022.



**LARRY ARBANAS**  
**Montana and the West Coast**

**MARCH 1**

Nature filmmaker Larry Arbanas will present footage filmed last summer from Montana and the West coast from Washington to California. Arbanas produces bird, wildlife, environmental, social issue and documentary films for the Cornell Lab of Ornithology, PBS, USFWS, USFS and most recently the orientation room video for the redesigned River of Time Museum in Fountain Hills. He currently resides in Mesa with his bride of 3 months. Just to be clear, his bride is a bit older than 3 months.

Larry Arbanas was born in Chicago and spent most of his youthful years in the 'burbs. Summers were spent at his Grandfolk's rural

Michigan farm, basically as free child laborers in Grandma's garden. When the work was done, we were free to roam. The best spot was the swamp. just full of Pickerel Frogs, Bullfrogs, Northern Pike and all sorts of bird life. It was heaven on Earth! This love of nature was instilled early and Larry has been pursuing, learning about and documenting natural history ever since.



**HARRIET AND DR. ANDREW T. SMITH**  
**The Sonoran Desert**

**APRIL 5**

Extending from the southwestern US into northern Mexico, the Sonoran Desert is an ecological hotspot of biodiversity due to its vast array of habitats. The Smiths will speak

on the wonders of the Sonoran Desert and the importance of environmental education through books such as "The Astonishing, Astounding, Amazing Sonoran Desert". They will sign copies and all proceeds from their book funds Friends of the Sonoran Desert (FSD), a nonprofit whose mission is to preserve and protect the Sonoran Desert.

Harriet Smith, Managing Director, FSD, is a retired clinical psychologist from Tucson. As a child, she awoke to the coos of Mourning Doves, hiked trails where the vibrant colors of cactus blooms and the sound of rattlesnakes caught her attention, and swam in natural desert pools that filled after monsoon rains. Her desire to conserve the Sonoran Desert motivated her to write this book. She also authored *Parenting for Primates*, 2005, Harvard University Press.

Andrew Smith, Director, FSD, is President's Professor Emeritus and a Distinguished Sustainability Scientist in the School of Life Sciences at ASU. Since 1991 he has served as Chair of the IUCN Species Survival Commission Lagomorph Group. Books include *A Guide to the Mammals of China*, 2008, Princeton University Press, and *Lagomorphs: Pikas, Rabbits, and Hares of the World*, 2018, Johns Hopkins University Press. In 2015 he received the Aldo Leopold Conservation Award from the American Society of Mammalogists.



Borderland saguaro by David Chorlton

**DEPARTURE**

A desert ridge  
 is a wash of dreamstone  
 across clear sky.  
 Before it are saguaros standing in the backlight  
 that grants each one an aura.  
 Whoever lived here in the time before  
 the days had hours  
 knelt patiently and worked until  
 the winter sun was low  
 and they rose and walked away,  
 each one a darkness  
 edged with fire that moved  
 as people do when leaving  
 history behind them.  
 — David Chorlton

**Annual Report**  
**For Fiscal Year Ending May 31, 2021**  
 By Vicki Hire, Treasurer

**INCOME**

Investments	3,684
Donations	8,985
Friends Memberships	6,762
National Memberships	6,258
Birds of Phoenix & Maricopa Co.	3,456
Book Table Sales	90
Interest	8

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**Total Income** **\$29,243**

**EXPENSES**

The Cactus Wren*dition	16,623
Conservation	14,579
Program	4,963
Scholarships & Awards	2,130
Administrative	1,690
Property Tax	78

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**Total Expense** **\$40,063**

# FIELD TRIPS



- Please follow current CDC Guidelines. Participation in field trips comes with risk of exposure to infectious disease. If you have any symptoms of illness or have been exposed to COVID-19, STAY HOME.
- For National Forests Day Use Passes visit USDA Tonto Pass.
- Please Car Pool: Help cover drivers gas- recommended 10 cents/ mile each.
- Follow birding ethics. Visit ABA birding ethics online.
- Wear neutral colors and sturdy walking shoes.
- Bring binoculars, sunscreen, sunglasses, hat, and water.

## Arlington

DECEMBER 10, FRIDAY

Thanks to Donna Smith of Sonoran Audubon Society, there's a great route around Arlington, west of Phoenix, through agricultural fields that is reliable for Burrowing Owls and diurnal raptors, sparrows and common desert species, plus waterfowl at canals and farm ponds. This is a long morning, starting about 6:15 am in Scottsdale and wrapping up perhaps 1ish. Picnic lunch in a Buckeye Park. Limit: 6. Meeting time and carpooling TBD. Difficulty: 1-2.

Leader: Kathe Anderson,  
*Kathe.Coot@cox.net*

To register, please visit Maricopa Audubon Ticketleap.

## Tempe Town Lake

JANUARY 24, MONDAY

We'll meet up behind Tempe Marketplace and explore that area before moving on to the Arts Center and the bridge across the lake. We should get a nice variety of waterfowl, wading birds, raptors and songbirds. Start about 8 am and wrap up about 10:30 am. Limit: 6. Difficulty: 1-2. Flat, paved, but some distance. Meeting place and carpooling TBD. Leader: Kathe Anderson  
To register, please visit Maricopa Audubon Ticketleap.

## Northsight Park-North Scottsdale

FEBRUARY 5, SATURDAY

Meeting time 8:00 am at south parking lot off Thunderbird Rd. Easy walk on level paths. Birds likely to be seen are typical desert birds, wintering sparrows and warblers, and possibly juncos. Should take around two hours or so, depending on bird activity. Limit: 6. Difficulty: 1-2.  
Leader: Brian Ison  
To register, please visit Maricopa Audubon Ticketleap.

## Beasley Flats and Montezuma Well

FEBRUARY 16, WEDNESDAY

This is a combo trip of 3 sites near each other featuring a variety of chaparral and high desert species, including titmice, bluebirds, woodpeckers, and other birds we don't see often in the Valley. The Well may include waterfowl, and Beasley Flats should be good for a variety of sparrows and possible other grassland birds. We'll start about 5:30 am from Scottsdale to start birding after dawn in the Camp Verde area and return 2:30ish. Meeting place and carpooling TBD. Limit: 6. Difficulty: 1-2. A National Park Pass or fee may be required (currently free). Picnic lunch at Montezuma Well.

Leader: Kathe Anderson

To register, please visit Maricopa Audubon Ticketleap.

## Flagstaff Area Lakes with Charles Babbitt

MARCH 12, SATURDAY

Meet at 8:00 am at the Denny's Restaurant near the intersection of I-40 and I-17 (2122 S. Milton Rd.). Bring a lunch and warm clothing. We will look for waterfowl on the lakes. Possible species include Bald Eagle, Red Crossbill, Cassin's Finch, Pinyon Jay, and Rough-legged Hawk. Difficulty: 1.  
Leader: Charles Babbitt  
To register, please visit Maricopa Audubon Ticketleap.

## Sweetwater Wetlands

MARCH 31, THURSDAY

Sweetwater Wetlands, in north Tucson, can be sweet indeed. Good days can top forty species, 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. This trip is timed to see which neo-tropic migrants are already showing up; with luck, we'll get a few flycatchers, vireos and warblers. We'll start about 6:00 am in Scottsdale, and be back about 1ish. Lunch plans TBD. Limit: 6. Difficulty: 1-2 Paths are mostly level dirt and easily negotiated. Meeting place and carpooling TBD.  
Leader: Kathe Anderson  
To register, please visit Maricopa Audubon Ticketleap.



# THE DESERT APARTMENT COMPLEX

by Jim Burns

One day last month my son, who owns a small construction company, showed up with a new bumper sticker on his truck: the one that reads "Licensed Contractors Build Confidence." This on the very day I was to give a Zoom presentation to Maricopa Audubon Society that featured our two Giant Saguaro carpenters, Gila Woodpecker and Gilded Flicker.

