The Cactus Wren·dition

Volume LXXI, No. 1 Spring - 2016

Round-tailed Ground Squirrels

Photo by Denny Green

New Children's Pages Inside!

Programs

programs

Meetings are held at: Papago Buttes Church of the Brethren (northwest of 64th Street and Oak Street, which is between Thomas Road and McDowell Road). You may enter from either 64th Street, just north of Oak Street (if coming from the south you will have to make a "U" turn), or Oak Street just west of 64th Street, by the Elks Lodge. Turn right into the gravel parking lot. Come and join us and bring a friend!

March 1, 2016

Diane and David Reesor
Madagascar and Mozambique

Perennial favorites, Diane and David Reesor, present the first ever flying safari in Madagascar during October 2013. Madagascar is a mini-continent larger than France, containing the world's most bizarre and diverse flora and fauna in otherworldly landscapes. The Reesors' program includes many of the endemic species: reptiles, beautiful birds, and enigmatic, endangered lemurs. To see some of David's extraordinary images of remarkable subjects from around the world, visit reesorphotography.com. If time allows, they will also present Mozambique images atypical of the African tour.

Schlegel's Asity. Photo by David Reesor

Committees/Support

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http://www.maricopaaudubon.org

The earth has its music for those who will listen.
George Santayana

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.

April 5, 2016

Cindy Marple
Birds of Tanzania

Explore the rich diversity of birds found in the Serengeti plains and nearby Ngorongoro Crater. Familiar families such as eagles, shrikes, and storks have far more species than we see in North America. Other families are completely new and different. The plains are mostly grasslands, but the watering holes that attract wildlife also attract surprising numbers of shorebirds, waders, and waterfowl, especially during the winter migration of birds from Europe. To round out the safari experience, we'll also enjoy some of the scenery and other wildlife along the way.

Lilac-breasted Roller. Photo by Cindy Marple

May 3, 2016

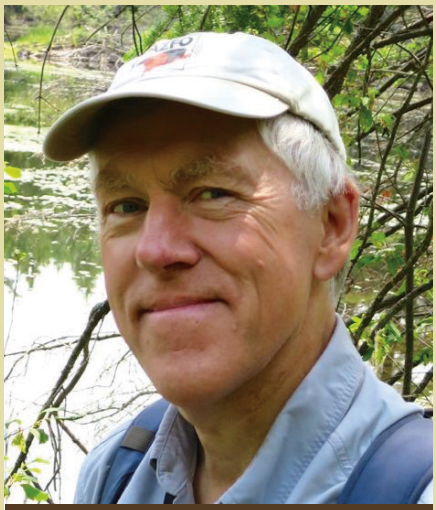
62nd Annual MAS Banquet and Meeting
Location: Piper Hall, Franciscan Renewal Center, 5802 E Lincoln Dr., Scottsdale, Arizona, 85283
6:00 pm BYOB social hour, raffle, and silent auction. Come early to meet old friends and new, and to peruse the auction and raffle tables. Raffle tickets available at the door.
7:00 pm Buffet Dinner (includes vegetarian option).
Cost: $28 per person ($25 for "Friends of Maricopa Audubon"). Reservations required. No-shows will be billed. You may pay at the door (cash or check) or mail checks payable to Maricopa Audubon Society to MAS Banquet, c/o Matt VanWallene, 11004 E Villa Park St., Chandler, AZ 85248.

Our agenda will include induction of our new Board and presentation of the Seventh Annual Herb Fibel Memorial Award for Distinguished Service to the Maricopa Audubon Society.

Banquet Guest Speaker: Pierre Deviche, Odonates of Arizona

Odonates are an ancient order of insects that includes dragonflies and damselflies. They are of increasing interest to biologists due to their sophisticated visual and flight systems; complex behavior including, in some cases, migration; and because larvae of most species develop in water, also as potential indicators of environmental quality. Many species are relatively large, colorful, and easy to identify, observe, and photograph. Thus odonates are of increasing interest also to the general public. The talk will present an overview of the biology of odonates with emphasis on the life cycles and distribution of Arizona species.

Pierre Deviche received a PhD in comparative neurobiology from the University of Liege, Belgium and moved to the US almost 30 years ago. He served on the faculty of the Department of Biology and Wildlife of The University of Alaska Fairbanks for 11 years and currently is Professor of Environmental Physiology in the School of Life Sciences at ASU. His primary research concerns the physiological adaptations of birds to their natural environment, in particular the Sonoran Desert, and to urbanization. His research has resulted in approximately 120 scientific publications. He served on the Arizona Bird Committee, works as Editor of the Arizona Birds Online, and created and maintains the Arizona Dragonflies website, http://azdragonfly.org.



Pierre Deviche

On the Cover: Round-tailed Ground Squirrels
Focal Length 439 mm, 1/1600 sec, f/8, ISO 500, Canon EOS 7D, Mark II, Sigma 150 x 500mm lens, Desert Botanical Garden, May 2, 2015 by Denny Green.

Denny says: I like to watch these baby round-tailed ground squirrels play with each other and grow up. They learn to climb trees, run, dig, and they learn what is dangerous and what is safe. Their mother teaches the young ones and they are so willing to learn. They are cute.

President's Message

Mark W. Larson

The New Year is off to a good start! I go forward always hopeful that more of you will become active members of the Maricopa Audubon Society. Come to a monthly meeting! Even if it is your first time, I can guarantee that you will meet some welcoming people and that you will enjoy the program. Or, sign up for a field trip. MAS field trips are fun and educational. They are not geared for experts. Instead, they are designed to help you develop your field skills and better appreciate the natural world around us. Isn't strengthening that connection worth a morning or two of your time?

Every time I go into the field with a group of our members, both neophyte and advanced naturalists, I learn something– and I've been birding for almost 50 years! Sometimes, what I learn is about insects or geology or archaeology or native plants. We have so many knowledgeable members that sharing knowledge in the field is a joy. Just learning more about you makes a trip into the field more enjoyable for me.

I hope that you noticed the **Green Scene** pages at the center of the last issue of *The Cactus Wren•dition*. I and your Board of Directors want to encourage parents and children to discover the natural world. We will have more of these pages in future issues and we welcome your suggestions on how to more effectively reach out to the younger members of our community.

Speaking of young people, later this spring we should complete our checklist of birds for Shadow Rim Ranch, the Girl Scout Camp north of Payson. I look forward to training some of their leaders in the techniques we have developed and refined in our Field Trip Leader Training that we have been working on for more than a year. The intended result will be scouts who will have richer camp experiences and deeper connections to the natural world.

Last fall, our organization again suffered a great loss. Long time member Tom Danielsen had been active on our Conservation Committee, written articles for the *Wren•dition*, and been involved in many other ways over the years. We will treasure his memory.

Mark W. Larson
President
MARICOPA AUDUBON SOCIETY
Phoenix, Scottsdale, and Tempe, Arizona

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Letter from the Editor

by Gillian Rice

My most thrilling bird encounter this past fall took place on the 20th floor of a hotel in Miami, Florida. I was in a workshop, with about ten other botanical artists, absorbed in painting the intricacies of tropical leaves. The class assistant suddenly called us in a loud whisper, "come and look, slowly, slowly, this window." We sidled to the end of the room as close as we dared to the window. On the ledge, a Peregrine Falcon seemed to watch us. We looked back, not daring to move for fear of startling it. It probably couldn't see us well because of reflections in the sun-screened window. What a magnificent wild creature. So close. It spent a few minutes on the ledge, still, but now and then turning its head. It maneuvered around, swooped down, and powered away. Gone, over the busy streets.

This was not my first peregrine. That was twenty years ago, on the cliffs, far away, just below Glen Canyon Dam. Less than a month after returning from Miami, however, I came across my third peregrine, on a pylon, just north of the path along Rio Salado, as I searched for "downtown" Burrowing Owls. Was that peregrine a resident of Arizona or a bird come from afar to spend winter with us?

In this issue, you can learn more about raptors like the Peregrine Falcon. Our Green Scene section - for the young and young at heart - features raptors. Matt VanWallene presents a raptor photo essay revealing what's possible to observe in our county. Vicki Hire goes out into the field with the founder of Arizona Wildlife Resource and discovers how she is helping raptors - and how you can help too.

Maricopa Audubon Society is not just about birds. We emphasize the entire ecosystem and are keen to conserve all forms of native fauna and flora. Tom Gatz writes about the relationship between moths and yucca. In Science Corner, Brian Sullivan shares research findings about horned lizards. Please enjoy and learn from our additional features: Tales from the Field, Conservation Update, art, and poetry.

Thank you to everyone who volunteers knowledge, experiences, and photographs for each issue. If you have ideas or feedback or you would like to join our group of contributors, please email me at editor.wrendition@yahoo.com.

Downtown Wren

by David Chorlton

Along the foot of a parking lot wall
on Fillmore Street not far
from Central Avenue
one Wednesday morning in November
with the sun breaking through
a thin layer of cloud
and traffic stopping, starting, stopping
again while the daily round
of transactions progressed via all
the usual channels with credit cards,
checks, and small change;
moving too quickly
at first to be identified
then halting behind a bush
that grew desperately in the thin strip
of earth surrounded
by concrete, glass, and steel, where
business was the business
of the day,
a Cactus Wren appeared
as the last survivor from a time no one
remembers, before the desert
was replaced by a future.

