



# The Cactus Wren·dition

VOLUME LXX NO. 2

FALL - 2024



State Record Curlew Sandpiper  
p. 12

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René Clark

## On the cover

Curlew Sandpiper  
Paloma Ranch  
20 July 2024  
Photograph by Pierre Deviche

## MEETINGS...

We are conducting hybrid meetings, both in-person and via zoom. Links are posted on our website and Facebook page a few days before the meeting. MAS holds meetings (membership is not required) on the first Tuesday of the month, September through April at Papago Buttes Church of the Brethren, 2450 N. 64th Street, Scottsdale. Meetings start at 7:30 PM. Come at 7:00 PM to socialize. Premeeting dinners (September through April) are held at 6:00 PM at Saigon Bowl Restaurant, 8213 E. Roosevelt St., Scottsdale, AZ 85257. The May meeting is our annual banquet.



October 1, 2024

David L Pearson

### **How to Prepare and Plan for an International Birding Trip**

If you are planning a trip to another country for birds, whether to increase your life list, an excuse to see new areas, experience different cultures, or just get a way, there are many details to consider. We will discuss everything from picking an itinerary and choosing a tour company, to packing and selecting a travel insurance that best suits you.

November 5, 2024

Christina Kondrat

### **Bendire's Thrasher Winter and Migratory Movements: Discoveries for Conservation**

Classified as a Species of Greatest Conservation, the Bendire's Thrasher population is expected to decline by another 50% in the next 18 years (Partners in Flight 2019). To better understand the migratory and winter movements of Bendire's Thrashers, the US Fish and Wildlife Service and the AZ Game and Fish Department formed a partnership. Between 2019 and 2022, GPS tags were deployed to 54 birds in different locations across Arizona and New Mexico. The data collected is leading to new insights used for monitoring and conservation strategies.

In her role with the Arizona Game and Fish Department, Chrissy issues scientific research permits for the state's wildlife; assists with the facilitation of Arizona Bird Conservation Initiative monitoring projects; is involved with the management of a new banding station on the Hassayampa River, the MOTUS AZ Network and species-specific projects (such as with Bendire's and Le Conte's Thrashers). Additionally, she enjoys being involved with a number of citizen science projects.

# Announcements

## 28th Annual Herb Fibel Big Sit! Fundraiser

Granite Reef, Tonto National Forest  
SATURDAY, OCTOBER 26, 7-9 am

MAS friends will gather to count bird species seen from a 17' diameter circle at Granite Reef Recreation Area. Funds raised this year will go to Youth Scholarships for the 2025 AZFO annual meeting. The main objective of this event is, and always will be, sitting out in nature with friends, and enjoying not only the wildlife, but the camaraderie, while raising funds for a worthy cause.

**Registration is required.** Contact [kathe.coot@cox.net](mailto:kathe.coot@cox.net). The Big Sit! is officially from 7-9am, but folks can arrive early and stay late. At 9am, we will have snacks, compare notes and make a list. Bring your coffee, breakfast and a snack to share. We'll collect cash or checks onsite (\$10-15 suggested donation). Please make checks payable to "Maricopa Audubon Society" with "Big Sit" on the memo line.

**Help Fund Youth Scholarships!** TO DONATE: Anyone can donate by cash, check or credit card at member meetings, online ([MAS.org/big-sit](https://MAS.org/big-sit) (or scan the QR code) or mail checks payable to Maricopa Audubon Society, P.O. Box 65401, Phoenix, AZ 85082-5401. Write "Big Sit!" in the memo line. Donate a set amount, or per bird species seen (54 is average).



**BONUS!!!** Donate \$25 or more to the Big Sit! and receive a one-year membership to Maricopa Audubon Society. To get your one-year membership when donating by check, please write "Auto Join – Big Sit!" in the memo line and mail to the above address. Please include your mailing address to receive the quarterly Cactus Wren-dition newsletter.

## 2024 ARIZONA FIELD ORNITHOLOGIST & WESTERN BIRD BANDING ASSOCIATION ANNUAL MEETING SEPTEMBER 26 - 29, 2024 TUCSON, AZ



You do not need to be an ornithologist or bird bander to attend- just have a passion for birds! Enjoy meeting like-minded people, learn from presentations and workshops, and participate in field trips.



Visit [AZFO.com](https://AZFO.com) or click on the QR code (right) to register.



**Students** may volunteer in exchange for meeting costs. Contact Chrissy Kondrat [ckondrat@azgfd.gov](mailto:ckondrat@azgfd.gov).

# Committees/Support

Associate Editor Mark Larson  
Poet Laureate David Chorlton

[www.maricopaaudubon.org](http://www.maricopaaudubon.org)

“The most environmentally friendly product is the one you didn't buy.”  
- Joshua Becker

### 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.

Support Maricopa Audubon as part of Fry's Community Rewards Program. Register your Fry's VIP card and select Maricopa Audubon #WW583 as your non-profit organization at no cost to you. Please visit Fry's Community Rewards online or visit your local Fry's to register.



### Sign up for the e-newsletter!

To receive meeting and field trip reminders, etc., subscribe to the monthly (September to May) e-Newsletter.



