Shape the Future

# Canyon Chatter

## Friends of Madera Canyon

**June 2026**

# Contents



**On the Cover**. The rufous hummingbird (*Selasphorus rufus*) is a small hummingbird, about 8 cm (3 in) long, with a long, straight, and slender bill. A recently published study finds that male hummingbirds flare their tail feathers to signal aggression to other males. See page 15.



**Join Friends of Madera Canyon.** Below are links to join as a new member, renew a membership or make a donation. The links will take you to a secure server to use to make an automated payment. Do you have any questions? Let us know. If you prefer to help by writing a check, please make your check payable to Friends of Madera Canyon - mail to: FoMC, Box 1203, Green Valley, Arizona, 85622-1203. **New Membership Click Here** OR **Renew An Old Membership.**

# From the President & Executive Director

## Good Governance and Our Leadership Pipeline

Dear Friends, Members, and Volunteers,

Welcome to this edition of the *Chatter*. We are thrilled to write to you together as Board President and Executive Director, especially as our independent ideas and initiatives for the canyon have beautifully merged into a unified vision. Recently, we sat down to discuss what will truly strengthen the Friends of Madera Canyon (FoMC) over the next 40 years.

*"I am so excited to first celebrate everything this community has achieved,"* Kristin shared.

Dan responded, *"And I am deeply committed to memorializing our history so that the incredible legacy of our founders is permanently preserved."*

Kristin added, *"I feel incredibly grateful to start in this position at a moment when we have the unique opportunity to reflect and be grateful for 40 years of dedication, and also look intently toward the future. To me, the three most important things for our future are: 1) expanding our community partnerships and public outreach, 2) cultivating an inclusive, energized volunteer network, and 3) maintaining exemplary good governance."*

Dan noted, *"Our paths are perfectly parallel. From the Board's perspective, the three most critical elements for our next 40 years are: 1) securing long-term financial sustainability through fundraising, 2) expanding our conservation and educational footprint, and 3) good governance."*

With our priorities completely aligned, we are ready for an 'all hands on deck' year to celebrate our upcoming **40th Anniversary** and prepare for the next four decades of community-led conservation!

In the non-profit world, good governance is our commitment to being impeccable stewards of the trust, funding, and natural wonders in our care. It ensures operational transparency, fiscal responsibility, and strategic continuity. For FoMC, robust governance provides the solid foundation required to scale up our fundraising for critical projects, expand partnerships with the U.S. Forest Service and beyond, and effectively manage our public outreach.

However, excellent governance cannot exist in a vacuum; it requires a strong pipeline of dedicated leaders to champion our initiatives. To ensure our 40th anniversary celebrations are a resounding success and that our strategic vision remains sustainable, we are actively recruiting passionate individuals for critical committee chair, team lead, and upcoming Board positions.

### Key Leadership Opportunities: Step Forward for the Canyon

Our dedicated volunteers have always been the heartbeat of Madera Canyon. Now, we are looking for leaders within our community to help steer our organization through this celebratory year and beyond. We invite you to explore these vital roles where you can make a transformative impact:



| Leadership Role | Strategic Impact & Core Responsibilities |
|---|---|
| **Marketing Committee Chair** | Oversee the strategic expansion of FoMC social media platforms and public relations. Lead campaigns to broadcast our accomplishments, promote upcoming 40th-anniversary events, and elevate our brand presence across local businesses and media. |
| **Volunteer Coordinator (Team Lead)** | Serve as the direct bridge to our most valuable asset—our people. Help recruit, engage, and organize our volunteer network, fostering a collaborative, supportive, and positive environment where every contributor feels celebrated. |
| **Board of Directors (Upcoming Openings)** | Shape the high-level governance of FoMC. Incoming Board members will guide committees, drive fundraising efforts, strengthen civic alliances, and play a pivotal role in organizing and executing our historic 40th-anniversary initiatives next year. |

## An Invitation to Shape Our Next Chapter

Serving in a leadership capacity at FoMC is a deeply rewarding experience. It gives you a direct seat at the table to execute our vision, develop strong institutional relationships, and represent our beloved canyon at public events, service clubs, and civic organizations. Whether your background is in business, communications, education, or simply an enduring love for the environment, we need your unique talents.

As we celebrate the foundational contributions of our long-standing members and volunteers, I ask you to consider taking the next step with us. Let's make our 40th year our most collaborative and impactful one yet.

If you are interested in learning more about these leadership roles or nominating a peer, please reach out to either of us directly or connect with a member of the Board nominating committee.

With gratitude for your enduring dedication,

**Dan White**, Board President, president@friendsofmaderacanyon.org

**Kristin Wisneski-Blum**, Executive Director, executivedirector@friendsofmaderacanyon.org

# Volunteer Spotlight: John Haak

John Haak is a great example of a versatile and loyal team player. John joined the Friends of Madera Canyon in 2021 and began actively volunteering at the Visitor Information Station and with the trail crew in 2024. When surgery sidelined him from trail work in 2025, it did not deter John from supporting the Friends: he continued working at the VIS and took over leadership of the team that stocks the Canyon kiosks with brochures and fee envelopes. He also continued to engage with the trail crew throughout his recovery, like a true team player. John also recently helped the Friends of Madera Canyon leadership team by joining a 40th-anniversary focus group.

PS. We're pleased to report that John was able to rejoin the trail crew at our May 20 bridge inspection day.