Maricopa Audubon Society Field Trips

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

Reminders:

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

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

Friday, March 11

Florence Farmlands

Start about 5:45 am from Scottsdale, detour by Arizona Farms Road for possible Burrowing Owls and Ferruginous Hawks before going to Florence. Head east into farmlands behind the prisons. Possible sparrows, raptors, cardinals, meadowlarks, Yellow-headed Blackbirds, common desert birds, and more. Perhaps an early lunch at a Greek restaurant in Florence before returning to Scottsdale about 1:00 pm. Difficulty: 1. Limit 8.
Leader: Kathe Anderson, kathe.coot@cox.net.

Saturday, March 15

Flagstaff Area Lakes

Meet at 8:00 am near the intersection of I-40 and I-17. Bring a lunch and warm clothing. Look for waterfowl on the lakes. Also possible species like Red Crossbill and Pinyon Jay. Minimum of 6 people required.
Leader: Charles Babbitt, 602 840-1772 or cjbabbitt@cox.net

Sunday, March 20th.

Rio Salado Restoration Area (Central Avenue, Phoenix)

Start at 8:00 am. End by 11:00 am. Likely birds include seasonally migrating passerines, Great and Snowy Egrets, herons such as Black-crowned Night-Heron, late wintering ducks with possible Mexican ducks, Harris's Hawk, and accipiters. Also butterflies and dragonflies. Difficulty: 1. Limit 12.
Leader: Myron Scott. For reservations contact Larry Langstaff, larrylangstaff1@gmail.com or text 480 710-0431

Friday, April 15

Mount Ord and Sunflower

Visit Mount Ord, both the top and the 1688 trail; stop at Sunflower on the return, focusing on resident birds and spring migrants. Many should be preparing for the breeding season and should be vocal. Lower elevations of Mount Ord should produce Black-chinned Sparrow, Gray Vireo, Western Scrub-Jay and Spotted Towhee. Higher elevations may give us Hepatic Tanager, Painted Redstart, Grace's Warbler, Black-throated Gray Warbler, Olive Warbler, and Virginia's Warbler. At Sunflower, we hope to have the returning Common Black-Hawks and Zone-tailed Hawks along with Yellow Warbler, Northern Cardinal, Summer Tanager, Hooded Oriole, and much more. Depart Mesa at 5:30 am and return by at least 4:00 pm. Difficulty 2: Hiking involved, not hard, but the 1688 trail on Mt Ord might result in a four mile hike if we choose to go to the end and back. Bring plenty of water, lunch, and snacks. Wear hiking shoes. Limit 8 (to travel in no more than two vehicles).
Leader: Gordon Karre, karhop1@msn.com

Monday, April 18

Usery Mountains Tarantula Hawk Wasp Observations

Join ASU's Professor Emeritus, John Alcock, to search for and study tarantula hawk wasps as they gather for springtime atop a high hill in the Usery Mountains. Temperature will determine their activity level and the group's starting time (approximately 8:00 am). A reasonable level of fitness and sturdy hiking boots are required to walk up the hill for about 30 minutes. Bring water and a hat and expect to return to the parking area around 11:00 am. Limit: 10.
For reservations: larrylangstaff1@gmail.com, 480 710-0431

Sunday, April 24

Lower Salt River

This well-known, favorite, and close-to-the-city (north of Mesa) field trip includes a drive along the Bush Highway between Granite Reef Dam and Saguaro Lake, with stops in recreation areas along the Salt River. A Tonto National Forest day-use parking pass is necessary for drivers. With spring migration underway, expect an exciting day's list of 50 species including Vermilion Flycatcher, Common Gallinule, Belted Kingfisher, Lucy's Warbler, Ladder-backed Woodpecker, and the always intriguing Bald Eagle. Excellent additions could be Bullock's Oriole, Osprey, and Ash-throated Flycatcher. Bring lunch, and a scope, if available. Start at 7:00 am. Difficulty: 1. Limit: 15.
Leader: Richard Kaiser, rkaiserinaz@aol.com, 602 276-3312

Thursday-Friday, April 28-29

Prescott and Vicinity

A trip for those who want to venture the back road to Prescott: Route 89 through the Bradshaw Mountains. Leave Scottsdale at 7:00 am to catch the Hassayampa River Preserve for a couple of hours. From there, wander up 89, stopping wherever it seems birdy, to Prescott. In the afternoon, and over the course of most of the next day, explore Prescott sites, including the Highlands Center, Watson Woods Riparian Preserve, and at least one lake. In addition to year-round higher elevation birds like Acorn Woodpecker and nuthatches, we hope to see some neotropic visitors such as tanagers, vireos, warblers, confusing flycatchers, and grosbeaks. Return to the Phoenix area about 4:00 pm on Friday. Expenses of about $150 include gas donations, lodging, meals, and entry fees. Difficulty 2. Limit 8.
Leader: Kathe Anderson, kathe.coot@cox.net

Friday, May 6

Seven Springs

Leave Scottsdale about 5:15 am and bird our way into Seven Springs. Explore a trail and one or more picnic areas to search for migrants and summer visitors. We should find a variety of desert species on the way, plus resident titmice, wrens and towhees, in addition to the migratory birds. Eat an early picnic lunch and return to Scottsdale about 1:00 pm. Difficulty 1-2. Limit 8.
Leader: Kathe Anderson, kathe.coot@cox.net

Saturday June 4

San Francisco Peaks Specialties

A day of birding in the shadow of Arizona's tallest peaks: Hart Prairie, Little Spring, Arizona Snowbowl, and other exciting locations. Search for Three-toed Woodpecker, Williamson's Sapsucker, Clark's Nutcracker, Red Crossbill, Pinyon Jay and other coniferous and pinyon/juniper species. Meet at 7:30 am just north of Flagstaff.
Bring lunch. Difficulty: fairly easy hiking under high altitude conditions. Minimum 8.
Leader: Charles Babbitt, cjbabbitt@cox.net, 602 840-1772

Friday, June 10

Kachina Wetlands
A beautiful destination, just south of Flagstaff. Start at 5:00 am from Scottsdale, to arrive on site a little before 8:00 am. Explore the wetlands for Western Bluebird, swallows, high elevation species such as nuthatches and Steller's Jay, waterfowl and raptors. In the past, we've seen ibis, Sora, Virginia Rail, truly ruddy Ruddy Ducks, phalaropes, Osprey and kestrels. Bring lunch. Return to Scottsdale around 2:00 pm. Difficulty 1-2. Limit 8.
Leader: Kathe Anderson, kathe.coot@cox.net

Sundays: June 19, July 17, August 28, September 18, October 16

Beginning Butterflies and Dragonflies at Gilbert Water Ranch
This area is outstanding for beautiful butterflies, dragonflies, and damselflies. Learn to identify local butterflies including Painted Lady, Queen, and Fiery Skipper as well as common dragonflies and damselflies such as Western Pondhawk, Flame Skimmer, Blue-ringed Dancer, and Familiar Bluet. Suggested $5.00 donation to support the Gilbert Riparian Preserve. Bring binoculars (close-focus preferred), water, and hat. *Common Dragonflies of the Southwest* by Kathy Biggs on sale for $10.00. No reservations. Easy. Meet 7:00 am June-September, 7:30 am October at the Dragonfly Ramada just south of the parking lot, east of Greenfield Rd., off Guadalupe Rd., just east of the Gilbert Public Library in Gilbert.
Leaders: Janet Witzeman and Laurie Nessel

MAS to Hold Elections in April

This year's election will take place at the General Membership Meeting on Tuesday April 5, 2016. Any member of this Chapter in good standing is eligible to serve on the Board of Directors and can have his or her name placed on the slate by the Nominating Committee. Should you wish to serve, call a member of the Nominating Committee: Mel Bramley, Chairman, 480 969-9893, Emerson Stiles 480 661-0898, or Veronica Heron, 602 579-7093. Be sure to indicate the position for which you would like to be nominated.

All Board positions, except the Editor of *The Cactus Wren•dition*, are elected by the membership. (The Board appoints the Editor). Nominations will also be taken from the floor before the election, but please advise the Nominating Committee of your interest prior to the election.

If you would like to learn more about any Board position, please feel free to call the Board member who currently holds that position. (See the back cover of the *Wren•dition* for Board members' contact information).

Arizona Arthropods Posters

Biologist, artist, and photographer, Margarethe Brummermann, draws attention to arthropods with some new stunning photography collages. So far, she has produced three posters: Beetles of Arizona, Arachnids of Arizona, and True Bugs of Arizona. Each poster measures 18 by 24 inches and costs $20 plus shipping. A black and white template with numbered silhouettes and corresponding species list comes with each poster. Order from Margarethe at mbrummermann@comcast.net and learn more at her blog: http://arizonabeetlesbugsbirdsandmore.blogspot.com

Sandhill Crane Webcam and more to come...

Can't visit Whitewater Draw to see the Sandhill Cranes? No problem. Arizona Game and Fish now has a webcam set up so you can view and hear the cranes at: https://www.azgfd.com/wildlife/viewing/sandhillcranes/cranecam/ The camera will be available through March or early April when the cranes leave for their nesting grounds far to the north.