To subscribe, email:

[MaricopaAudubonaz@gmail.com](mailto:MaricopaAudubonaz@gmail.com)

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

Join or renew your Maricopa Audubon membership



# CONSERVATION UPDATE

by Charles Babbitt



Trees killed from dewatering pile up in Pinto Creek December 2021. Photo by Laurie Nessel.

## PINTO VALLEY MINE

The Maricopa Audubon Society has joined in a 60-day notice of intent to sue the U.S. Forest Service (USFS) and U.S. Fish and Wildlife Service (USFWS) for violations of the Endangered Species Act. The violations result from the USFS approval of the expansion and extension of mining operations at the Pinto Valley Mine near Superior. The mine is dewatering once perennial Pinto Creek destroying critical Western Yellow-billed Cuckoo and Southwestern Willow Flycatcher habitat.

Pinto Creek runs north from the Pinal Mountains for 48 miles before emptying into Lake Roosevelt. Like many southwestern streams that flow through the Sonoran Desert, it sustained a vibrant cottonwood-willow riparian habitat along its course. That all changed in 2013 when the creek began to dry up. The dewatering of the creek and dramatic loss of riparian habitat is a direct result of groundwater pumping by Pinto Valley Mine which has reduced baseflows in the stream. Baseflows are vital to sustaining perennial flows during periods when there is little or no precipitation or runoff. It is estimated that the mine's operation is suppressing baseflows by over 80 percent. With USFS approval of the mine expansion this will continue through 2039.

With probable Supreme Court vacancies in the near future, the election on November 5th could well determine the direction of the Court for years to come.

The USFWS biological opinion concluded that mining activity is not likely to jeopardize the Western Yellow-billed Cuckoo, destroy, or adversely modify its critical habitat or adversely affect the Southwestern Willow Flycatcher. In short, the agencies concluded that the mine could expand and continue operating without harming the cuckoo, flycatcher, or critical habitat.

The 60-day notice argues that the USFWS's biological opinion is illegal for several reasons. Most importantly, it fails to account for the full scope of effects to threatened and endangered species by arbitrarily defining the action area to exclude a perennial reach of Pinto creek which will be dewatered by continued groundwater pumping. The opinion also fails to provide for concrete and enforceable mitigation measures for the Western Yellowbilled Cuckoo and fails to properly analyze climate change effects.

The 60-day notice states that if this situation is not remedied litigation will follow.

## ELECTIONS HAVE CONSEQUENCES

*Loper Bright Enterprises v. Raimondo*

The United States Supreme Court's conservative majority has grown increasingly critical of federal agency power and subject matter expertise used to interpret, write and enforce rules and regulations covering a wide range of governmental and non-governmental activity. Many of these rules and regulations deal directly with the protection of our environment. In *Loper Bright Enterprises v. Raimondo*, the court's antagonism toward

agencies and their subject matter expertise was on full display as it overruled and did away with a 40-year-old legal principle called *Chevron* deference.

The *Chevron* doctrine, decided in 1984, is a rule that required courts to defer to permissible federal agency interpretations when dealing with ambiguous parts of statutes enacted by Congress. Deference is especially important when dealing with statutes of a scientific or technical nature. To interpret and implement them often requires professionals who have a high degree of earned subject matter expertise. In doing away with *Chevron*

deference, the court has, in the words of Justice Kagan, made itself the “administrative czar” of all regulatory matters. The decision is seen as a major victory for polluters, large corporations, extractive industries, developers and other anti-regulatory interests.

*Loper Bright* follows two other major environmental cases where the Supreme Court demonstrated its eagerness to substitute its own judgement for that of federal agencies; *West Virginia v. EPA* - a case which makes it much more difficult for the EPA to regulate CO<sub>2</sub> emissions from fossil-fuel burning plants, and *Sackett v. EPA* - a decision that will make it more difficult for the EPA to protect wetlands (see CW Fall 2023). These decisions perfectly illustrate the old adage that elections have consequences. With probable Supreme Court vacancies in the near future, the election on November 5th could well determine the direction of the Court for years to come.

Before you vote on November 5th take some time to learn the environmental position of candidates up and down the ballot. While Maricopa Audubon Society is prohibited by its 501(C)(3) status from advocating for particular candidates, you can easily go online and find candidates’ environmental positions on Sierra Club and other environmental organization websites.

Vote for the environment on November 5th and encourage others to do so!  
**The stakes could not be higher.**

## 26th Annual Gila River Indian Community Winter Bird Count & Cultural Event 7:00 AM - 1:00 PM

But what date? The Count is being moved to a Friday to allow more participation of the community youth. Please check the GRIC or MAS websites where the date will be posted once it is known. This is a rare opportunity to share your knowledge and joy of birding with the youth (and adults) of the GRIC!

Meet at the location nearest you to receive your field assignment:

11 AM: Cultural Activities Begin

Huhugam Heritage Center 23159 S. Maricopa Rd.  
1 PM: Bird Count Concludes

Visit <https://www.gricdeq.org/winter-bird-count> for more information. Or email David Pearson [dpearson@asu.edu](mailto:dpearson@asu.edu) or Tison Gill [Tison.Gill.DEQ@gric.nsn.us](mailto:Tison.Gill.DEQ@gric.nsn.us)

- 1. Gila River Interpretive Trail (MAR-5)** Olberg Rd. just south of the Gila River Bridge (continuation north of Hi. 187)
- 2. Casa Blanca Chevron Station** ¼ mile west of I-10 off the Exit 175



Photo courtesy of Gila River Broadcasting Corp.