Every desert aficionado knows that Arizona's state flower, the Giant Saguaro, is home to a variety of nesting birds housed in its holes excavated by Gila Woodpeckers and flickers. An older, larger cactus may often host multiple species during the same breeding season. I personally have observed eighteen species of birds nesting in Saguaros, mostly in woodpecker cavities, and these include the two master builders themselves as well as other birder favorites such as Peach-faced Lovebird, Western Screech-Owl, Elf Owl, Ash-throated Flycatcher, Purple Martin, and Lucy's Warbler.

At the penthouse level of most of these complexes even those species not on the apartment's residence directory gather during spring and summer at the desert supermarket where a smorgasbord of protein and carbohydrate is provided. Doves, hummingbirds, thrashers, finches, and Verdins join the local nesters to feast on pollen, nectar, insects, and petals of the Saguaros' white blooms and subsequent ripe red fruit. My list of birds seen feeding on big cacti is nearly three dozen long, including White-winged Doves with red "jelly" smeared on their bills and faces, Anna's Hummingbirds drinking nectar, Curve-billed Thrashers gleaning insects, and migrant Black-headed Grosbeaks eating the petals.

My favorite bird families tend to be those with special physical adaptations evolved to allow survival in unique environmental niches. Our avian excavators, the woodpeckers, have specially folded facial bones and long strands of cartilage around the skull which dampen impact and allow them to peck and drill without beating themselves silly. Interestingly enough though, our desert Saguaro specialists, the Gilas and Gilded, excavate only for lodging but not for food like most others in their family. Gilas are strictly gleaners and Gilded, like their

fellow flickers, are anters, and possess the longest avian tongues, capable of extending five inches past the tip of their bills.

I often find myself hanging out with the camera at my "local patch" which has a small stand of Saguaros, many of them old and dilapidated, watching the woodpeckers inspecting new real estate, fixing up old properties, and beginning new residences. Genetic instinct serves them well. Most of the holes face north or east to avoid the harshest hours of the desert sun, and the carpenters always seem to especially investigate and probe areas of the cacti already damaged by vandalism, frost, or heat stress.

Not the least of the attractions of the home in which we have resided for two decades now is the large old Saguaro in the front yard. Twenty feet tall, it features five good-sized cavities, one of which was being appraised by a male Gilded Flicker just as my wife arrived to appraise the property twenty years ago. This in a residential neighborhood of fairly small lots without an abundance of trees, so we knew the Saguaro might attract an unexpectedly nice mix of avian neighbors. Those expectations have been fulfilled. We have hosted Gila



Gila Woodpecker by Cindy Marple

Woodpeckers during two consecutive breeding seasons, Curve-billed have built nests in the crotch of the Saguaro's arms, and House Finches have used its holes for day roosts. Additionally, doves, wrens, and Verdins have fed at its blossoms and fruit.

As the woodpeckers know and have proven to us, the Giant Saguaro is truly the "tree" of the desert. Whenever the carpenters have come to investigate or renovate one of the holes in our Saguaro, we find blackened spines and flesh scattered around our driveway beneath it. The first time this occurred we arranged a visit from a "cactus doctor," but now we know not to worry. The Saguaros protect themselves, to a degree, by secreting a fluid which hardens around the woodpecker workings to form a shield against bacteria. These become the Saguaro "boots" which are found in the desert near fallen cacti.

Next time you're in an area with multiple large Saguaros, look over the apartment properties, see who's in residence and who's coming to the penthouse restaurant. This is the desert's "forest," and you'll be surprised at all the activity.

# CONSERVATION UPDATE

by Mark Horlings

## Migrating Cattle Lawsuit Settled

In October, Maricopa Audubon Society (MAS) and the Center for Biological Diversity ended a lawsuit which should never have needed to be brought. In September, 2020, MAS and the Center sued the U.S. Forest Service for failures in the Coconino, Prescott and Tonto National Forests to protect the Verde River from wandering cattle. Ranchers ignored permit conditions requiring them to keep cattle away from the river, to repair fences when they go down, and to take other basic steps to protect the river. The Forest Service failed to monitor the ranchers' compliance and enforce those rules. The Settlement Agreement requires the Forest Service and the U.S. Fish and Wildlife Service, also a Defendant, to follow a schedule for Endangered Species Act consultations. The Settlement Agreement also specifies areas along the Verde and smaller streams from which cattle are to be excluded. These areas are specifically identified by site and grazing allotment. For example, on the Red Creek allotment along Cave Creek, the Forest Service must see that cattle are excluded from "Approximately 5 river miles of the designated Wild portion of the Verde River...through natural barriers, pasture deferrals, and other techniques beginning where the Verde River enters the allotment approximately 3 miles north of the Red Creek/Verde River confluence until the Verde River exits the Mazatzal Wilderness near the Red Creek/Verde River confluence." Detailed stipulations define cattle exclusion areas from twenty other allotments in the three National Forests. This level of detail would not be

necessary if the three National Forests had been doing their job.

## Migratory Bird Treaty Update

On September 29, the U.S. Department of the Interior announced plans to restore protection to migratory birds under the Migratory Bird Treaty Act (MBTA). Last January, the Trump Administration ruled that criminal penalties imposed by the MBTA would not be imposed unless killing the birds was the intent. Inadvertent bird killings, no matter how extensive, were not to be prosecuted.

Historically, most bird kills result from industrial accidents, toxic discharges, oil spills and other mistakes. The Deepwater Horizon oil spill, a disaster but clearly inadvertent, cost British Petroleum more than \$100 million in MBTA penalties. Because the Trump Administration had formally adopted its rule, the change takes effect later this year.

## Oak Flat and the Proposed Resolution Copper Mine

The fight over Resolution Copper's plans for a mine near Superior has become part of larger political battles. Special legislation adopted in 2014 required the Forest Service to transfer Oak Flat to Resolution Copper sixty days after a final environmental impact statement was released, regardless of what the impact statement said about the harm the mine would cause. As recently as January, 2021, it appeared that Resolution Copper would own Oak Flat by March. A last-minute reprieve stalled the transfer while lawsuits and political maneuvering sought to save Oak Flat.

Mine opponents, mostly Native American tribes and conservation groups, hope to reverse the forced transfer. An earlier bill addressing Oak Flat stalled. However, a provision canceling the 2014 special legislation favoring the mine has been inserted in the \$3.5 trillion social policy and climate change bill Democrats hope to pass. News reports indicate this bill can pass only if it qualifies as a budget reconciliation bill which can clear the Senate with only Democratic votes. As of this writing, it is unclear whether the Oak Flat provision will survive and whether the bill will pass in any form.

Oak Flat is in Arizona's First Congressional District, represented by Tom O'Halleran. Rep. O'Halleran voices support for the tribes (parts of twelve reservations lie in District One) and has promised support for their concerns. However, Washington insiders believe he quietly supports efforts to cut Oak Flat out of the bill. Rep. Greg Stanton of Phoenix is another Democrat reportedly reluctant to include the Oak Flat provision.

## Trespassing Cattle Along the San Pedro River

On October 6th, MAS and the Center for Biological Diversity sued the Bureau of Land Management for failing to protect an endangered plant, the Huachuca water umbrel, in the San Pedro Riparian National Conservation Area (SPRNCA). The Huachuca water umbrel survives in isolated Southwest riparian habitats. It has been on the endangered species list since 1997.

In 2018, more than twenty scientists urged

## TWICE THE SUPPORT



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

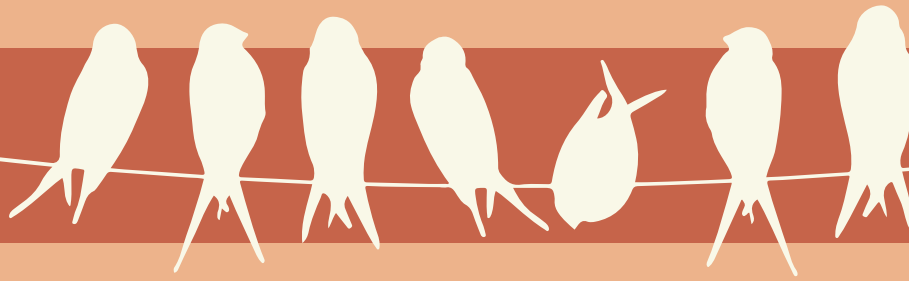
MAS is part of Fry's Community Rewards Program. Register your Fry's VIP card and select Maricopa Audubon #89166 as your non-profit organization at no cost to you. Go to [www.frysfood.com/topic/new-community-rewards-program](http://www.frysfood.com/topic/new-community-rewards-program)



### Maricopa Audubon Society is now registered on Amazon as a charitable organization.

Go to the 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!