Soon, the Arizona Game and Fish website will include a webcam on a Peregrine Falcon nest atop the Maricopa County Administration Building in downtown Phoenix.

Christmas Bird Count Memories from Sycamore Canyon

By Larry Langstaff

Elegant Trogon. Photo by Rich Hoyer

Two Golden Eagles sailed along the ridgeline, giving me the best view I've ever had of them, playing in the wind, comfortable in their own territory. In Sycamore Canyon, the sycamore leaves had turned rusty red, held up by white, smooth-barked branches. Other trees had turned yellow: Arizona walnut, Arizona ash, and willow. A mostly overcast sky concealed the sun. The wind was still.

It was late December 2012, when John Jung, his sons Kendon and Colin, and I traveled to the Atascosa Highlands Christmas Bird Count area, to meet John Reuland, from northeast Tucson, to search for birds in Lower Sycamore Canyon.

At the campground near Peña Blanca Lake we enjoyed a campfire. Next morning, when it was still dark, we met John R. but had to drive for an hour to the area we would begin birding. We took a side road off the road to Ruby, Arizona, a historic mining town about eight miles north of the Mexican border.

My Suburban provided adequate clearance as we drove out of a wash and up a rocky ridge, to park beside a mesquite tree. We checked two stock tanks, Border Tank and Hidden Tank, for ducks. We found Vesper, Black-chinned and Chipping Sparrows and four duck species in the first half hour. Rock and Canyon Wrens called here and around us almost all day long.

We returned to our rig and checked our supplies for the day ahead. I took a windbreaker, and wore two long-sleeved shirts. I took my *Sibley Field Guide to Birds of Western North America*, granola bars, 4 liters of Powerade, a head lamp in case we needed it for the return, and some survival items. I wore my Steiner 10 x 50 binoculars, a baseball cap, tough ragged jeans that I usually wear when I am fixing a barbed wire fence, and light-weight Gore-Tex hiking boots.

The route to reach Sycamore Canyon Wilderness (a US Forest Service Research Area) took us through upper Sonoran desert/grassland habitat. Plants included mesquite, sotol, beargrass, yucca, cholla, agave, catclaw acacia, and barrel cactus. A Red-tailed Hawk perched on a rocky outcrop. Among oaks, mesquites, and junipers on a hillside, we identified Pyrrhuloxia, Canyon Towhee, Green-tailed Towhee, Vesper Sparrows, and many Chipping Sparrows.

John R. imitated a screech owl call as we descended the trail through tall grass. I saw one bird low in a bush, which I

Five-striped Sparrow. Photo by Rich Hoyer

Black Phoebe. Photo by Vicki Hire

described to my friends as having black and white stripes on the side of its face and the throat with a white wide stripe under its chin. As it turned sideways, I saw its reddish back. It hopped out of sight. I slowly walked toward it a few steps, while the others waited with binoculars to confirm what I had seen. They saw it fly up once, but it immediately dove down into the bush and that was the last we saw of it. We left without harassing it further. I realized I was very lucky to have just seen a Five-striped Sparrow!

Down in the canyon, we walked across the creek-bed, which had more water in it than during the last two Christmas Bird Counts that John R. had done here. Stepping-stones helped us cross shallow water and we circumnavigated deeper pools to keep our feet dry.

I went to investigate what I thought was a woodpecker, when I thought I heard John J. and Kendon mention "trogon." Trogons are parrot-colored birds that usually nest in a hole in a sycamore. Elegant Trogons are more often seen in the mountains of Mexico and Central America but are also found in canyons along the southern Arizona border. John J. had spotted one perched in the shade on the branch of a mesquite tree, near a clump of fruit-

Epiphytes on juniper. Photo by Kendon Jung

bearing hackberry trees. Off it flew, but not far. John R. imitated its calls and it flew back over us twice. I got a chance to see it for 10 seconds with my binoculars. The trogon showed grayish green feathers, with a pinkish-red belly patch. John R. saw a streak of white feathers on its head, indicating it was a female.

We rock-hopped up the smaller Tonto Canyon, picking up Ruby-crowned Kinglets and a Black Phoebe. We heard and saw Black Phoebes often, over the water in the canyons. In a spot of wet sand, we discovered a four-toed mammal track, about four inches across: a bobcat track.

Once we reached the canyon bottom, we agreed to take 10 minutes for lunch. It turned out to be a two-minute break, because John R. had walked across the wash and discovered a bird in an oak tree he thought was a Black-throated Gray Warbler. I joined him and found the characteristic yellow patch of feathers on the forehead of the bird. We spotted Yellow-rumped Warblers and Bridled Titmice in the same tree. A rock squirrel scurried across the rocks in front of us, stopped, and turned to watch us.

As we walked along a narrow shady stretch, and I looked over to the nearest juniper, I was thrilled to see epiphytes. Clumps of grayish, thin, needle-like leaves spread out along the bare tree branches. This Sycamore Canyon is one of only two locations in Arizona where epiphytes grow. (They also grow on oak trees in Flux Canyon, south of Patagonia, AZ). Epiphytes are plants that grow harmlessly on other plants. They are often known as air plants because they have no attachment to the ground; they obtain water and nutrients from rain and from debris that accumulates on their supporting plants. Having learned about them in college and knowing for thirty years that they grew there and finally seeing them – such a rare plant in Arizona – was a kick! We saw more, mostly on juniper branches, over the next couple of miles in the canyon.

John R.'s GPS device guided our return trip. I stopped to look back down into Sycamore Canyon to marvel at the scenery. Rusty-red leaved sycamores marked the wet canyon bottom. Rocky, brushy hillsides followed one another off into the distance.

John R. calculated we had walked 11.3 miles since 7:45 am. It was 5:20 pm when we got back to the rig. I was anxious to move up California Gulch in the daylight, because I worried a little about my two-wheel drive Suburban conquering two spots. The careful path I carved up the track meant we drove out without needing a towrope, jack or a push. We slowly plowed through a few deep puddles, before hitting the main road just before darkness. Ninety minutes later, back at the campground, we shook hands goodbye with John R., hoping to bird together again some day. The paved road that leads from Peña Blanca Lake to the Interstate south of Tucson would take us another 30 minutes to drive. Where some bigger-than-fist-size rocks were strewn across the road, I swerved to avoid them snagging the chain connecting the trailer I was pulling behind the Suburban. From the back seat, Kendon yelled "skunk!" in the middle of our reflect-on the-day-conversation, and I caught my breath as an adult striped skunk turned and headed back off the edge of the road. That was the closest I have ever come to hitting a skunk. It would have been an unpleasant three-hour trip back to Tempe if I had!

Larry Langstaff is MAS Field Trip Chair and a retired junior high science teacher from the Mesa School District.

The Big Sit!

By Thomas Partel

Vermilion Flycatcher Photo by Pete Moulton

Here's a recap of the 19th Annual Kathryn F. Anderson Herbert S. Fibel Granite Reef Asterisks Big Sit! Whew, was that a mouthful… Five hearty souls were up and in position at the Tonto National Forest's Granite Reef Dam site before the sun rose so we could hear the first birds of the day: a Killdeer and a Great Horned Owl calling from across the water.

In 2013, the Big Sit! was held at the Ranch at Rio Verde due to the closure of government facilities. 2014 saw the passing of our Big Sit! leader Herb Fibel and the Big Sit! did not occur. We were happy to resurrect the Big Sit! for 2015 on October 11, at the original location (it began 17 years ago) – Granite Reef Dam. The team consisted of Tom and Rosalinda Partel, Cynthia Donald, Pete Moulton, and our newbie, Elias Esquer.

The day was warmer than for Big Sits of the past. In the morning: 71 degrees Fahrenheit with a high of 96 at the end of our day. We were at the site from about 5:30 am to 3:30 pm sitting in a 17' diameter circle searching the river and beautiful riparian surroundings for any flying or sedentary birds to come into our view.

We met a young family out for a walk with a young son of 6-8 years old. They had just moved from Chicago and were loving the warm weather. The boy was enthralled with the Vermilion Flycatcher and asked Tom about it. The boy had a piece of paper and asked Tom to help him spell the name of this beautiful bright red bird so he could do more research on it. Yeah! Possible future birder?

With the goal of making Herb proud, we wanted to exceed our last tally of 42 species at this site. A number of species did not make an appearance this year. We did not observe a Bald Eagle and saw no cormorants, and surprisingly no ducks. Did this have anything to do with the warm weather and climate change, perhaps?

We did rally from our circle of birding to see a total of 52 species. We raised over $850 for Apache Stronghold (www.apache-stronghold.com) and its efforts to save Oak Flat.

Elias voiced his enjoyment of this new birding adventure of sitting in a circle with birding enthusiasts of old. A good time was had by all as we shared old memories and jokes and of course, the birding. What is the saying? "A bad day birding is better than a good day in the office!" Later this year, for our 2016 Big Sit! we hope to have more bird enthusiasts come join our circle of friends.

Tom Partel has been a member of MAS since 1976! He enjoys the Big Sit! and has participated for at least eight years. He works as a Quality Engineer at General Dynamics; other than that it's all about the birds!