- 3. Komatke Chevron Station** 17197 51st Ave, Laveen Village, AZ 85339 (51st Ave. and W. Pecos Rd)
- 4. D7 Service Center** 8035 S 83rd Ave, Laveen Village, AZ 85339 (W. Baseline and 83rd Ave.)

# Lights Out Maricopa!

## Conserve Energy & Save Birds



Maricopa Audubon Society (MAS) and Desert Rivers Audubon Society (DRAS) have partnered to make Maricopa County safer for birds. Lights Out Maricopa (LOM) is a grant-funded program that motivates building owners and managers to turn off unnecessary lighting. This behavior change reduces power consumption, saves businesses money, and will save birds!

The grant provided by The Center for Behavior and Climate has allowed MAS and DRAS to join the growing movement for Bird-Safe Buildings. Turning off lights at night (flipping the switch) reduces the urban draw for birds, especially during migration—which reduces the incidence of fatal bird collisions with buildings up to 80%.

The program is in full flight. MAS member and ASU student **Alysia Viscanti** designed our LOM logo depicting a hummingbird requesting darkness. Businesses and residents can join the program on our Conservation webpage (<https://www.maricopaaudubon.org/lights-out>) for free.



Join LOM

LOM recognizes the participation of **Cousins Properties**, and the tenants from six Tempe buildings: all four **Hayden Ferry Tower** buildings (Rio Salado Parkway), the **100 Mill** building (100 S. Mill Avenue), and the **Tempe Gateway** building (222 S. Mill Avenue) - have all taken the initiative to protect birds and our climate for future generations. Thank you!



### Would you like to save birds and help our climate?

If so, we want you on the LOM team. Email us to get involved. Please spread the word across the County and motivate businesses to join Lights Out Maricopa and be recognized in our next Wrendition!

#### View the program & progress:

<https://www.maricopaaudubon.org/lights-out>

#### Contact us:

[Lightsoutmaricopa@gmail.com](mailto:Lightsoutmaricopa@gmail.com)

“We are thrilled to participate in the Lights Out program. Turning off non-essential lighting during the bird’s migratory season not only saves us electricity, but we provide a safer passage for night-migrating birds. It’s a win-win for all!”

**Yesenia Felix**  
VICE PRESIDENT, OPERATIONS  
Cousins Properties



## MAS members protect birds from fatal window collisions



Picture window responsible for numerous fatal bird collisions.

**BEFORE:** MAS members Richard and Kristine of Fountain Hills noted birds fatally colliding with their picture window at least monthly.



Window reflection is broken up by 1/2" square netting.

**SOLUTION:** 1/2" square garden netting was attached to the window frame using small adhesive strips (Command™) in each corner and one per side (8 total). The netting, sold at garden centers, can be removed and replaced easily to wash the window.



View of the yard through the window.

**AFTER:** No collisions reported at this window after 6.5 months. One of the side windows did have a fatal collision, so netting was installed there as well.

Thank you Richard and Kristine for sharing your easy and effective solution to help save the birds!





# FIELD TRIPS by Robert Carter

- Participation in field trips risks exposure to infectious diseases. If you have any symptoms of illness or have been exposed to COVID-19, stay home.
- For Tonto National Forest Day Use Passes, visit USDA Tonto Pass.
- MAS encourages carpooling. Please cover your driver's gas at the recommended rate of 10¢ per mile per rider.
- The ABA has adopted principles of birding ethics. Check them online or ask your field trip leader.
- Wear neutral colors and sturdy walking shoes.
- Bring binoculars, sunscreen, sunglasses, hat, and water.

Please visit the field trips page on the MAS website for the most recent listings.

Registration on Ticketleap required unless otherwise noted. Search Ticketleap online under Maricopa Audubon; or find links to the field trip you wish to attend on the MAS website. If you're concerned about online privacy or your computer skills, you may also register by contacting Field Trip Chair Robert Carter. If you cannot attend, please cancel your reservation so someone else can join. To cancel a reservation, contact the leader or Field Trip Chair Robert Carter [robert.carter@hey.com](mailto:robert.carter@hey.com)

## EARLY MIGRATION AT RIO SALADO HABITAT RESTORATION AREA

SATURDAY, SEPTEMBER 14

Close to downtown Phoenix, this riparian habitat hosts a variety of bird families and is particularly productive during migrations. Once an unsanctioned dump, this riparian corridor has been restored and features a number of trails exploring both wet and dry riparian, mesquite bosque, marsh, and even desert thornscrub habitats - a true testament to the power of conservation within developed spaces. We may also be treated to beavers, as well as more familiar mammals. Public restroom. Time: meet 6:30AM at Nina Mason Pulliam Rio Salado Audubon Center parking area.