BLM to end cattle grazing, noting that grazing threatens many aquatic and riparian species. Earlier this year, MAS and others suggested that the BLM should end, or at least phase out, cattle grazing in SPRNCA. Instead, BLM adopted a plan which left the SPRNCA acreage open for grazing unchanged and increased the time cattle could be on those acres.

BLM justified its decision by arguing that grazing would be confined to upland areas and not allowed along the river. BLM's argument assumed that ranchers would maintain fences, and cattle would stay where they were put. Wrong on both counts.

In announcing the lawsuit, MAS President Mark Larson observed that "The plant's health is an indication of how the whole ecosystem is doing, and sadly SPRNCA is on life support with its BLM caretaker out to lunch."

### Clean Water Act Enforcement

On August 30, 2021, in *Pasqui Yaqui Tribe v. EPA*, a federal district court set aside the Trump Administration's 2020 rule limiting the waters protected by the Clean Water Act (CWA). The 2020 changes set aside an Obama-era rule governing the scope of federal surface water protection and ended protection for washes that run only after storms and streams that run intermittently. Arizona then passed its own statute, HB 2691, offering a bit of protection (not much) to streams previously covered by the CWA. The district court invalidated the Trump EPA rule but did not reinstate the Obama EPA rule. Prior to 2015, CWA jurisdiction

was determined by the *Rapanos* case which held that intermittent and ephemeral streams receive CWA protection if they have a "significant nexus" with a navigable river or stream. Since the Biden Administration had already promised to rework CWA rules by 2022, the return to the earlier *Rapanos* doctrine may be brief. In the meantime, confusion reigns.

On September 29, an Arizona Department of Environmental Quality (ADEQ) webinar explained procedures ADEQ will use to decide when CWA permits are required for projects discharging into Arizona waters. Facility owners will remain responsible for deciding if the CWA applies and if it does, whether their project qualifies for a general permit or must apply for its own. An old list of covered waters, written when *Rapanos* applied, will be dusted off. ADEQ promised another list by October 29, 2021, with periodic updates thereafter.

### State Auditor Criticizes ADEQ Water Protection Performance

On September 28, 2021, the State Auditor General released a comprehensive report on ADEQ's performance in protecting State waters. In some cases, goals went unmet, while in others, ADEQ seems to have ignored specific statutory mandates.

Major findings were: (1) ADEQ has not developed aquifer protection standards for eight contaminants; law required these standards to be published at least seven years ago; (2) ADEQ has not conducted groundwater testing since 2017, though required to do so by statute; and (3) ADEQ has failed to monitor agricultural pesticides in groundwater since 2013, though testing is legally required.

ADEQ does monitor surface water quality. However, results have been poor. The number of impaired Arizona surface waters has risen from 136 to 155 since 2014.



## 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. Your employer may require you 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.

## CROSSWORD ANSWERS

Down

1. Symbol
2. Spines
3. Taproot

4. Pleats
5. Ribs
8. Flickers

9. Saguaro
10. Fruit
11. Threat

4. Permit
6. Adapted
7. Buffelgrass

Across

12. Boot
13. Water
14. Moisture
15. Stem

# THE SAGUARO FOREST

by Peter Wild

An appreciation by David Chorlton

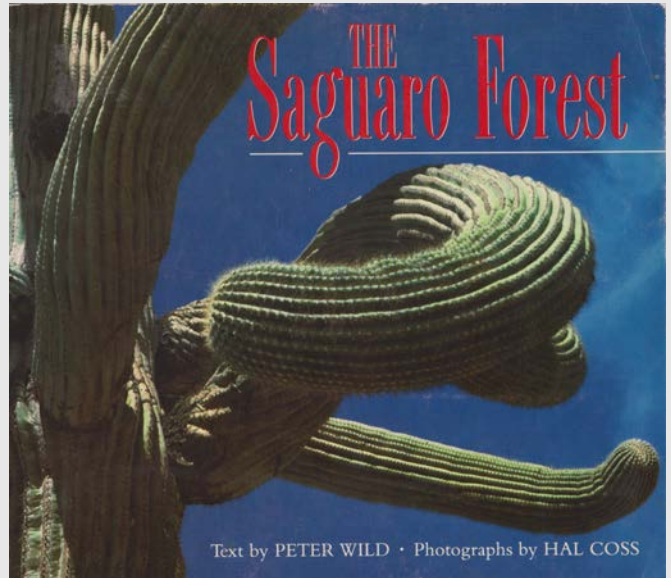
*Peter Wild (1940–2009) was best known as a poet, and became a full professor at the University of Arizona in 1979. As an avid hiker he was knowledgeable on the Southwest and contributed articles to such periodicals as American West, Backpacker, and Smithsonian. In 1986, the former Northland Press in Flagstaff published Peter's book, The Saguaro Forest with photographs by Hal Coss. While the press no longer exists and the book is obviously out of print, anyone interested may well be able to track a copy down at bargain prices through one of the online used book services.*

*Wild's study of the saguaro extends through its history, mythology, and science. These excerpts highlight the quality of what he has to say:*

Yet the saguaro's family origins, that is, the ancestor of the entire cactus clan, still puzzles specialists. Unfortunately, cacti show up sparsely in the fossil record; here, the oldest evidence goes back only about 40,000 years, a mere blink at the parade of the eons. Scientists do note that in spite of their extensive range, cacti flourish in warm climates, especially in the desert borderlands adjacent to the tropics. One theory has it that this fairly recent family began millions of years ago in the hot and humid West Indies. There, a long-term drying trend started delicate violets and begonias on their epochal march of adjustment.

It is actually a series of adaptations that are reflected in the saguaro's structure. A dull, waxy sheen, or cuticle, covers the entire plant. This helps prevent water loss. The broad foliage of humid climates may give us aesthetic pleasure, a sense of lushness and well-being on a summer's day, but such structures surrender moisture rapidly. In a hot and arid region, they can be unaffordable luxuries. Most perennial desert plants do have leaves, but evolution has modified them radically, reducing their size and giving them waxy patinas in order to slow transpiration, or water loss. Furthermore, plants such as the ocotillo shed their leaves during dry periods. To dispense with leaves entirely, as most cacti have done, seems an even better expedient.

But the plot thickens, for there is still more to this tale of adjustment. The saguaro stores the carbon dioxide by turning it into an acid, a process favored by the low nighttime temperatures. The lower the temperature, the more acid produced. By the morning after a cool night, the saguaro is chock-full of acid waiting to be converted into food with



the rising of the sun. Because of this, the saguaro, together with most other cacti, thrives in regions with high day-night temperature differences.

*The book continues to lead the reader through the history of how the saguaro has been perceived:*

In the 1540s, Pedro de Castaneda, the chronicler of Francisco Vasquez de Coronado's expedition north from Mexico in search of gold and fame, called the saguaro "pitahaya." Along with other Spaniards, he was using the term learned from Indians elsewhere and applied to any giant cactus. Unfortunately, subsequent explorers continued to use pitahaya, much to the distress of modern botanists trying to pinpoint the saguaro's fluctuating range throughout history.

*The saguaro is vital to the Tohono O'odham people, still referred to in Wild's book as the Papago:*

In their houses, some Papagos still use the woody ribs of saguaros in doors, walls, ceilings, shelves, and furniture. They further use, or once did, the long sticks in building cradles, carrying baskets, small animal traps, and bird cages. Saguaro products served in the tanning and weaving processes and as tools, especially in making bow strings and fire. In a society of scarcity, even the saguaro spines were not totally discarded but sometimes found employ as needles in tattooing. Papago children played with saguaro doll houses and saguaro noisemakers, while adults also depended on the cactus for items in games for wood to carve religious fetishes. Medicinally, pieces of the cactus served as pain killers. A saguaro gruel supposedly helped mother's milk flow, while the ever-handly ribs made convenient splints. One hardly could turn around in a Papago community without seeing some evidence of the great cactus woven, spliced, nailed, or tied into Papago life.