Great Blue Heron

By Jasper Robinson

Posing himself enchantingly
A picture of such gallantry
Preening himself winsomely
Moving with such pleasantry
Such large and regal birds
Captivating and entrancing
Watching birders he's romancing
Moving as if he is dancing
Fiercely he's stretching and prancing
Quite territorial

Great Blue Heron. Photo by Jasper Robinson

A few weeks ago at Gilbert Riparian Preserve, I observed a beautiful Great Blue Heron stretching and preening himself. It was almost as if he was dancing through various graceful poses and movements. At times he was curled up and preening, and at other points as he noticed my presence, he stretched out his wings and stretched one of his legs backwards. Each movement was special to behold. Curious as to why he posed in these ways I did some research.

James A. Kushlan wrote an article on the courtship and feeding habits of herons. He explains that herons are territorial and pose in specific ways to defend their territory and nests. The Snap is a typical heron display in which the heron moves its head forwards and downwards. In this pose, the neck is extended out, and the beak snaps shut while the legs are bent. I was able to witness this series of movements with the heron I was observing. While preening, herons often pose in interesting ways. The display I observed was the Wing Touch. This is where the heron brings its neck and head forward until it is arched under its chest. The neck and head then move under the wings. I felt lucky to witness these Great Blue Heron displays.

Reference: Kushlan, J. A. 2011. The terminology of courtship, nesting, feeding and maintenance in herons. [online] www.HeronConservation.org

Jasper Robinson is 23 years old and recently graduated from ASU with her Master's degree in Environmental Technology Management.

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

COPS

By Mark Horlings

The MAS Conservation Committee recently evaluated two projects proposing to reopen damaged public lands, requiring assessment, in particular, of the need for increased law enforcement. Everyone hopes recreational use of the public lands will be free and unfettered. In Western lands, backpackers, birdwatchers, sportsmen, and OHV (Off Highway Vehicle) drivers prefer to move through the public lands free from crowds and free to choose their own pace and route. After public lands have been closed due to recreational damage, however, reopening presupposes meaningful changes to prevent a second round of injury.

A 2007 survey in the Sonoran Desert National Monument, which straddles Interstate 8 near Gila Bend, noted extensive damage from OHV and other traffic. In 2008, the Bureau of Land Management closed more than 30 miles of road, and restricted OHV traffic in other areas. In the Tonto National Forest, Cave Creek District, the Forest Service closed one OHV area north of Bartlett Dam Highway because improper use had damaged vegetation. Public access to thousands of acres was lost.

After some time to allow natural re-vegetation, the federal agencies now propose to reopen closed roads (in the National Monument) and closed OHV trails (in both), and to build new campgrounds (in the National Monument) and new parking areas (in both). Hundreds of acres of degraded areas will be replanted with native species. Kiosks, pipe fences, and instruction books emphasizing camp cleanliness and proper OHV use seek to limit future damage.

The written plans offered for public comment in the National Monument and National Forest do not mention additional rangers or more frequent law enforcement patrols. Inquiries about the possibility of more law enforcement in the reopened areas produce blank stares, or references to camper and OHV operator education and budget reality.

Fans of Lt. Joe Leaphorn know the dilemmas of Western law enforcement: great distances, difficult communications, and rare opportunities for backup. Gasoline becomes a major budget item, and suspects routinely carry guns. (Game wardens, not urban cops, are the law enforcement specialists most likely to die on the job.) Recreational users expect rangers to be rare and forgiving.

The BLM and Forest Service may, in our view, naively rely on OHV operator education and informational kiosks to change behavior. However, the agencies undoubtedly have a keen sense of their agencies' budget realities.

Agency budgets need to change to ensure that public lands thrive. Conservationists should encourage adequate staffing of the West's public lands, including more robust law enforcement.

Footnote: Focus on law enforcement on public lands seems guaranteed since the January occupation at the Malheur National Wildlife Refuge. Malheur's buildings were empty when the militants arrived, closed for the New Year's holiday. Other sponsors of trouble have probably noticed the ease of entry onto public land and the attention available after its takeover.

Occupiers have been arrested: for felon in possession of a firearm and for driving trucks taken from the Refuge, but not yet for the occupation itself. Oregon's Audubon chapters have sponsored "Rallies for Malheur" in several Oregon cities. As of this writing, a resolution is uncertain.

Mark Horlings is MAS Conservation Chair.

In Memoriam
Tom Danielsen
August 24, 1935 – November 1, 2015

It is with sadness that I write about the loss of our good friend. Tom was a member of Maricopa Audubon for almost 50 years. He served as the Conservation Chairman from 1974 to 1976 and was a member of the Conservation Committee for the last year of his life.

Tom moved to Arizona from New Jersey in the early sixties to begin teaching biology at Phoenix College. While there he led the Geology Club, and during his summers worked as a seasonal ranger at Bryce Canyon National Park.

After retiring from teaching, his love of the outdoors and prehistoric southwest Indian cultures led him to a photographic career that lasted more than 30 years. He became one of the principal photographers for *Arizona Highways*, as well as a contributor to other publications such as *National Geographic*. His stunning photographs of southwest Indian ruins graced the pages of many calendars over the years.

He and Bob Witzeman enjoyed birding together and spent many Christmas Counts birding together at Fort McDowell.

His kindness, his enthusiasm, and his friendship are sorely missed.

By Janet Witzeman

Tom Danielsen (r) birding with Bob Witzeman in Peru, July 2010. Photo by Barbara Danielsen

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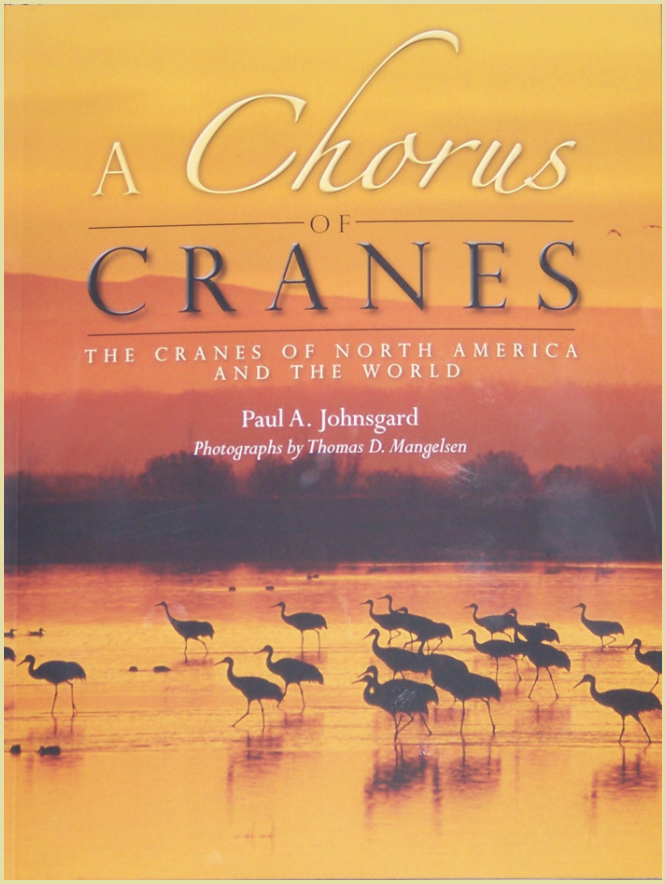
Do enjoy reading *The Cactus Wren•dition*? Are you a "Friend of Maricopa Audubon?" Or have you renewed your membership this year? Please support Maricopa Audubon by becoming a Friend. Please see the back page of *The Cactus Wren•dition* for full details. Your contribution will help fund the publication of the *Wren•dition*. Thank you for your support!

Book Review

By David Chorlton

A Chorus Of Cranes: The Cranes of North America and the World, by Paul A. Johnsgard with photographs by Thomas D. Mangelsen. University Press of Colorado, 2015, 208 pp., $29.95 paperback, ISBN 978-1-60732-436-2



Cranes "... are here in part to remind us that there should always exist a few wild places on earth where only very special animals can survive." This sentiment rounds out Paul Johnsgard's opening chapter, in which he moves from an account of the mythological dimension in cranes' history, especially as it was of importance to the Greeks, through a scientific account of the birds' active lives in the present day.

With the generous 12 by 9 inch format in a lush presentation, the thoroughness of the writing is balanced with Thomas Mangelsen's atmospheric photographs. If you have ever been fortunate enough to see a flock of cranes arriving in their winter habitat, this book will be a welcome source of background as to how they got to where you encountered them, and much more.

The second section is devoted to a more detailed study of the North American cranes, the Sandhill and Whooping Cranes. The birds we might see in southeastern Arizona are the smallest subspecies (Lesser Sandhill Crane) and have the relatively longest wings of sandhill populations. Their migration is also the longest, stretching 4,000 miles to northeastern Siberia.

Much attention is given to the importance of the Platte River Valley for Sandhill Cranes, close to half a million of which arrive there by late March. Still, there is a stark reminder of how difficult a landscape's changes can make the birds' lives: "Today the Platte River consists of no more than 30 percent of its historic flows, and its width has been reduced by at least 80 percent, from the combined efforts of eight dams on the North Platte tributary and twenty on the South Platte."