Limit: 10

Difficulty 2-3 (uneven ground and possible minor bushwhacking)

**Leader: Robert Carter**

## MINGUS MOUNTAIN

MONDAY, SEPTEMBER 23

Mingus Mountain is a 7,700 ft. peak in the Prescott National Forest near Jerome. We'll start very early from the Phoenix area, explore several trails through the pine forest and around a pond. Pygmy Nuthatch, Band-tailed Pigeon and Plumbeous Vireo are locals along with forest-dwelling woodpeckers and flycatchers. We should find Western Bluebird, Virginia's, Grace's, and Townsend's Warblers and Painted Redstarts. With luck we could see Olive and Redfaced Warblers, Greater Pewee and passing migrants. Wrap up with

a picnic lunch. Carpooling and other logistics to be decided a few days before the trip.

Time: Leave Scottsdale about 5AM and return about 3:30PM.

Limit: 7.

Difficulty: 1-2 (mostly flat terrain, but at about 7,000')

Restrictions: All participants must be fully vaccinated.

**Leader: Kathie Anderson**

## BIRDS, DRAGONFLIES AND MORE AT GILBERT WATER RANCH

SATURDAY OCTOBER 12

With bird migration in full swing, we'll make our way around the East Valley's favorite migrant trap. We'll check for any reported rarities, and maybe even find some of our own. We'll be treated to a diversity of birds potentially reaching 50+ species, not to mention the plant and insect life! Bring closefocus binoculars if you have them. Bring water, snack, sun protection.

Time: Meet 6:30AM

Limit: 10

Difficulty: 2

**Leaders: Robert Carter and Laurie Nessel**

## NEW RIVER NATURE PRESERVE

MONDAY OCTOBER 14

Off the beaten path, north of Phoenix is the New River Nature Reserve. Tucked between new River and I-17 this reserve boasts a dense Cottonwood/Willow riparian habitat, adjacent to open Sonoran Desert, providing opportunities to see a wide range of species such as Bell's Vireo, Wilson's Snipe, Willow and

Western flycatchers to name a few. You may get a chance to practice your ID skills--comparing Hutton's Vireo and Ruby-crowned Kinglet. You may also be treated to a number of thrushes, thrashers, finches and sparrows. Bring water, snacks, sturdy shoes, and sun protection.

Time: Meet 6AM at Metro Parkway Park-and-Ride station

Difficulty 2-3

Limit: 7

Restrictions: All participants who carpool must be fully vaccinated.

**Leader: Robert Carter**

## PHOENIX CITY PARKS TOUR

SATURDAY NOVEMBER 9

Join us for an exploration of some of Phoenix's City parks. We'll see a number of different habitats and the effect of maintaining these habitats in an urban environment. We'll carpool as we make our way through Bolin Memorial Plaza, Harmon, Eastlake, Margaret T. Hance, Steele Indian School, and Encanto Parks. Each park plays a unique role in its neighborhood. We'll see some of the history of Phoenix while exploring the avian life contained within. Bring water, and snacks as needed.

Difficulty 1 (paved paths, abundant seating, and public restrooms)

Time: Meet 6:30AM at Wesley Bolin Memorial Plaza (North Parking Lot)

Limit: 10

Restrictions: Those wishing to carpool must be fully vaccinated

**Leader: Robert Carter**

## MINI-BIG DAY FROM TOP OF THE WORLD TO GILBERT WATER RANCH

MONDAY, NOVEMBER 18

This is a fast-paced field trip to a variety of habitats to see as many birds as we can before lunch (1:30ish). We've usually tallied between 65-75 species, and always have a few nice surprises. We'll start about 6:45AM from Gilbert, head east to the oak/juniper habitat of Top of the World at about 4,500' and work our way back to Gilbert, to bird at least 3 different habitats. Locations will be chosen right before the trip, but Oak Flat, Queen Valley, and the Gilbert Water Ranch are likely. Finish 2:30ish at the Water Ranch or a restaurant. Carpooling and other logistics to be decided a few days before the trip.

Time: Leave Scottsdale about 6:15AM, return about 3PM.

Limit: 7.

Difficulty: 3 (faster than usual pace, many miles covered)

Restrictions: All participants must be fully vaccinated.

**Leader: Kathe Anderson**

Some trips don't meet the Cactus Wren-dition deadline. Please check <https://www.maricopaaudubon.org/field-trips> for the most up-to-date field trip offerings.

## Meet Field Trip Chair Robert Carter

Hi there Wrendition readers. I'm Robert Carter, the new MAS Field Trips Chair. I've got some big shoes to fill taking over for Mark Horlings, and I'm excited to get to work connecting folks in and around Maricopa County with the rich diversity of birds and habitats the state of Arizona has to offer!

I've always been an advocate of conservation, growing up with the Atlantic ocean and Florida Everglades as my playground, though my inner birder didn't come out until I learned to identify birds by their calls. Since then, it's been a mad dash into a full-on obsession; learning everything I can about the birds around me, and by extension their habitats. I'm hoping to share that enthusiasm with my fellow MAS members, and engage our wider community in conservation, so that we'll still be marveling at birds for generations to come.