Today, as did their grandparents, the Indians fashion a long pole of saguaro ribs to get at the plum-sized, dark red fruit growing high on the tips of the cactus. They finish the simple tool with

two crosspieces, one near the end and another in the middle for the lower fruit. Striding out early in the morning before the heat of day, the Indians work their way back to camp, some of them hooking down the fruit with their poles, while others collect it in baskets. A flick of the knife or even a fingernail specially groomed long for the purpose separates the husk from the valuable pulp. Even the discarded part, however, may serve a purpose. Some Papagos place it on the ground fresh side up as a prayer for good summer rains.

*A final point worth referring to is the cultural difference between the Tohono O’Odham and the generally prevalent culture as chronicled in the book:*

In contrast to the Papagos’ relationship to earth and rain, the larger technological society crowding around and sometimes crowding upon the Indian homelands and traditions has little physical or spiritual connection to the saguaro and, hence, feels

no such tenderness toward it. Builders in the Southwest move in their earth-moving machines, and in a blink shave off complex communities of desert plants as a prelude to expanding suburbia.

*And at least once, a saguaro’s last act was to take revenge on the senseless assault against it, quoted from the Tucson Star, February 6, 1982:*

PHOENIX (AP) – A 27-year-old Phoenix man was killed when a saguaro cactus he shot fell on him, authorities said. Maricopa County sheriff’s deputies said David M. Grundman fired a shotgun at least two times at a 27-foot cactus. The shots caused a 23-foot section of the cactus to fall and crush Grundman, deputies said.

*The Saguaro Forest, text by Peter Wild, photographs by Hal Coss, Northland Press, Flagstaff, 1986.*

# SAGUARO YOU TODAY? by Tom Gatz

That is a bumper sticker greeting you will find in *All About Saguaros*, the title of an Arizona Highways book by Leo W. Banks published in 2008. Here are some interesting facts from this book:

- Human beings lived in Arizona before saguaros did. Saguaros only colonized our warming landscape about 10,000 years ago.
- Saguaro roots extend out to a distance about equal to the height of the plant and, in some cases, two times beyond.
- A month after the first summer rains, the diameter of the saguaro can increase by 50 percent.
- Spines on a young saguaro are thicker than on mature cactus and keep it as much as 70 percent in the shade.
- Many saguaros only start reproduction at about the age that many humans start to think about retirement (50-60 years old).
- Saguaro flowers have more stamens (the yellow male filaments with pollen) than any other desert cactus flower.
- For a saguaro forest to maintain a consistent population size over time, on average only one of the millions of seeds produced by each saguaro in its lifetime will need to survive to maturity.
- In the cooler parts of their range, dark rocks that hold heat make better protective “nurseries” for seedling saguaros than do trees.
- Saguaros can split from too much water and can literally explode if directly hit by lightning.
- Saguaro cavities are the only known nesting habitat of the desert race of the purple martin, a species of swallow.
- Urban saguaros become pockmarked with cavities when woodpeckers are forced to re-nest again and again due to their cavities being usurped by the aggressive European Starling. Too many cavities can allow frost to invade and significantly damage the center of the stem.
- Fire carried by contiguous stands of non-native grasses poses the greatest threat to the future of our saguaro forests.
- A 35-foot-tall saguaro with six or seven arms can weigh over 7 ½ tons (or more than two very large SUVs)
- Saguaro flowers produce nectar in two waves; the first peaks about 10 pm to attract the bats, its primary pollinator (in southern Arizona). After dropping off by midnight, it picks up again just before dawn to attract insects and birds. The efficient bees usually remove all the remaining pollen by 10 am.

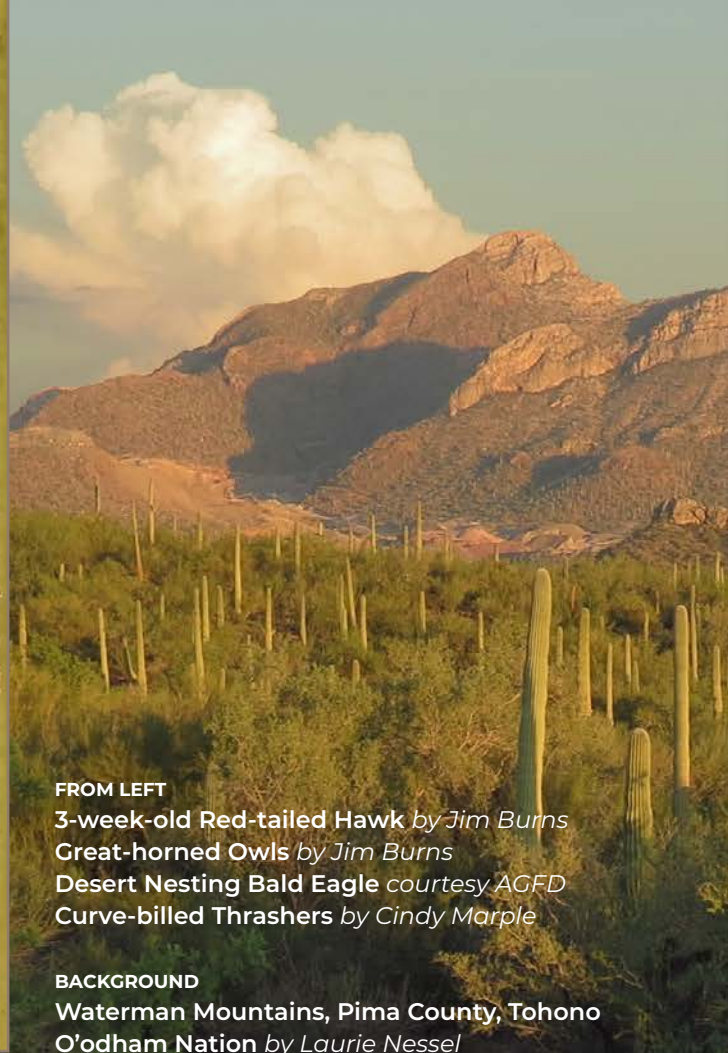


In addition to pollinating saguaro flowers, the White-winged Dove is also a major consumer of saguaro seeds, none of which survive its strong digestive system. Photograph by Javan Larson



The beak of the Sonoran Desert population of White-winged Doves is longer than beaks of white-wings outside of the range of saguaros, presumably to aid them in extracting nectar deep inside saguaro flowers, sort of like a soda straw. Photograph by Marceline VandeWater

And the next time my wife Barbara asks me if I’m asleep, I’ll reply “No I’m just Sonoran”. Thanks to Kevin Hultine, Matt Johnson, and Joe McAuliffe for reviewing earlier drafts of this article.