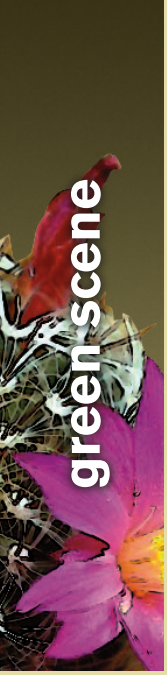
Cranes depend greatly on the presence of refuges, such as the Bosque del Apache National Wildlife Refuge, south of Albuquerque. Hunting takes a toll of about 40,000 cranes a year, but the population manages a small increase in spite of this. The author asks the relevant question of why US and Canadian wildlife administrators assess the so-called "recreational" benefits of killing Sandhill Cranes over the value of viewing for aesthetic enjoyment. He compares the economic benefits of watching birds favorably with the receipts from bird-hunting stamps.

With Whooping Cranes, we have not only behavioral information but also the ongoing story of the work to save the species from extinction, one that reads as a fusion of science and a thriller. When Europeans first came to this continent, the population was estimated at no more than 2,000. In 1941, a mere fourteen adults and two juveniles returned to Aransas National Wildlife Refuge on the Gulf Coast of Texas. that being the numerical low. By 2008, thanks to imaginative and conscientious human efforts the population was up to 283 cranes. Tense as the situation remains, bringing Whooping Cranes back from the brink gives us cause for hope.

Each of the thirteen species of Old World cranes receives a more cursory description and illustrations here are simple drawings. The most threatened crane is the Siberian, reduced now to a breeding flock in northern Yakutia. Yes, you'll have to work to locate that but the longitude and latitude are indicated in the text to make it easier! Compared to the richness of words and pictures dedicated to the two New World cranes, this section is a bit of a tease even as it does lay a foundation to get to know the health and habits of cranes worldwide.

The book emphasizes the delicate balance of the fate of cranes and works hard to make us care enough to encourage even greater efforts to ensure that the birds never become purely the stuff of mythology and are always there to add their elegance to the natural world.

David Chorlton is a poet and bird enthusiast, whose books include The Porous Desert *and* Waiting for the Quetzal. *As a transplanted European, he has become ever more enamored of the Southwest landscape and its wildlife.*



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

Compiled by Vicki Hire

Ferruginous Hawk Photo by Vicki Hire

Green Scene Go Take a Hike

Take your friends and family and a picnic to PAPAGO PARK located at 625 N. Galvin Parkway, Phoenix, Arizona. Smooth hiking trails with little elevation gain are great for family hikes and seeing desert birds and animals in Maricopa County in the city. Send your photos to editor.wrendition@yahoo.com

Green Scene Beginner Birding Tips

If you find a baby bird on the ground:

- Leave the bird alone. Its parents will find it and feed it on the ground until it can fly.
- Keep your pets away from it.
- If it is unable to walk, or if it is sick or injured, call a wildlife rehabilitator such as:
  Liberty Wildlife, Scottsdale, Arizona 480 998-5550
  Fallen Feathers, Peoria, Arizona 623 533-2348

Green Scene True or False?

T F 1. Bald Eagles are only found in North America.
T F 2. Vultures are raptors.
T F 3. Peregrine Falcons are among the fastest animals on Earth.
T F 4. The Red-tailed Hawk is the most common raptor in North America.
T F 5. It is unlawful to keep a feather from a raptor.

Green Scene School Projects

If you would like to apply to the MAS Education Committee for funding for a school natural history project or field trip, please contact Carol Langdon at clangdon2@cox.net

Have your bird or nature photo published in Green Scene and on the Maricopa Audubon Society Facebook page! For readers under 18 years of age, submit your photos to editor.wrendition@yahoo.com, along with your name and age. Include a brief description of where and when you took the photo. It's OK if you aren't sure what species the bird is – just say so and we will ask our readers to help!

Guess this Bird!

Clue: This desert bird prefers a saguaro cactus as a safe place to lay its eggs and raise its young.

Answers on page 19

Photos by Vicki Hire

Gwainson's Hawk

Golden Eagle

Barn Owl

The Raptor Factor — What makes a Raptor?

Did you know Four things that make a raptor a raptor are 1) sharp eyesight; 2) a strong hooked beak for tearing food; 3) strong feet and toes for holding prey; 4) sharp talons for catching or killing prey. The word raptor is from the Latin word rapere, which means to seize or take by force. Raptors are also known as "birds of prey."

Did you know A female raptor is sometimes twice as big as the male of its species. Raptor nests are constructed from sticks in tall trees, on cliffs, and sometimes on utility poles. Raptors often use the same nest year after year causing the nests to grow larger each year. The largest Bald Eagle nest was found in Florida and measured 9 ½ feet wide and 20 feet deep and was estimated to weigh more than 4,000 pounds.[1]

Did you know Raptors communicate with simple calls such as harsh, high-pitched screams, cries, or whistles. They have good hearing and excellent vision. A Bald Eagle can see forward and to the side at the same time, and can spot a running rabbit from almost a mile away.

Did you know Falcons and owls are raptors, too. Falcons are the smallest and fastest group of raptors, with pointed, angled wings. Arizona is home to several falcons and owls. For example:

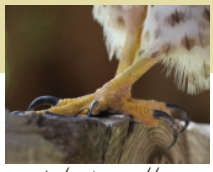
- American Kestrel
- Barn Owl
- Merlin
- Burrowing Owl
- Peregrine Falcon
- Great Horned Owl

Did you know You can see many species of raptors in Arizona. Maybe you have seen, heard, or photographed one or more of these?

- Bald Eagle
- Northern Harrier
- Osprey
- Cooper's Hawk
- Red-tailed Hawk
- Golden Eagle
- Sharp-shinned Hawk
- Turkey Vulture
- Harris's Hawk

For more information on raptors, check out these websites:
https://azgfdportal.az.gov/wildlife/livingwith/raptors/
https://www.allaboutbirds.org/search/?q=raptors

[1] http://www.guinnessworldrecords.com/world-records/largest-birds-nest



Talons. Photo by Matt VanWallene

Across

1. This is the most common raptor in North America
2. The smallest and fastest of the raptors
3. These raptors like to hunt at night
4. These raptors eat carrion, or dead animals
5. These raptors are found only in North America
6. This falcon is considered one of the fastest animals on the planet
7. Fly or rise high in the air
8. An animal that is hunted for food

Down

1. Another name for raptors
2. Raptors use these for catching or killing prey
3. The largest one of these weighed over 4,000 pounds
4. It is illegal to keep one that belonged to a raptor

Answers to the Raptor Factor crossword puzzle on page 19

Maricopa County Winter Visitors

By Matt VanWallene

All photos by Matt VanWallene

Male (gray) and Female (brown) Northern Harriers discussing a meal

Winter visitors are an important part of the Valley of the Sun economy. Bird lovers also get a great influx of winter visitors in the form of raptors. As you can see in the bar chart from eBird, six raptors (White-tailed Kite, Sharp-shinned Hawk, Crested Caracara, Merlin, Red-shouldered Hawk, and Ferruginous Hawk) winter here. Winter visitors also augment nine other raptors' local populations. The Peregrine Falcon and Northern Harrier can travel the farthest on migration as both of their territories include land within the Arctic Circle.

Cooper's Hawk in my backyard

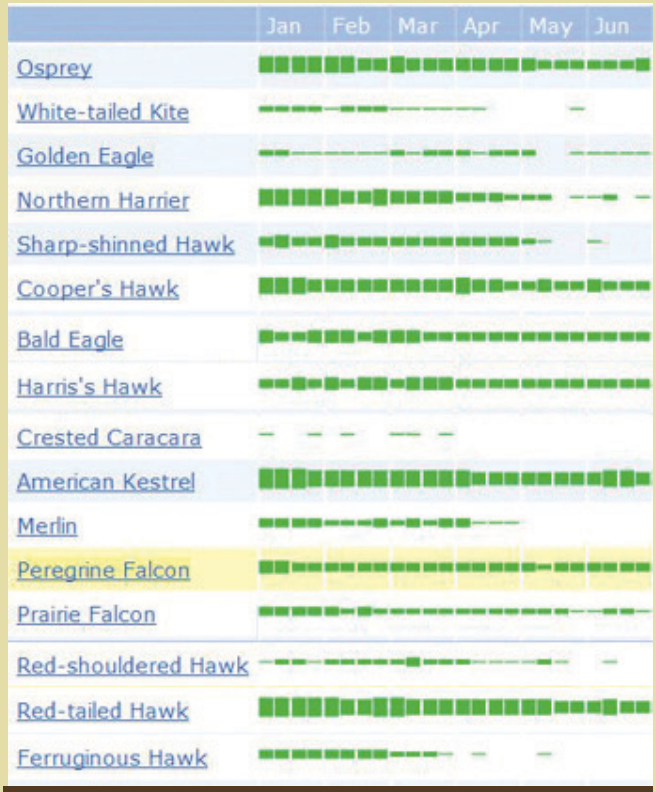
The southeast valley has a patchwork of agricultural fields where these winter visitors hunt. If you look carefully (please pull far off the road), you will find some hotspots that are really entertaining. I found 11 raptors in just one location in one week's viewing and in a single morning saw six Northern Harriers.