Photo: Daniel F. Echeverri, MD

I'm constantly looking for enthusiastic folks to help introduce others to birding (or enhance the experience of more seasoned birders), and conservation. If you're interested in leading a trip, or have any suggestions, please contact me at [Robert.carter@hey.com](mailto:Robert.carter@hey.com).

# Birding the Monterey Bay Aquarium

By Mark Horlings



California sea lion  
Photograph by Tom Mangelsdorf

The Monterey Bay Aquarium shares an approach to exhibiting captive wildlife with Tucson's Arizona-Sonora Desert Museum. Both feature local wildlife. The leopard sharks, kelp, sea otters, sea cucumbers and octopi in the Aquarium's tanks are native to



Sea otter  
Photograph by Tom Mangelsdorf

Monterey Bay.

Both museums also benefit from natural spaces close around them. At ASDM, visitors pass underground dens but the animals are not confined and are present or absent from the dens as they choose. The tanks at Monterey are enclosed, and the animals

plumage. Black-bellied Plover, Red and Red-necked Phalarope, and Red Knots all showed spectacular patterns and colors.



Black-bellied Plover  
Photograph by Pierre Deviche



Brandt's Cormorant  
Photograph by Tom Mangelsdorf

We visited Monterey for the whales, sharks and fish and enjoyed seeing them all. The birds were a happy surprise.

*Mark Horlings is past Treasurer, Conservation and Field Trip Chair of MAS.*

cannot move into the ocean. However, wide decks adjoin an outdoor tide pool and kelp forest where sea lions, starfish, sea otters, and hundreds of Brandt's Cormorant and Pigeon Guillemot can be seen. The Guillemot stay close, nesting among pilings under the Aquarium's buildings, and are "flat out flyers" – always rushed, beating short, stiff wings and trailing bright red feet.

A special treat was the aviary. Rescued birds inhabit a narrow "shoreline" so close to visitors that we saw detail more clearly with the naked eye than we see with binoculars in the field. This close, an American Avocet's angled beak resembles an exquisite chisel. Because we visited in late June, birds that breed in the Arctic but are normally drab in California appeared in breeding



Red-necked Phalarope  
Photograph by Pierre Deviche

# Field Trip Report **White Mountains**

by Kathe Anderson



Broad-tailed Hummingbird  
Photograph by Greg Ralbovsky

In a lovely escape from the sizzling heat, a small group of birders headed to the White Mountains in mid-June, birding on the way, and staying in Eagar for two nights.

Highlights included:

Two Great Blue Heron Rookeries, one with constant chatter;

An active Bald Eagle nest with three adult-sized chicks, crowding mom (three chicks are rare for Bald Eagles);

Broad-tailed Hummingbirds buzzing around at almost every stop;

Great views of Lewis's Woodpeckers at Woodland Lake in Lakeside;

Western Meadowlarks singing while Horned Larks were near the car at Sipe White Mountain Wildlife Area;

Numerous Eared Grebes in their dazzling breeding plumage at Luna Lake; and ...

An excellent assortment of colorful migratory songbirds, including flycatchers, orioles, tanagers and warblers, along with resident bluebirds, jays and nuthatches.



Lewis's Woodpecker  
Photograph by Gordon Karre

About 75 species were sighted, a few more were heard only, and newly-opened (and highly-recommended) Ditty's Pizza in Springerville added sustenance of another kind!



Eared Grebe  
Photograph by Pierre Deviche



Western Meadowlark  
Photograph by Misty Briggs

*Kathe Anderson leads popular field trips around the state. Waitlists for her trips are common, and often referred to so sign up!*

# Calamus Adaptation in Auricular Function

Text and Photographs by Matt van Wallene

The calamus or quill is the proximal end of a feather that is seated in the follicular cavity below the surface of the skin.



Figure 1. Chicken feather calamus.

During feather development the pin feather is fed nutrients via blood supplied by the axial artery through the dermal papilla into the pulp.

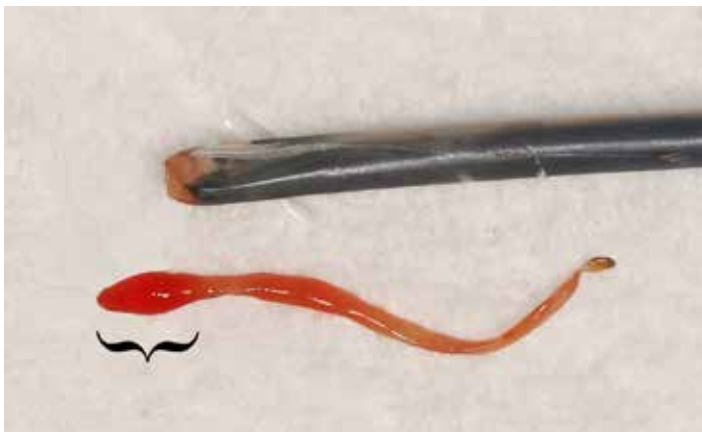


Figure 2. Mourning Dove dermal papilla and pulp removed from the pin feather.

Once the feather has matured, the dermal papilla is absorbed back into the body and the calamus becomes hollow. This feature allows the storage of ink for a quill pen. The feather at this point is a collection of dead cells, like the tip of your fingernail. Close inspection of the mature calamus shows bands called "pulp caps" (Fig. 3).