**FROM LEFT**  
3-week-old Red-tailed Hawk by Jim Burns  
Great-horned Owls by Jim Burns  
Desert Nesting Bald Eagle courtesy AGFD  
Curve-billed Thrashers by Cindy Marple

**BACKGROUND**  
Waterman Mountains, Pima County, Tohono  
O'odham Nation by Laurie Nessel





©Jim Burns



# THE GOLDEN BARREL CACTUS SO COMMON, YET ENDANGERED

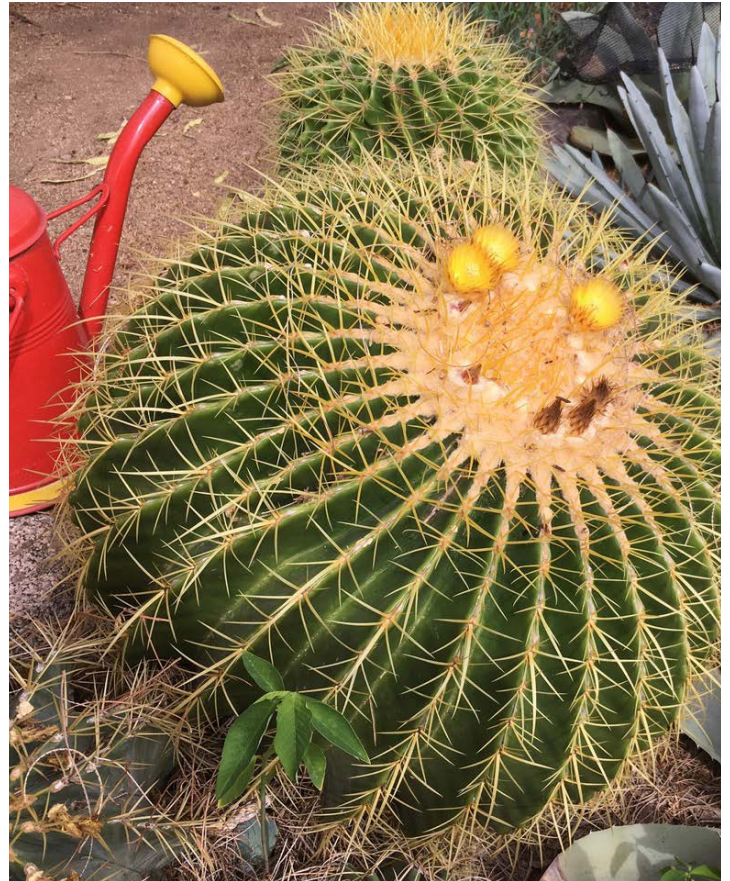
by Tom Gatz

The golden barrel cactus is a mainstay of desert landscapes and is one of the most popular cactus species in the world. Although easily grown in nurseries to meet this demand, the golden barrel is still facing an uphill battle for survival in the wild. Until fairly recently, it was only found in one location in Central Mexico occupying an area less than 4 square miles; and even that location was threatened by inundation from dam construction. Many golden barrels were rescued from this site and, fortunately, several additional populations were found. Still, over-collecting and habitat loss continues to be a threat to this species in the wild and it remains an endangered species in Mexico. Also, these sub-populations are severely fragmented so that genetic exchange between them is very unlikely.

If you are planting one, the Arizona State University plant care website\* recommends light shade or, if in full sun, avoiding western exposures and highly reflected sunlight from walls. Otherwise, they caution that “like the torrid summer of 2020 revealed, golden barrel cacti...will melt like ‘the wicked witch of the west’ when in full sun and air temperatures are in excess of 118° F”. Overwatering when the nighttime temperatures remain above 90° F can also be fatal to many species of cacti and other succulents, so be careful not to inadvertently kill them with kindness.

Sources:

\*[www.public.asu.edu/~camartin/Martin%20landscape%20plant%20library.htm](http://www.public.asu.edu/~camartin/Martin%20landscape%20plant%20library.htm)  
[www.public.asu.edu/~camartin/plants/Plant%20html%20files/echinocactusgrusonii.html](http://www.public.asu.edu/~camartin/plants/Plant%20html%20files/echinocactusgrusonii.html)  
[www.usbg.gov/plants/golden-barrel-cactus](http://www.usbg.gov/plants/golden-barrel-cactus)



**Golden Barrels don't produce their first blooms until about 20 years old or about 14 inches wide.**

Photograph by Tom Gatz

## 16TH ANNUAL PHOENIX AREA WATERBIRD SURVEY

Saturday, 15 January 2022

The abundant supply of unfrozen water bodies, food sources and protection from hunting gives the otherwise urban desert the highest diversity (60 species) and density of wintering waterbirds in the state. Survey data assists in monitoring populations, conflict management and designation of future wildlife viewing areas. To participate, contact Tracy McCarthey [tmccarthey@Tazgfd.gov](mailto:tmccarthey@Tazgfd.gov). To learn more, visit [azfo.org](http://azfo.org).



# Maricopa Audubon Society's 25th Annual Herb Fibel Big Sit! Fundraiser

*Granite Reef Recreation Site, Salt River, Tonto National Forest  
Sunday, 16 January 2022 8 am – 10 am*

All proceeds benefit MAS Youth Scholarships (Audubon Camp, AZFO Annual Meetings, etc.)

There is a limited number of volunteer slots. A Tonto Forest Day Pass is required to park at Granite Reef.

To participate, register with Kathe Anderson at [kathe.coot@cox.net](mailto:kathe.coot@cox.net) by Dec 20. Details will be emailed to participants.

Donate a set amount, or per bird species seen (est. 25-45 species).

Notify Kathe: [kathe.coot@cox.net](mailto:kathe.coot@cox.net) and she'll let you know how many species were seen. Donate online ([MaricopaAudubon.org/About Us/Donate/Big Sit!](http://MaricopaAudubon.org/AboutUs/Donate/BigSit/)) by February 15th, 2022 or mail a check made out to Maricopa Audubon Society (please write "Big Sit!" in the memo line) to: MAS Treasurer Vicki Hire, PO Box 603, Chandler, AZ 85244. Participants can pay on site by cash, check or credit card. Feel free to participate and donate!

## 17TH ANNUAL SANTA CRUZ FLATS RAPTOR COUNT

Saturday, 15 January 2022

Many hawk species winter in southern Arizona, attracted to the abundance of rodents, wintering sparrows, and doves primarily in agricultural fields. Palms, cottonwoods, pines, tamarisk, and palo verde provide roosting sites for owls; and there are increasing numbers of Crested Caracaras, first reported from this area in 1965. Data from these counts helps evaluate plans that could significantly alter the habitat and wildlife there.

For information, please contact Doug Jenness, [dougjenness@gmail.com](mailto:dougjenness@gmail.com).

## NOMINATING COMMITTEE

The Maricopa Audubon Society's annual election of officers and Board of Directors will take place at the April monthly meeting. Any Society member may submit nominations to the Nominating Committee:

Mel Bramley, <i>Chair</i>	(480) 969-9893	<a href="mailto:melbramley@cox.net">melbramley@cox.net</a>
Tim Flood	(602) 618-1853	<a href="mailto:tjflood@att.net">tjflood@att.net</a>
Brian Ison	(602) 909-0541	<a href="mailto:Lwrkenai@cox.net">Lwrkenai@cox.net</a>

## THE GREAT BACKYARD BIRD COUNT

18-21 February 2022

Join birders across the globe for this citizen science project. Count birds wherever you like, not just in your backyard, for at least 15 minutes on one of the GBBC days and submit your observations on eBird. The data provides a long-term record of migration patterns, year-to-year changes, and trends, and helps scientists who can't be everywhere. This is a great opportunity to introduce someone new to birding, especially by using the free Merlin Bird ID app. Recently, more than 160,000 participants submitted their bird observations online, creating the largest instantaneous snapshot of global bird populations ever recorded.

Visit [birdcount.org](http://birdcount.org) for more information.

# '21-'22 ARIZONA CHRISTMAS BIRD COUNT SCHEDULE

## By Doug Jenness and Marceline VandeWater

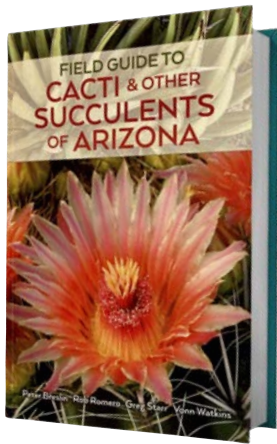
The National Audubon Society has conducted Christmas bird counts since 1900. Volunteers throughout the Western Hemisphere go afield during one calendar day between December 14 and January 5 to record every individual bird encountered within a designated 15-mile diameter circle. These records comprise an extensive database of winter bird

populations and overall health of the environment. Participants are typically assigned to teams based on bird identification skills and endurance. The counts will be conducted with the appropriate Covid-19 safety precautions.

To learn more about counting, search Youtube for Tucson Audubon Society's excellent CBC workshop.