These raptors bring a challenge and/or excitement to backyard birders too. Having a Cooper's Hawk sitting in your birdbath just a few feet from your window gives you an instant shot of adrenaline.

All of the pictures in this article were taken in my yard or within the Chandler/Gilbert city limits.

Juvenile Harris's Hawk in my front yard

Matt VanWallene is MAS Treasurer and a retired CPA. To subscribe to his newsletter, send a request to zoutedrop@gmail.com



I compiled this from eBird data charts, available at ebird.org. The bar height represents the chance that you can see a bird in a specific location. The bigger the bar, the more chance you have of seeing the bird.

This chart is based on ebird sightings reported by birders in Maricopa County. The green bars show the chance a species can be seen in a particular month. The thicker the green bar, the more birds of a particular species birders reported seeing.

For example, look at the highlighted Peregrine Falcon. It is present in fairly constant numbers but the numbers are higher in January. The size of the bar is twice as large in the first two weeks of January. This means that while this species is always present, migrants (winter visitors) augment the resident population.

Compare the Merlin: it is a winter visitor and has usually migrated north by the end of April. The American Kestrel and Red-tailed Hawk are the species you are most likely to see over the entire January-June period but they too are present in increased numbers during winter.

Merlin in flight

Peregrine Falcon, Val Vista agricultural field

Ferruginous Hawk, Veteran's Oasis Park

Soaring with Arizona Wildlife Resource: Raptor Platforms and Nest Boxes

By Vicki Hire

If you build it – they will come! Sounds like a scene from a movie, but that's exactly what Valerie Motyka, founder of Arizona Wildlife Resource told her first client - and, in fact, the owls did come! With eight structures, six nesting pairs produced twenty-one Barn Owls within just months of the first installation.

It seems fitting that my meeting with Valerie took place at Skydive Arizona, where skydivers were swooping and enjoying the same view as the raptors. This location is where Arizona Wildlife Resource completed its first installation of raptor platforms and owl nesting boxes, and Valerie wanted to show and tell how she got started and what she has learned in the year since she founded Arizona Wildlife Resource.

Volunteers Steve Curtis, Dave Linkiewicz, and Ed Varley installing a hunting perch at Skydive Arizona. This was originally installed as a nesting platform until Valerie learned it was not tall enough and has no shade; raptors use it regularly from which to hunt, however. Photo by Valerie Motyka.

Ground squirrel burrows in the fields at Skydive Arizona were a hazard for skydivers and a liability. The new manager was using rat poison as a solution to the rodent problem. Valerie knew the location, with its grass landings, irrigation, and ponds, was a huge food source for raptors and she recognized that raptors would die if the owners continued to put down poison. Most rat poison accumulates in the liver of the rodent and gets passed to birds and animals that eat it. Valerie convinced the manager to stop using poison in exchange for the free installation of raptor platforms and nest boxes.

As the founder of Arizona Wildlife Resource, Valerie's passion is to provide preventative applications to help decrease the demand for volunteer-run rehabilitation centers, working as an extension to their efforts, and promising to provide educational resources to the public on how people can make a positive impact on their environment.

To provide a durable nesting box, adult volunteers and boy scouts assemble owl nest boxes using wood screws and glue. Photo by Jennifer Goodman.

In December 2014, with the generous donations of materials, Eagle Scout troops doing the assembly, and volunteers installing the platforms and nest boxes, Valerie successfully launched Arizona Wildlife Resource. For installations, she receives help through University of Arizona Cooperative Extension in Pinal County, and from Americorps NCCC volunteers, as well as many members within the skydiving community.

"Barn Owls are non-territorial and can have large families if they have food sources and the space available," says Valerie. "Depending on the size of the rodent, each owl eats two to three rodents per day and a family of Barn Owls can eat over 70 rodents a week."

She adds: "One owl can eat 1,000 rodents in a year, but it only takes one poisoned rodent to kill an entire nesting family of raptors. Not only is the poison also a hazard to domestic pets and children, the rodents come back faster when poisons are used because there are fewer predators."

The raptor population has increased since the birds now have a clean food source to eat and the community is becoming engaged after seeing the additional activity that the platforms and nest boxes have attracted. People quite often report to Valerie about this bird or that hawk that they have seen perched on one of the platforms. The owl pellets and raptor mutes (whitewash) visible at the base of the nest box poles provide more evidence of her success.

Since nesting structures can be taken over by bees, Valerie prefers to do the installations in October, November, and December when bee swarms are at their lowest and owls are looking for places to nest. If owls find a box first, there is a minimal risk of bees occupying it. Owls occupy their cavity structures for roosting as well as nesting. When owls move into their "forever" home, just like us, they will stay for as long as they feel comfortable. "We have yet to see any bees take over an active structure," explains Valerie. "Bees will occupy only empty structures that owls have not yet used. Bees also leave behind a pheromone, which attracts more bees even after you remove them. So once bees invade the box, I can't reuse it and that portion of the structure must be replaced with new material. I work closely with local beekeepers to ensure the safety of the public and the bees. Bees are relocated to more suitable areas unharmed."

Since hawks prefer to nest at a height of 40-50 feet, and currently Valerie can only build to 20 feet high, she doesn't expect any hawks to nest at the Skydive Arizona location. Hawks regularly use the platforms from which to hunt,

The community comes together to help Tregor Goodman of Troop 594 complete his Eagle Scout project by priming and painting 34 barn owl boxes. Photo by Jennifer Goodman.

however, and that's enough to keep Valerie motivated. Each nesting structure is built with shade to protect the owls from overheating and is installed near a tree that acts as additional shade and protection, so when the owlets begin to fledge they have something on which to branch, and brush in which they can hide. The boxes are also designed with a particular perch that allows only certain sized owls in and helps keep predator animals out.

Ideally Valerie likes to install boxes in agricultural areas, but has done installations in both commercial and residential locations. Recently she installed a Barn Owl nesting structure in Pinal County as a surprise birthday present from a daughter to her mother.

Valerie stresses that she can't do it alone, and credits her success thus far to the many volunteers who contribute to her

Nest Box Perch. Photo by Vicki Hire

organization. Tregor Goodman of Eagle Scout Troop 594 built and painted thirty-four nesting boxes, with Valerie adding the shade afterwards. The Stella-Jones wood treating facility in Eloy, Arizona donated the poles and she has received a tremendous amount of support installing the poles and maintaining the boxes. But Valerie is quickly running out of supplies and hopes that individuals or organizations looking for volunteer projects will consider contributing to her efforts either with donations of materials or by offering construction and installation services.

In addition to her day job doing vision and hearing screening for the University of Arizona, Valerie volunteers at several

Valerie Motyka at an installation at the Future Forward Foundation Garden, Florence, AZ. Photo by Russell Freeman.

wildlife rehabilitation organizations, each of which caters to the specific needs of different wildlife: Wild At Heart in Cave Creek specializes in raptors and has been working to provide nesting structures for all species of owls since 1989: WildWing Rehabilitation in Ahwatukee specializes in hard-to-rehab songbirds such as hummingbirds, swifts, swallows, and flycatchers; and Arizona Covey in Scottsdale focuses on the rehabilitation of quail and Killdeer. Valerie also assists Liberty Wildlife with emergency calls and rescue transport. "When finding an injured bird, it's key to get the bird to the correct place, as different species can require different treatment," says Valerie. She's the only volunteer transporter for wildlife emergencies in Pinal County that she knows of, and would love to see more community support because emergency transport assistance is greatly lacking.

As we end the interview at Skydive Arizona, where people are learning how to fly their bodies in the indoor skydiving wind tunnel (SkyVenture Arizona) before they prepare to skydive on their own, Valerie laughs and says, "now they refer to the wind tunnel as the bird's nest." A fitting example of how one individual can make a difference!

Looking for a place to volunteer?
Visit Arizona Wildlife Resource at
http://www.arizonawildliferesource.org
and on Facebook:
https://www.facebook.com/Arizonawildliferesource/?fref=ts
Read more about creating a safer environment at:
https://www.audubon.org/news/mouse

Vicki Hire is an accountant at Amkor Technology and serves as MAS Publicity Chair.

The Case of the Missing Yucca Moth

By Tom Gatz

Moths are the Rodney Dangerfields of the insect world. They get no respect. Although there are ten times more kinds of moths than there are of butterflies, it is the rare person who has ever bought a field guide to the moths. They have a mostly negative image often associated with acrid-smelling mothballs and ruined woolen sweaters. When we think of insects that pollinate flowering plants, beautiful butterflies and industrious bees come to mind.

Other much less glamorous insects are also important pollinators, however. Moths pollinate many plants, including the sacred datura, all of the yuccas, as well as several species of night-blooming cacti.

Perhaps equally low on the lovable insect scale are the unheralded beetles that are responsible for pollinating almost 90 percent of the world's flowering plants. When asked what he could say about the Creator from his study of nature, biologist JBS Haldane replied, "He must have an inordinate fondness for beetles." This comment was driven by the fact that there are almost as many described species of beetles as all the rest of the insects put together, about 350,000 known species and still counting. So don't be too quick with that bug spray the next time you see something crawling toward your plants because many of our favorite flowering plants and important food crops depend on these under-appreciated and, in recent years, often declining insect pollinators.