These pulp cap rings are the remnants of the blood vessels that supplied the feather with nutrients while it was growing.



Figure 3. Barn Owl primary covert showing pulp cap rings removed from the pin feather.

Using the Barn Owl as the paradigm for optimal hearing, one of its many unusual traits is the long calamus on the auriculars and ruff feathers surrounding the meatus (Fig 4)

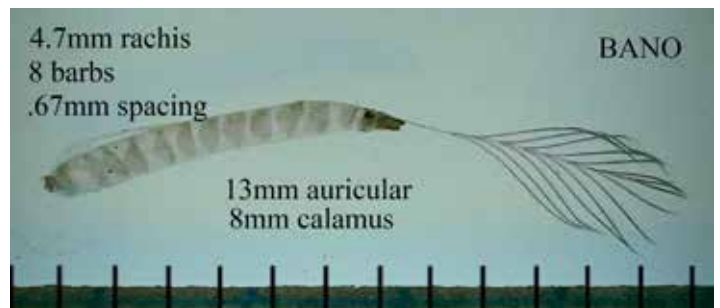


Figure 4. Barn Owl auricular taken from the operculum.

The calamus serves as the anchor that secures the feather to the bird's skin. Under the skin, surrounding the calamus, are erector and depressor muscles and ones that control sideways movements of constriction and expansion.



Figure 5. Control of a bat's movement.

I postulate that, like the baseball bat analogy in Figure 5, the greater the length of the calamus (using two hands), the greater control of the feather's position.

The long calamus is an evolutionary adaptation that helps the Barn Owl control its operculum and ruff which are

moved independently to isolate the source of the sound. Since control of feathers surrounding the meatus enhances hearing in owls, it would be anticipated that other orders would have this trait.

The calamus of the auricular was measured and compared to the total length of the shaft for all the 52 species in the feather study. The ratio of calamus to shaft reveals an interesting hierarchy. A higher ratio implies better auricular feather control to enhance sound reception. Ducks have the smallest percentage of calamus to total shaft length at 7% followed by hawks at 8%, passerines at 9%, doves at 17% and ground birds at 18%. As in other traits, ducks sacrifice hearing for waterproofing. Hawks hunt primarily by sight while the hunted, doves and ground birds, use hearing as a defensive tool.

the circumference of the head. Shaped like a colon (Fig 8), the walls of the meatus are stabilized by feathers with long calami.



Figure 8. Long-eared Owl meatus looking from above (left) and from below (right) and structural calami.



Figure 6. Bald Eagle, White-winged Dove, and Inca Dove.

Special request to readers. Does anyone have a photograph of raised auriculares on species other than doves? Please contact me at [zoutedrop@gmail.com](mailto:zoutedrop@gmail.com).

- Matt

Figure 9 illustrates how the Barn Owl uses auricular calami for structural support of its operculum, which can be raised or lowered independently.

All birds can raise their feathers like the Bald Eagle (Fig. 6). I conjecture that the length of the auricular calamus is related to the bird's ability to singularly control just the ear coverts, as shown by the doves.

Another function of a long calamus is structural. The frame of a hand-fan gives rigidity to the surface, thus holding its shape.



Figure 7. Hand fan structure.

The meatus of the Long-eared Owl is exceptionally large with each about a third of