Date	Day	Count Name	Compiler	Phone	Email
12/14/21	Tu	Salt-Verde Rivers	Kurt Radamaker	480-585-1606	Kurtrad@mexicobirding.com
12/14/21	Tu	Tucson Valley	Keith Kamper	520-495-9564	keithkamper@gmail.com
12/15/21	We	Prescott	Carl Tomoff	928-778-2626	tomoff@northlink.com
12/16/21	Th	Gila River	Ryan O'Donnell	435-232-8146	tsirtalis@hotmail.com
12/16/21	Th	Havasú NWR	Marge Penton	928-201-0619	malgaep@gmail.com
12/16/21	Th	Patagonia	Kathy West	206-280-1242	patagoniacbc@gmail.com
			Louie Dombrowski	906-291-0291	patagoniacbc@gmail.com
12/17/21	Fr	Sedona	Richard Armstrong	928-282-3675	richarmstrong47@gmail.com
12/17/21	Fr	Bill Williams River NWR	Joey Saccomanno	928-667-4144 x128	joseph_sacomanno@fws.gov
12/17/21	Fr	Safford	Diane Drobka	928-298-0004	sunny1az@yahoo.com
12/18/21	Sa	Avra Valley	Mary Lou Cole	520-499-8749	marylou40@gmail.com
12/18/21	Sa	Nogales	Bill Lisowsky	520-987-0187	ykswoil@gmail.com
12/18/21	Sa	Hassayampa River	Chrissy Kondrat	623-451-1250	ckondrat@azgfd.gov
12/18/21	Sa	Tonto NM - Roosevelt Lake	Lindsey Brendel	928-467-2241 x403	lindsey_brendel@nps.gov
12/19/21	Su	Saint David	Heather Swanson	520-307-4405	SPRNCAbird@hotmail.com
12/19/21	Su	Jerome	Rob Gibbs	240-780-1318	robgibbs54@gmail.com
12/19/21	Su	Grand Canyon	Brian Gatlin	928-638-7723	brian_gatlin@nps.gov
12/19/21	Su	Atascosa Highlands	Jake Mohlmann	610-390-2424	mohlmann2@yahoo.com
12/19/21	Su	Willow Beach	Clayton Merrill	702-371-7548	clayton_merrill@nps.gov
12/20/21	Mo	Ramsey Canyon	Ken Blankenship	770-317-8486	kenblankenshipbirding@gmail.com
12/20/21	Mo	Chino Valley	Russell Duerksen	928-925-5567	duerksen@msn.com
12/21/21	Tu	Tres Rios	Marceline VandeWater	602-689-4356	marceline@emaroni.net
12/21/21	Tu	Buenos Aires NWR	Bonnie Swarbrick	520-240-3737	bonnie.swarbrick@gmail.com
12/26/21	Su	Superior	Joy Bell	480-760-1393	joyabell_az@yahoo.com
12/27/21	Mo	Phoenix-Metro	Kathy Balman	678-457-0802	nerdyforbirdies@gmail.com
12/27/21	Mo	Santa Catalina Mountains	Kendall Kroesen	520-971-2385	kkroesen@cox.net
			Holly Kleindienst	520-308-7604	hollykleindienst@gmail.com
12/28/21	Tu	Green Valley-Madera Canyon	Malcolm Chesworth	203-947-2440	malcolmsc@yahoo.com
12/30/21	Th	Carefree	Cathryn Wise	602-301-7530	cwise@audubon.org
01/01/22	Sa	Flagstaff-Mount Elden	Terry Blows	928-523-6863	terence.blows@nau.edu
01/01/22	Sa	Portal	Jackie Lewis	520-558-2287	winjac12@vtc.net
01/01/22	Sa	Timber Mesa	Mary Williams	480-235-1792	mary.williams@arizonachristian.edu
01/02/22	Su	Camp Verde	Kay Hawlee	432-703-0007	khawlee@gmail.com
01/02/22	Su	Dudleyville	Doug Jenness	520-909-1529	d_jenness@hotmail.com
01/02/22	Su	Martinez Lake-Yuma	Lin Piest	480-662-0455	lpiest@aol.com
01/03/22	Mo	Appleton-Whittell	Suzanne Wilcox	520-455-5522	swilcox@audubon.org
01/04/22	Tu	Ajo-Cabeza Prieta	Stephanie Doerries	520-387-4989	stephanie_dorries@fws.gov
01/05/22	We	Lake Pleasant	Eric Hough	480-751-8144	eric.hough@maricopa.gov
01/05/22	We	Payson	David Hallock	928-474-9475	eldoradh@rmi.net
		Glen Canyon	John Spence	928-608-6267	john_spence@nps.gov
		Lukeville	Daniel Martin	928-210-2420	daniel_j_martin@nps.gov
		Organ Pipe Cactus NM	Daniel Martin	928-210-2420	daniel_j_martin@nps.gov





# A FIELD GUIDE TO CACTI AND OTHER SUCCULENTS OF ARIZONA

by Peter Breslin, Rob Romero, Greg Starr, & Vonn Watkins

Publisher: Tucson Cactus and Succulent Society,  
2020, 302 pp., ISBN: 9780692784051

## Reviewed by Tom Gatz

While there are plenty of great bird identification books and apps out there, this third edition (2020) of *A Field Guide to Cacti and other Succulents of Arizona* is certainly the best, and really the only, comprehensive cactus guide for the Arizona naturalist available.

Almost everyone knows the generic names for the big boys like saguaros, barrels and prickly pears, but with this guide, we can now reliably put specific names on them as well as identify all those interesting smaller cacti and other succulents that we encountered on our explorations of Arizona. Designed to be detailed enough for armchair reading, but portable enough for hands on field work, this guide draws on the contributions of more than six author/photographers, all of whom are experts in Arizona field research.

The authors have traveled and re-traveled hundreds of back road miles to establish not only species distributions and to expand on current knowledge in populations, but also to capture that rare moment of peak flowering. The latest taxonomic, botanical and biogeographic information has been incorporated into this extensive regional treatment which the authors hope will be useful and entertaining for years to come.

Covering over ninety species of cacti, sixteen species of agave and its relatives, and twenty-four species of other succulents, this handbook is an up-to-date and detailed guide to the identification, distribution and appreciation of Arizona's botanical wonders, the cacti and succulents, and is illustrated throughout with color photos and range maps.

Here are just a few fun facts from this book. The saguaro is the largest cactus in Arizona, rarely reaching 50 feet tall. But did you know that some cacti in the genus *Escobaria* are among

Arizona's smallest cacti, never getting over 1.5 inches tall and wide? Almost as small and with a name longer than the plant itself is one of Arizona's rarest cacti, the endangered Navajo Plains Cactus *Pediocactus peeblesianus ssp. peeblesianus*. It is almost impossible to locate except during the flowering season when a flower peeks up between the pebbles. Once flowering is over, the plant withdraws into the soil for the summer rest period. From the range maps in this book, it appears that the only cactus that occurs in every Arizona county is the Englemann Pricklypear *Opuntia engelmannii*. Among the other most widespread cacti in the state are the Brown-spined Pricklypear *Opuntia phaeacantha* and the Beehive Cactus *Escobaria vivipara*, both found in every county except Yuma, and the popular Engelmann Hedgehog with its large and showy flower display. Best adapted to survive grass fire award goes to the Arizona Rainbow Hedgehog in the grasslands of southeastern Arizona where it flourishes even when lower part of the stem is damaged by fire. Most cold-adapted prize goes to the seemingly poorly named Fragile Pricklypear *Opuntia fragilis* that survives further north than any other cacti, all the way into Canada. *Fragilis* actually translates to "brittle" referring to its easily detached pads. One of my favorites (for its name and for its response to ample rainfall) is the normally difficult to locate, and aptly named, Pancake Pincushion *Mammillaria heyderi var. bullingtoniana* that grows as a low, round disk, almost flat to the ground, but can swell up and inflate into a ball after heavy monsoon rains. Watch for it when birding during late summer in Cochise County. Who knows, you just might start a cactus list.

This book is available from the Tucson Cactus and Succulent Society. \$25.95 <https://tcss.wildapricot.org/TCSS-Field-Guide>. Also available (when in stock) at The Desert Botanical Garden, Boyce Thompson Arboretum, and Arizona Cactus Sales in Chandler.