Yucca Moth pollinating June 23 2008 Columbus Ohio
Photo by Robert Klips

We city dwellers sometimes forget that all fruit, whether on yucca plants or on apple trees, started out as yucca flowers or apple flowers that needed to be pollinated. Many plants display colorful and often scented flowers to attract insects and other pollinators so that their flowers will be pollinated. This leads to the eggs within their flowers being fertilized, thus enabling them to develop into fruits.

The insects benefit by obtaining nectar and pollen for food and, in some cases, they extract chemicals from the flowers that act as sexual lures (sort of like a flowery cologne for insects) to attract mates. The colorful and often sweet fruits in turn attract other birds and animals to consume them and transport the seeds in the fruits to new locations, ensuring the spread of the plant species. In essence, the plants use all sorts of tricks including colors, sweeteners, and perfumes to entice birds, bugs and yes, even humans, to do their bidding.

Prior to the 1930s, a natural population of yuccas flourished in Papago Park. In their book *The Forgotten Pollinators* (1996), Stephen Buchmann and Gary Nabhan mention finding old photos of Papago Park showing that banana yuccas (*Yucca baccata)* were once a prominent feature of the natural vegetation. They are not completely sure what happened to them, but along with an increase in development and other human activity, a reduction in natural predators, and the attendant increase in rodents and rabbits, the wild yuccas have disappeared from the park.

Also, in spite of the large number of cultivated yuccas at the Desert Botanical Garden, according to Chad Davis, former Agave and Yucca Horticulturist, only three of them have ever been known to be pollinated, producing a total of only four seed-bearing fruits. How could this be with all the birds, bees, butterflies, and other pollinators around?

It turns out that yuccas have a very specific and almost unique relationship with yucca moths, a species that apparently disappeared from the Phoenix area along with the original wild yuccas in the park. Buchmann and Nabhan speculate that either the yucca moths locally died out as the natural yucca population declined or the current bunch of cultivated yucca blooms at the Garden is still not yet large enough to sustain a viable population of yucca moth larvae.

Unlike many other flowering plants that attract a variety of pollinators, every species of yucca is dependent upon one or more species of yucca moths for pollination, and

the moths need the developing yucca seeds to feed their larvae, a tongue-twisting arrangement known as "obligate pollination mutualism." This tight relationship is rare (only about one percent of all flowering plants have a single obligate pollinator species) since there is obvious peril to such exclusive matchmaking if one of the partners fails to appear.

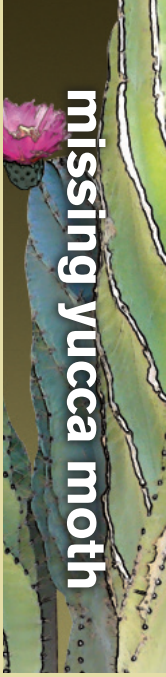
The yucca moth is one of the few known pollinators (the senita moth on the senita cactus is another recently discovered example) that intentionally pollinates a flower for the sole purpose of creating a seed-bearing fruit for its larvae to feed upon. Most insects pollinate flowers inadvertently while crawling around on them while harvesting nectar and pollen to take elsewhere. In exchange for its pollination services, the moth is ensured a supply of nutritious seeds for its voracious larvae developing within the immature fruits. Only a few eggs are laid in each yucca flower ovary, so that only a few of the developing seeds are eaten, ensuring that enough seeds are left to allow the yucca to reproduce.

Researchers have found that if a moth either under-pollinates a yucca flower or over-burdens it with too many moth eggs, the yucca responds by aborting the flower and the moth larvae starve. As a result, natural selection has favored yucca moths that do a good job of pollinating the yucca flowers and that only deposit a few eggs so the abort response is not triggered. Recent research by yucca moth expert Olle Pellmyr and his colleagues have revealed other intriguing insect dramas including the existence of "cheater" moth species. These "cheater moths" don't do any pollinating at all but instead take advantage of the yucca moth's pollination efforts and deposit their own eggs into the already developing yucca fruits. Once the fruits have started to develop, the abort response in the yucca has already been cancelled, enabling the "cheater" moth larvae to survive.

There is a saying that insects will inherit the earth, but people who study them know better. In a recent issue of *Smithsonian* magazine, Clint McFarland observed: "The earth already belongs to the insects…they are in nearly every inch of soil. We wouldn't be here without them--without pollination and decomposition. The earth is theirs. We're just trying to share it for a while."

Acknowledgements: Thanks to John Alcock, Chad Davis, Wendy Hodgson, Barbara Larson, and Ronald Rutowski for helping me with this article.

Tom Gatz has been a MAS member since 1981.



GREEN SCENE
MARICOPA AUDUBON

Green Scene Puzzle Answers

Answers to True or False

1. True. The Bald Eagle is our national symbol and is found only in North America.
2. True. Both the Black Vulture with its black head and the Turkey Vulture with its red head are raptors.
3. True. A Peregrine Falcon was once clocked in a dive at 243 mph.[1]
4. True. Most Red-tailed Hawks, but not all, are a rich brown color with a cinnamon colored tail and a bellyband of dark splotches. You can often find them perched on top of utility poles.
5. True. If you see a feather lying on the ground, don't take it home. It may seem harmless to keep it, but the federal Migratory Bird Treaty Act protects raptors.[2]

1 https://www.desertmuseum.org/visit/raptors.php
2 http://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php

Answer to Guess this Bird

Gila Woodpecker
Lives in the Southwest United States and Mexico. The male has a bright red spot on the top of his head. Gila Woodpeckers drill holes into saguaro cacti. A hole provides a cool and safe place for the female to lay her eggs and the pair to raise their young.

Answers to Raptor Factor crossword puzzle

Across

1. Red-tailed Hawk
2. Falcon
3. Owls
4. Vultures
5. Bald Eagles
6. Peregrine
7. Soar
8. Prey

Down

1. Birds of Prey
2. Talons
3. Bald Eagle nest
4. Feather

Tracking Regal Horned Lizards

By Brian Sullivan

All photos by Brian Sullivan

Buried lizard with tag only showing

Horned lizards are perhaps the most easily recognized lizards of the American Southwest. Often associated with open habitats, they burrow in sandy soils to escape predators and temperature extremes. In decades past, they were collected for the pet trade and suffered significant declines in some areas. The general public finds them attractive and values their continued presence in local landscapes. Evidence for this unusual position for a reptile includes the consistency with which school children recognize them, the retention of the lizards as pets when encountered, and most importantly, the fact that virtually every state in the western US lists one or more horned lizard species as a species of "special concern," or threatened or endangered, and generally precludes or discourages collection. In Arizona, seven different species occur from deserts at almost sea level, to open forests in excess of 10,000 ft. The Regal Horned Lizard, the form you will most likely find on the outskirts of Phoenix, feeds almost exclusively on seed harvester ants. Each lizard potentially consumes hundreds of ants each day and passes large fecal pellets constituting more than a third of the length of the respective lizard.

Historically, in addition to the Regal Horned Lizard, *Phrynosoma solare*, the Desert Horned Lizard, *P. platyrhinos*, also occurred in the vicinity of Phoenix. Recently, scientists established that most interior parks and preserves no longer contain either of these ant-eating specialists. As most any weekend hiker can attest, the Phoenix Mountain Preserves are primarily upland slope habitat (steep, rocky formations) with relatively few washes or expansive flats (alluvial soils with little elevational gradient). Is this all there is to the loss of the horned lizards: habitat change? In some areas, even when preferred habitats are still available, the seed harvester ants are not present, at least not in the numbers they once were. For example, in the 1990s, we regularly encountered both ants and horned lizards on the northern edge of Piestewa Peak Preserve, southwest of the 40th Street entrance to the park. However, since roughly 2000, during our annual visual encounter surveys we have observed neither ants nor lizards in the few acres of flats that remain on the northern edge of the park.

Fecal pellet

On the northern edge of the Phoenix metropolitan area, the Cave Creek floodplain and the Union Hills are protected by the newly formed Sonoran Preserve, and by Cave Buttes, a county flood control area. Together, these preserves comprise all major habitats, including large areas of creosote (*Larrea tridentata*)-bursage (*Ambrosia deltoidea*) flats dominated by fine textured alluvial soils.

One particularly warm fall season, my wife Elizabeth and I observed three hatchling Regal Horned Lizards active from mid-October through the first week of December. These were the first horned lizards we had ever observed active after early October. More significantly, these hatchlings were all seen on the large (~ 1 meter or 39 inches diameter) disks of the primary prey of the adults, Rough Seed Harvester Ants, *Pogonomyrmex rugosus*. Although we did not witness a hatchling capture and consume any ants, it seems reasonable to infer that the hatchlings were preying on ants.