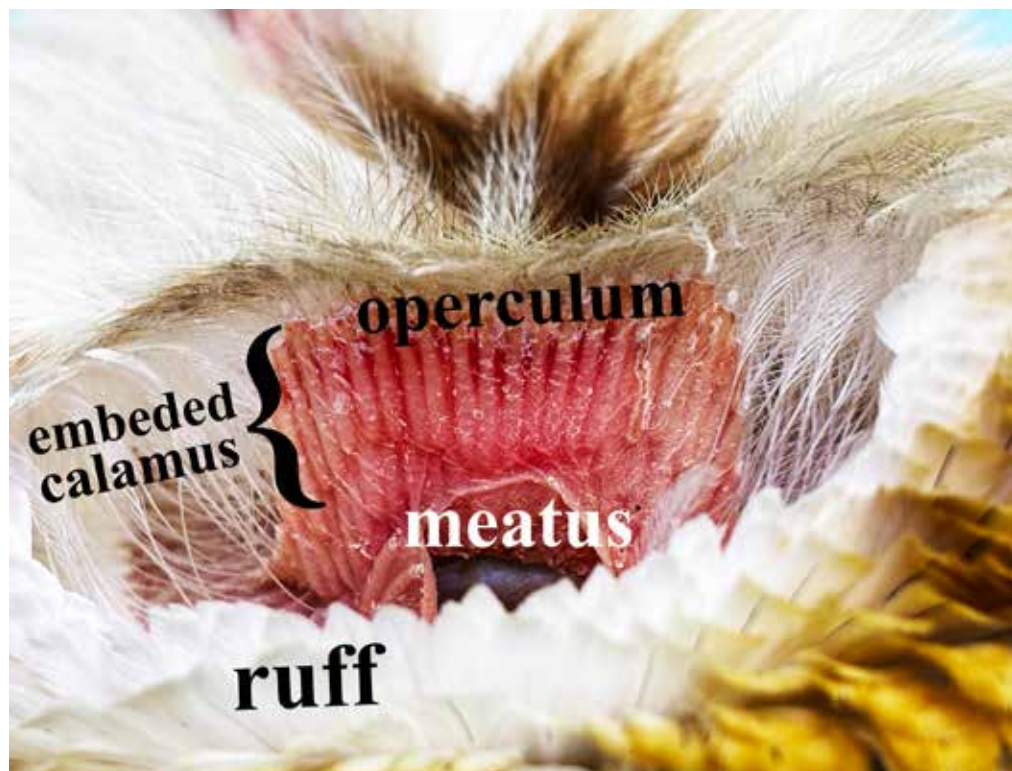


Figure 9. Barn Owl operculum showing structural support.

Please see Matt's bio on p. 14.

## Addendum to

# Morphology and Morphometric Characterization of Barn Owl External Sound Related Adaptations (Cactus Wren-dition Spring 2024, pp. 10-16)

Text and Photographs by Matt van Wallene

### Serrated talon

The middle toe of an adult Barn Owl has a serrated, comb-like flange called a pectinate talon (Fig. 10). It is used to groom the delicate facial auricular feathers.<sup>1</sup> Barn Owl hatchlings don't have this feature, as it develops over time. A ridge is formed by day 78 of development. By seven months there is a smooth flange which will become notched at around two years when they are deeply slotted<sup>2</sup>.



Figure 10. Barn Owl pectinate talon.

<sup>1</sup> Sieradzki, A. (2022) "Designed for Darkness: The Unique Physiology and Anatomy of Owls", *Owls - Clever Survivors*, IntechOpen, doi:10.5772/intechopen.102397.

<sup>2</sup> Johnson, P. (1991) Development of talon flange and serrations in the Barn Owl *Tyto alba*: A guide to ageing, Ringing & Migration (1991) 12:3, 126-127.

### Ruff

The preparatory reading for the Barn Owl article revealed details of the facial disk that I was not aware of. Subsequent research gave me the opportunity to document these features.

The Barn Owl facial disc consists of two areas (Fig 11). The ruff that surrounds the facial disk can be independently adjusted to amplify sound. The ruff extends down the forehead to the top of the beak, effectively dividing the two areas.

Unlike the eyes, the ears are not pointed forward but at a 50° angle from the midline. (Fig 12).



Figure 11. Ruff dividing the facial disk.

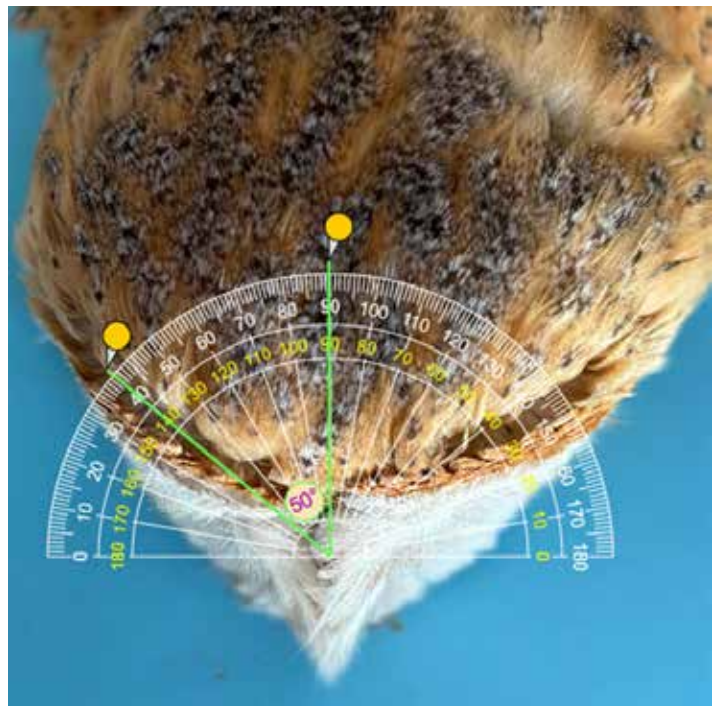


Figure 12. Angle of hearing surfaces.

*Matt van Wallene is a regular contributor to the Cactus Wrendition. His website "hollandwest.com" delves into the fascinating and quirky world of birds through his captivating photography.*

# New Record for Maricopa County and the State: Curlew Sandpiper

This adult Curlew Sandpiper, *Calidris ferruginea*, was discovered by Pierre Deviche at Paloma Ranch on 20 July 2024. This is the first documentation for Arizona of this long-distance migrant from the Siberian (Russian) Arctic. This is the 469th species for the county and it will be #571 for the state when accepted by the ABC. It was last seen 27 July 2024.

Photograph by Pierre Deviche.  
Recorder: Janet Witzeman



## Broad-tailed Hummingbird

This species was seen on Kathe Anderson's White Mountains field trip.



Photograph by Gordon Karre



Photograph by Tom Cheknis

# Crested Caracara

Misty Briggs photographed this Tucson Crested Caracara nest using a 500mm lens for two hours over two days in April 2024.