The aptly named Pancake Pincushion Cactus responds to summer rains by 'inflating' with water and changing shape from a low disk to a more globular form.

### BEFORE RAIN AND AFTER RAIN





# CONNECTING WITH NATURE MAKES ARIZONA A FUN AND BETTER PLACE TO LIVE!

## THE STATELY SAGUARO

### A SYMBOL OF THE SOUTHWEST AND OTHER AMAZING CACTUS FACTS

Text and Photographs by Vicki Hire



**Did you know** a cactus is a type of plant that can survive in extremely hot and dry habitats, such as deserts? When there is more than one cactus, they are referred to as “cacti.” Two thousand different species of cacti in the world have adapted to conserve water during long dry periods. And, thanks to its ability to store water, a cactus can live for over a year without rain. A cactus has many small thin roots near the surface of the soil, which it uses to quickly collect rare rainwater to store in its stem and roots. Some cacti have a longer thick root called a taproot, which grows deep into the soil reaching underground water when the topsoil is dry or during a drought. The spines of a cactus are modified plant leaves. These sharp spines are important in helping protect the cactus from plant-eating animals that might try to reach

the moisture that the cactus stores in its juicy stem. Not only does the cactus stem store water, but also uses photosynthesis to produce food by using sunlight and carbon dioxide.

**Did you know** Saguaros are a species of cacti found only in the Sonoran Desert of Arizona and western Sonora, Mexico? Saguaro is pronounced “suh-wahr-oh” and in Arizona it is against the law to harm a Saguaro cactus. The Saguaro is one of many plants in Arizona protected by the Native Plant Protection Act, and within national park lands, the removal of any plant is illegal <sup>1</sup>. Landowners need a special permit from the Arizona Department of Agriculture for any construction that will affect a living Saguaro cactus. Cutting or removing a Saguaro without a permit is a felony.

**Did you know** many species of desert animals depend on the Saguaro? Gila Woodpeckers and Gilded Flickers carve deep holes in Saguaros to make their nests. After they’ve raised their families and leave, other birds such as Pygmy Owls use the nests for their young. The holes that bird’s nest in are called Saguaro “boots” and can be seen on dead Saguaros. Native Americans used these boots to carry water before canteens were available.

**Did you know** Saguaros have beautiful flowers in the spring, providing nectar to moths, butterflies, bees, and bats? Later those flowers close and mature into a red fruit, which can contain up to two thousand small black seeds. The fruit provides food and moisture for many desert animals such as woodpeckers,

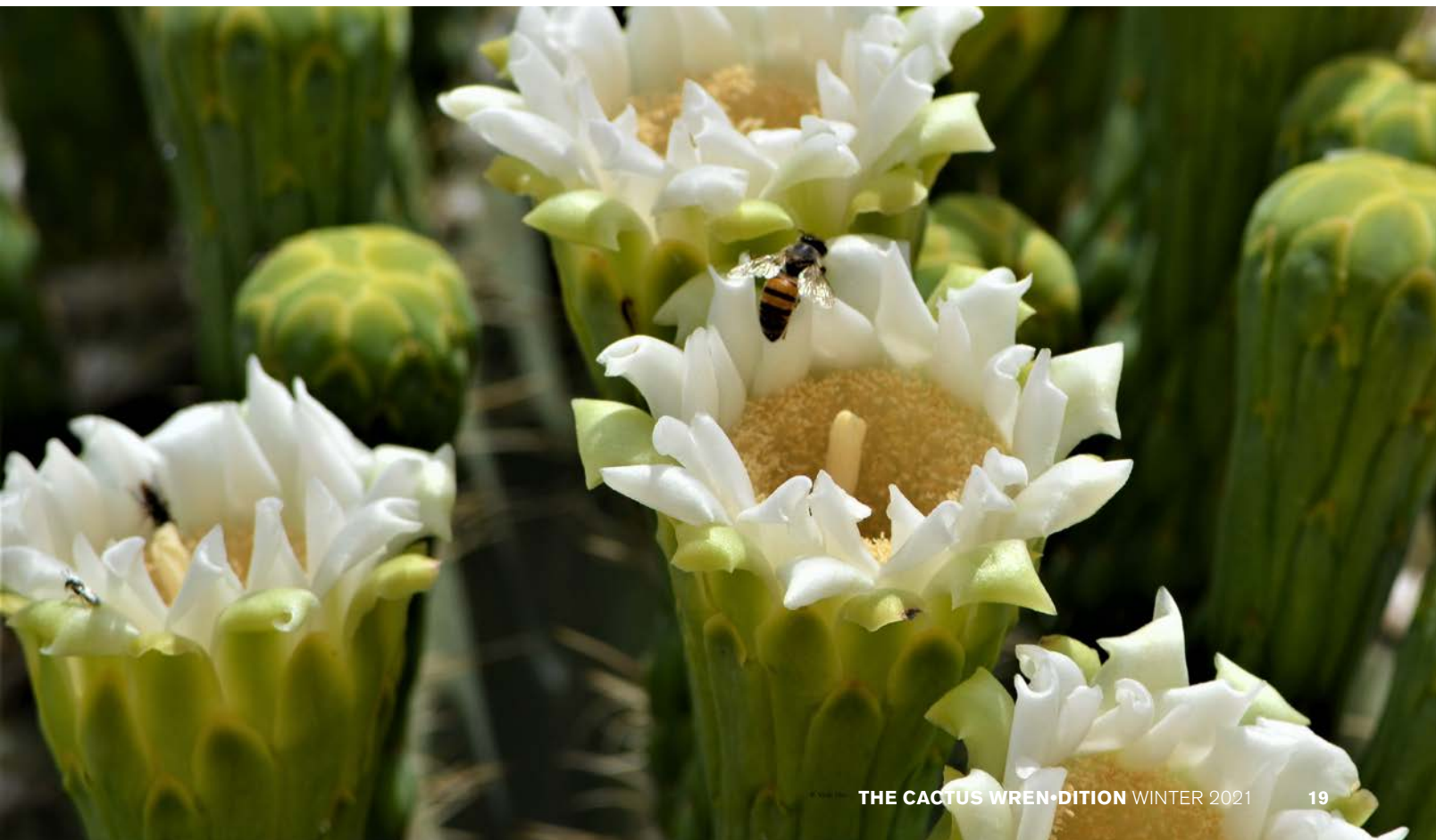


finches, doves, and even coyotes. Native Americans like the Tohono O'odham people have harvested this nutritious fruit for thousands of years.

**Did you know** Saguaros consist mostly of water? An adult plant can weigh six tons; that's 12,000 pounds or more. This weight is supported by a skeleton consisting of interconnected, woody ribs inside the Saguaro cactus. The number of ribs corresponds to the number of "pleats" on the outside of the Saguaro. The pleats can expand like an accordion, which allows the Saguaro to store a lot of water during a rainstorm.

**Did you know** the biggest threat to the Saguaro is our rapidly expanding human population, with the development of new homes causing a tremendous loss of habitat? Other threats to Saguaros are vandalism and fires which are more frequent due to the spread of Buffelgrass, Fountain Grass, and Red Brome. These grasses are changing the desert landscape and putting the ecosystem at risk. Can you imagine a desert without cacti?