Elizabeth and I recently began radio tracking adult Regal Horned Lizards to learn more about the behavior of individuals, especially with respect to movement patterns. We attached small radio transmitters with waxed thread to their backs, behind the "horns" on their heads. The transmitters must be less than five percent of the lizard's body mass to avoid over-taxing the lizard; the small backpack radio transmitter falls off after six to eight

weeks. When attaching the transmitters, we must avoid "blood-squirting." Horned lizards have a unique anti-predator tactic: they squirt blood from a specially modified orbital sinus. The blood is distasteful to both canid and felid predators, an interesting natural history story worked out by our colleague, Wade Sherbrooke of Tucson.

In the past, horned lizards were categorized as either relatively sedentary or relatively wide-ranging. Regal Horned Lizards, though largest of the Sonoran Desert species (with a maximum size of about 125 millimeters or five inches snout to vent length), were considered a "small home range" species. We discovered that horned lizards at Cave Buttes did not conform to this pattern: during June, the mating season, males moved as much as 400 meters (about a quarter of a mile) in 36 hours. Our radio tracking data showed that males "ping-ponged" back and forth, back and forth, repeatedly moving between two spots (e.g., the same creosote shrubs!). We tentatively concluded that rather than searching for prey, these males were moving over their home range, which overlapped with other males' homes, in search of females.

Hatchling with quarter indicating size

In the fall of 2015 we eagerly anticipated the end of the monsoon season and the corresponding decline in air temperatures–would our adult *P. solare* cease activity by late September? Or, had we simply missed them in previous years as a result of their highly cryptic appearance? Toward the end of September and early October, all five adult males we were tracking had indeed "gone down" (the last by October 3). Each lizard was buried just under the surface near a creosote or bursage shrub (the antenna was sometimes visible). Nonetheless, to our surprise, on more than one occasion, we found an individual (four of the five) that had been inactive for weeks, basking, within one to two feet of its over-wintering site. In all instances, these four individuals returned to virtually the same location (shrub) as occupied previously. Those that were near open shrubs allowing a clear view of the buried lizard and antenna, appeared not to have moved at all–if we had not seen them basking, we would have assumed they had been inactive because each buried itself in the same spot. Unfortunately, only two females retained tags as winter approached, but these individuals both retired later (17 October and 3 November) than the males (26 September to 3 October), and we have not observed them basking.

Courting adults

In spite of their blood squirting behavior, predators killed 25 percent of the lizards we followed during the summer of 2015. We suspect that roadrunners and owls, as well as small mammalian carnivores, have taken some horned lizards at Cave Buttes. Unfortunately, when predation occurs, the remains provide few cues. Based on meager evidence, we think that when kit foxes capture a horned lizard at night (perhaps avoiding the blood squirt?), they consume everything but the radio tag and the lizard's stomach, which is usually filled with ants (we find it next to the tag the next morning!). We hope to discover more about the lives of these unusual lizards in the coming months.

Brian Sullivan is Professor, Adjunct Curator for the Herpetological Collection, and a Senior Sustainability Scholar at Arizona State University.

Learn more about Ectotherms and Endotherms

As ectotherms–organisms that regulate their internal body temperature by exploiting external sources–lizards use sunlight to power their activity. Regal Horned Lizards at Cave Buttes, by shuttling between patches of sun and shade among the creosote shrubs from early May through September, usually keep their body temperatures close to 100F while foraging for ants and avoiding predators. When temperatures become too high, they typically retire to the east side of a creosote or bursage, and burrow just under the surface in the shaded, sandy soil near the base, until the next morning. As the sun warms the soil the following morning, lizards emerge, generally within an hour or two of sunrise.

By contrast, as endotherms, birds and mammals use an internal "physiological furnace" to maintain high, relatively constant body temperatures. Clad in fur or feathers to retain precious, self-generated heat, endotherms can be active under conditions when ectotherms like the Regal Horned Lizard cannot–any time the lizard cannot warm itself sufficiently by basking, for example.

This activity extravagance comes at a cost: the vast majority of prey consumed by endotherm predators is used for temperature regulation–not for growth, activity, or reproduction. As a consequence of "behavioral thermoregulation," that is, by actively using the sun's warmth rather than burning internal energy reserves, lizards require as little as 10 percent of the energy used by a similarly sized endotherm over the same activity period. Ectotherms are the original energy conservationists.

Nature Through the Artist's Eye: Patricia Manarin

Pat Manarin next to Sonoran Desert Doorway on SMCC campus

Patricia Manarin is one of a juried group of 50 artists that make up the Mesa Arts Center Artists Co-op, called TheStore. Artists demonstrate in TheStore and answer questions about what they do.

Award-winning artist Pat holds a Bachelor of Fine Art Degree from the University of Wisconsin-Milwaukee, focusing on Sculpture, and a Master of Art Degree from Governors State University in Illinois. Professor Emerita at at South Mountain Community College (SMCC) in Phoenix, she taught Ceramics, Three Dimensional Design, and Drawing for 30 years.

She installed five large ceramic murals on the SMCC campus (two done along with students) and has been active in the Arizona State University Art Museum Ceramics Research Center's Annual Self-Guided Ceramic Studio Tour. This annual Valley-wide event presents the work of more than 50 professional ceramic artists in the Phoenix metropolitan area.

Pat says: "I have always delighted in the flora and fauna of nature. It has informed my art, my Japanese-inspired garden, and the myriad trips I have taken throughout the country."

Contact Pat at: patmanarin@q.com

Artichoke Cactus Teapot
I am a desert plant enthusiast. After I bought an artichoke cactus, I was so enamored of its beauty, complexity, and sculptural form, it seemed the perfect form for a teapot. One of my favorite structures in nature is the fractal construction. The teapot is wheel-thrown with slab additions.

Cactus Teapot
The inspiration for this teapot comes from the numerous dome-shaped cacti in my yard. I made sprig molds of approximately 12 cacti and attached the pressed pieces onto the thrown teapot shape. I hand-formed the cactus handles. It was a great way to display the variety of forms within one or two species, (mostly from the mammillaria genus).

Horned Lizard and Gecko Teapot
When I moved to Arizona 33 years ago, not only the plant life, but the indigenous animals, so different from Wisconsin fauna, captivated my imagination. I tried to sculpt their unique forms, textures, and spirit. This is one of my favorites.

Gaia (front and back)
Many years ago, I created 16 variations of the female form for my Master of Art exhibition in Illinois. Last year I decided to weave together some of my older ideas with my love of all types of flora. It made sense to sculpt a "Gaia," a mother earth figure. I enjoyed it so much, I am looking forward to combining the figure with animal forms next.

Sonoran Desert Teapot
In this teapot, I combine the beautiful shapes of desert animals against a background of a desert landscape. I carved the forms into the body of the teapot; desert animals became part of the intrinsic elements of the teapot- spout, handle and knob.

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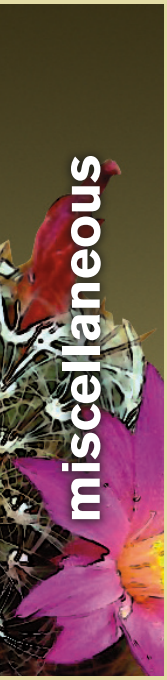

Monthly Meeting
First Tuesday of the month, unless otherwise announced, September through April, 7:30 p.m. Our meeting place is Papago Buttes Church of the Brethren, 2450 N 64th Street, Scottsdale, AZ (northwest of 64th Street and Oak Street, which is between Thomas Road and McDowell).

Please contact a board member if you have any questions, or check out our web site at www.maricopaaudubon.org. Pre-meeting dinners (September through April) are held at Rolling Hills 19th Tee Restaurant, 1405 N. Mill Avenue, starting at 6:00 p.m.

Membership Information
There are two ways to become a Maricopa Audubon member and to receive *The Cactus Wren•dition* by mail:
1. By joining the National Audubon Society. If you live in the Phoenix metro area generally east of 43rd Avenue, or in the East Valley other than in Gilbert, Chandler or most of Mesa, when National Audubon Society receives your check made payable to National Audubon Society and your membership application, you will be assigned to Maricopa Audubon Society, or you can send your check payable to National Audubon Society and your National Audubon Society membership application to Scott Burge, membership chair, and he will send it on in to National Audubon for you, or
2. By becoming a "Friend of Maricopa Audubon". In this case you will become a member of Maricopa Audubon Society only, and you will not receive the Audubon magazine or any of the other "benefits" of National Audubon membership, but you will receive a one-year subscription to *The Cactus Wren•dition*. "Friends" contribution categories are: Anna's Hummingbird-$20; Verdin-$35-$99; LeConte's Thrasher-$100-$249; Cactus Wren-$250-$999; Harris's Hawk-$1,000-$9,999 and California Condor-$10,000+. Mail your Friends membership application and your check made payable to Maricopa Audubon to Scott Burge, membership chair. All "Friends" members receive certain designated discounts. (If you reside outside the above-indicated geographical area, the only way to receive a subscription to *The Cactus Wren•dition* is to become a "Friend".)For National Audubon membership address changes or other questions call (800) 274-4201 or email chadd@audubon.org. For all other membership questions call or email Scott Burge.

Submissions
Copy for *The Cactus Wren•dition* must be received by the editor by e-mail, by January 15, April 1, July 1, and October 1. Articles not received by the deadlines may not appear in the upcoming issue. Email to: *The Cactus Wren•dition* Editor, Gillian Rice: editor.wrendition@yahoo.com

Opinions
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