The male guards the nest - a crested on a crested!



The female with spiny lizard prey flies past her mate who was guarding the nest.



The chicks observe the delivery.



A tender moment is shared.

# View with Crooked Sycamore, Madera Canyon

Poem and Painting by David Chorlton

July 2/3 2000

A forest space, an elbow in the flow  
of a stream that briefly smiles before shadows  
guide it off away and down the canyon slope  
to follow Painted Redstarts into fading light.

June 2/3 2009

Impasto leaves and sycamore reflections,  
the hour shining at mid-afternoon  
when all that moves is the Cooper's Hawk  
with its hungry shadow.

June 22 2010

Midsummer questions asked by the oaks of the juniper.  
Everything in place: the trunk leaning over the current,  
the current running through a needle's eye  
on its way to night. Between the upper boughs  
the drowsy sky is paling.

June 23/24 2010

Now green what had been thirst and shade  
and when it is too dark to see and Whip-poor-wills are calling  
the moon is calling back.

September 7/8 2012

Afternoon light mirrored on the slope, Acorn  
Woodpecker drumming above the sound  
of sunlight touching fallen leaves.

September 8/9 2012

Water draws light from within the earth. The forest  
glows, turkeys line up to flap the way  
to their roost between sycamores and stars.

February 14 2016

Winter dims to introspection. Stones ring  
in tune with birdsong  
and a flash on the water is a single loaded brushstroke.

*David Chorlton is past Editor of the Cactus Wren•dition and  
longtime Poet Laureate*



Nature Through the Artist's Eye  
René Clark



The Alpha Rules (Harris's Hawk)

Her credits are extensive, owing to her critical eye, technical mastery, and ability to suffer the environmental hazards of field work with sustained patience.

René has been featured on "The Reptile Living Room Live" web show, in natural history publications including the *Bulletin of The Chicago Herpetological Society*, *Vermilion Flycatcher*, and books including Jones, L.L.C. (2022). *Venomous Animals of the United States and Canada*; Schuett, G.W., et.al.(2023), *Amphibians of the Sky Islands*, and many more.

René Clark is passionate about photographing the wild beauty of the Sonoran Desert. She specializes in herpetofauna, but is adept at capturing various phylum - from the squabbling Harris's Hawks at the Arizona-Sonora Desert Museum, to the woodlouse, a terrestrial crustacean introduced from Europe.

René has photographed for the University of Arizona Herpetology Department and the Tucson Reptile Show. Her first published image, in *Sonoran Herpetologist* (Tucson Herpetological Society), was the first photographic



Adorable (Sonora Mud Turtle)



Isopod Clean-up Detail (Woodlouse)



Fierce Feathered Jewels (Lucifer Hummingbird)

documentation of desert kingsnake cannibalism. She partnered with Arizona Game and Fish Department on a photography presentation and workshop for the Turtle and Tortoise Survival Alliance Symposium, and has judged photography contests in Tucson. Recently she was on the Photography Ethics panel at the Southeast Arizona Birding Festival. She shares this on the topic: that no situation is black and white, and all we can do is try to make the best decisions in every interaction with wildlife, to be as respectful and non-intrusive as possible. Everyone agreed that flash mode should never be used on a nest; twigs, branches and other features around a nest or other wildlife shelter should be left alone; and some of the best images happen when we remain still, and one with nature.



Raven Moon



Feed Me Now (Northern Mockingbird with Master Blister Beetle)

René is happiest behind the camera, with lens trained on everything from saguaros to spiders, feathers to fangs. See more of her amazing images at [Dancing Snake Nature Photography on flickr](#) and [Facebook](#).

[dancingsnakenaturephoto@comcast.net](mailto:dancingsnakenaturephoto@comcast.net).

# Maricopa Audubon Society

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Please see meeting information on page 2 or [maricopaaudubon.org](http://maricopaaudubon.org). For questions or speaker suggestions, contact a Board member.

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1. National Audubon Society - For dual membership in NAS and MAS call (844) 428-3826 and ask to be assigned to MAS chapter B00. You will get The Cactus Wren•dition as a courtesy. To be guaranteed a subscription, please consider joining MAS as a Friend.

2. Maricopa Audubon Society Friend dues go directly to MAS and support our mission. Friends are guaranteed a print subscription to The Cactus Wren•dition, and discounts on books and merchandise. Dues are \$10/year student/youth, \$20/ year individual. MAS is a non-profit 501(c)(3). All dues above \$20 are tax deductible.

You can join at a monthly meeting; online at [maricopaaudubon.org/join](http://maricopaaudubon.org/join); or send your name, address, phone or email, and a check payable to Maricopa Audubon Society to the MAS President (right). All Friends memberships now renew annually each year on April 1st. Subscriptions are pro-rated.

## SUBMISSIONS

Copy for The Cactus Wren•dition must be received 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 feature a theme. Feel free to enquire and take the theme into account. Editor: Laurie Nessel [laurienessel@gmail.com](mailto:laurienessel@gmail.com)

## OPINIONS

The opinions expressed by authors in this newsletter do not necessarily reflect the policy of NAS or MAS.

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