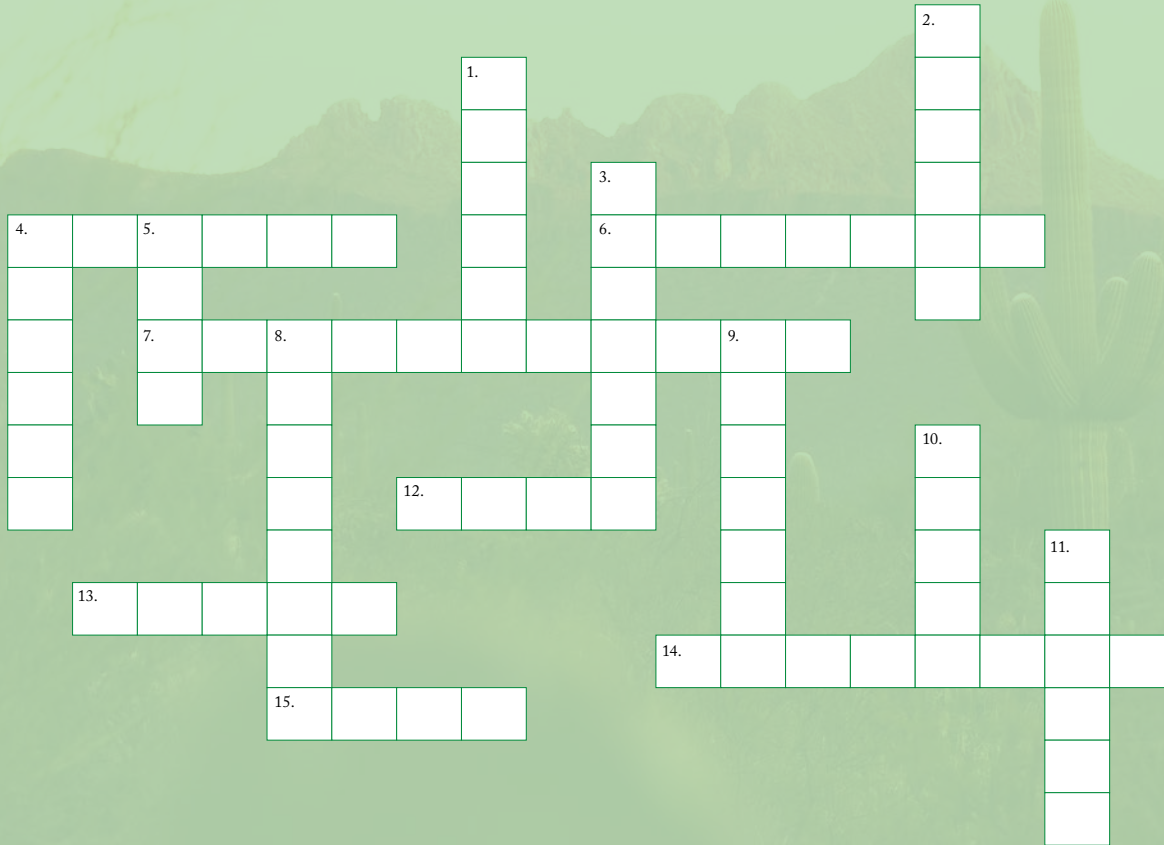
1. [https://www.nps.gov/sagu/learn/nature/saguaro\\_threats.htm](https://www.nps.gov/sagu/learn/nature/saguaro_threats.htm)





# THE STATELY SAGUARO

## CROSSWORD PUZZLE



### DOWN

1. Saguaros are considered a \_\_\_\_\_ of the Southwest.
2. Modified plant leaves of a cactus are called \_\_\_\_\_.
3. Some cacti have a longer, thick root which grows deep into the soil called a \_\_\_\_\_.
4. These can expand like an accordion, and allow a Saguaro to store a lot of water during a rainstorm.
5. The skeleton of a Saguaro is made up of woody \_\_\_\_\_ inside, which correspond to the number of pleats on the outside of the Saguaro.
8. Gilded \_\_\_\_\_ carve deep holes into Saguaros to make nests.
9. In Arizona it is against the law to harm this cactus.
10. The \_\_\_\_\_ of a Saguaro contains up to 2,000 small black seeds.
11. Vandalism, fires, and loss of habitat due to human population are a \_\_\_\_\_ to the Saguaro.

### ACROSS

4. An Arizona landowner must have one of these from the Department of Agriculture to remove or cut a Saguaro.
6. Approximately 2,000 species of cacti in the world have \_\_\_\_\_ to conserve water during long dry periods.
7. The spread of this grass is changing the desert landscape and increasing the risk of wildfire.
12. The hole carved by a bird into a saguaro for its nest is called a \_\_\_\_\_.
13. Saguaros are made mostly of \_\_\_\_\_, and can weigh 6 tons, or 12,000 pounds!
14. The fruit of a Saguaro provides \_\_\_\_\_ for many desert animals like woodpeckers, finches, and even coyotes.
15. The cactus stores water in its \_\_\_\_\_.

Answers on page 9.

# GUESS THIS BIRD

by Vicki Hire

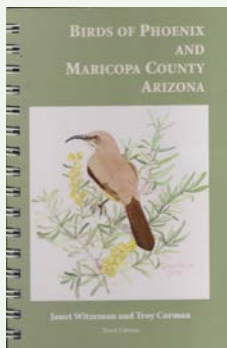


## Clue:

This small hummingbird is between three and four inches long, and its wingspan is only about five inches. It resides mostly in Mexico and the southwestern United States.



Answer:  
Broad-billed Hummingbird, male. Notice the metallic blue gorget (throat) and red bill that is tipped with black. The Males will perform a flight, much like the swinging of a pendulum, during its courtship display to a female Broad-billed Hummingbird.



## Review of Birds of Phoenix and Maricopa County in Western Birds

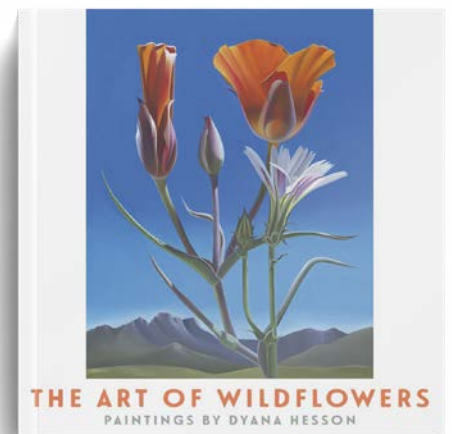
The third edition of *Birds of Phoenix and Maricopa County*, published by Maricopa Audubon Society, has received a glowing review by Catherine Waters in *Western Birds* vol. - the *Quarterly Journal of Western Field Ornithologists*. Vol. 52(3). Waters writes, "Maricopa Audubon is to be congratulated to have published such a fine book and guide that describes its area so well in terms of the birds, the landscape the birds live in, and how the avian life of the area has fared in the unparalleled urban/suburban growth that Maricopa County has become. This publication was an act of love for those who volunteered to work on it and their devotion shines through on every page." The book makes an excellent gift for the birder in your life. Find vendors on the MAS website/publications or purchase them at our member meetings. All proceeds benefit Maricopa Audubon Society's conservation efforts.

# PAINTINGS BY DYANA HESSON



“Beeline” Saguaro and Sky, Salt River, AZ.  
Oil on canvas 40 by 60 inches, © 2019  
Private Collection

Botanical artist Dyana Hesson loves a good adventure. She was born and raised in the gold country of Northern California. As a kid, she was always happiest exploring outdoors and rarely settled down to read a book all the way through. She found art in college and has been painting professionally for 29 years. Dyana lives in Mesa, Arizona with her husband Randy, daughter Sydney and Jack Russell terrier, Boon. She has a case of incurable wanderlust, and a love affair with God’s creation. Her work is collected worldwide and her series, True Blue Arizona was featured in Arizona Highways Magazine in March 2020. Dyana is a Master of the Southwest award winner, Master Signature member of American Women Artists, and a founding member of the Art on the Wild Side art exhibit program at the Phoenix Zoo.



Dyana’s latest book, *The Art of Wildflowers* was recently published by Arizona Highways. You can see more of her work at Bonner David galleries in Scottsdale, and at [DyanaHesson.com](http://DyanaHesson.com)



“On Top of Her Game” Saguaro Blooms and Lovebird  
Oil on canvas. 28 by 22 inches, © 2020  
Private Collection

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### MONTHLY MEETING

Please see meeting information on page four. 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*

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We send *The Cactus Wren•dition* to all current members of NAS if you are assigned to or choose MAS as your local chapter.

To become a Friend of MAS, please pick up a form at the book sales table at our monthly meeting or visit our website, [www.maricopaaudubon.org/join](http://www.maricopaaudubon.org/join)

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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 Pro Tem*, Laurie Nessel: [laurienessel@gmail.com](mailto:laurienessel@gmail.com)

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