# Partner Spotlight: Wild Arizona

Dexter Kopas

Kile Stumbo

Sam Woolsey

Who do you call when 40 people volunteer for an Earth Day event, and you've only got tools for a crew of 10? Call Wild Arizona! That's right. For the past two years, Wild Arizona has been a key partner in the Friends of Madera Canyon Earth Day community volunteer events. In 2025, our inaugural event, we relied on them for marketing, registration, tools, supplies and volunteer supervision. In 2026, we figured out marketing and registration, but Wild Arizona showed up with the extra tools for our volunteers and an energetic team of three experienced trail workers to help supervise the volunteers who planted over 1000 seedballs on the Old Baldy Approach Trail.

In fact, Wild Arizona operates Arizona's only full-time professional and year-round field crew, working in wild areas across the state and along the Mogollon Rim into New Mexico. Stewardship includes trail maintenance, watershed restoration, wilderness monitoring, and public engagement. And, like the Friends of Madera Canyon, they also work close to our homes. If you've been on Bog Springs or lower Super Trail wilderness sections, you've seen their tread work and rock work.

But Wild Arizona is about more than we can see in our canyons, watersheds and wild places. Operating as Arizona Wilderness Coalition and Grand Canyon Wildlands Council (they merged to form Wild Arizona in 2019), Wild Arizona was instrumental in the passage of landmark bills, establishing Arizona's 90 designated Wilderness Areas, and the Wild & Scenic designation for Fossil Creek and the Verde River. As Grand Canyon Wildlands Council (GCWC), they conducted assessments that were the basis of the Grand Canyon-Parashant and Vermilion Cliffs National Monuments on the north rim of Grand Canyon.

If you see the Wild Stew crew in the Canyon, be sure to thank them for their stewardship!

WILD
ARIZONA

# Friends of Madera Canyon
# Bud & Mary Gode Scholarship

The Friends of Madera Canyon awards the Bud & Mary Gode Scholarship each spring. Bud and Mary Gode were early members of FoMC, committed to maintaining and enhancing the enjoyment of Madera Canyon through their service and generous financial support. The goal of the Gode Scholarship is to support young scholars with similar interests in our natural environment.

The Scholarship is a one-time award of $5,000. Applicants must be graduating high school seniors who wish to pursue post-high school studies in a discipline related to the natural sciences, and demonstrate a sincere desire to eventually have a career in some way related to the science or preservation of our natural environment. The Friends of Madera Canyon Scholarship Committee will consider a variety of related career goals within the general area of the natural sciences - and may broadly include such fields as forest management, ecology, research, environmental science, etc.

Awarding of the scholarship will not depend on financial status, although financial need may be taken into consideration. There is no discrimination as to race, gender, ethnic origin, or religious preference. Sincerity of career goals and high academic performance in high school will be the primary determinants in selecting the recipient.

Graduating seniors from the following high schools are eligible to apply: Sahuarita, Walden Grove, Academic Pathways/Sahuarita, Rio Rico, Nogales, Patagonia Union, Tohono O'odom and Baboquivari.

Application materials for 2027 will be available on the website beginning in January.

Questions about the Scholarship Program may be addressed to: judy.white@friendsofmaderacanyon.org

# FoMC Scholarship Committee Report

May 14, 2026

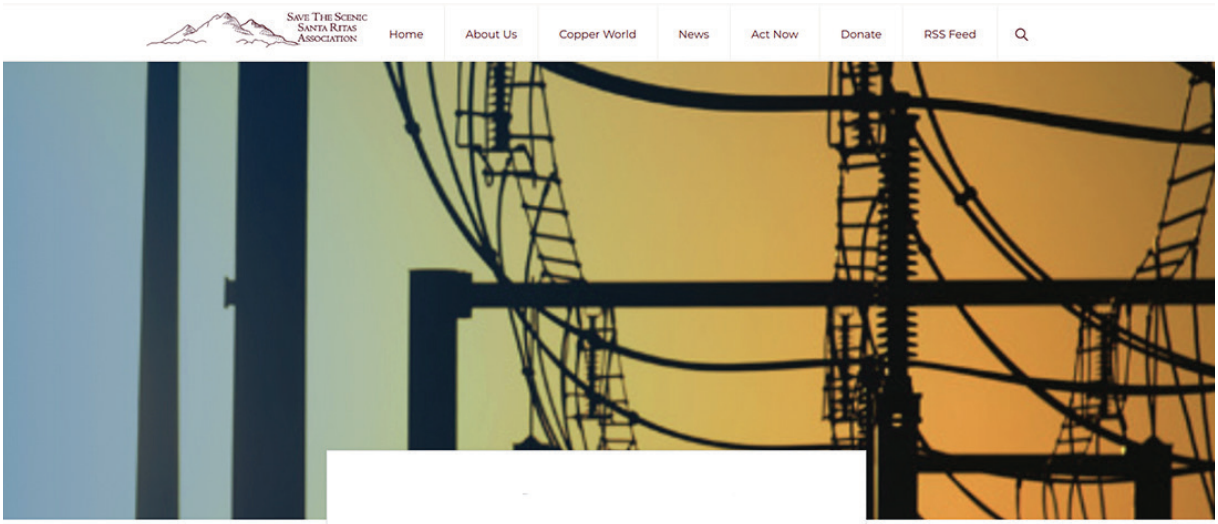
As reported last month, the FoMC Scholarship this year was awarded to Xavier Limon, graduating from Walden Grove High School.

Because of a prior commitment on the same date as the Walden Honors Night, Dan White did the honors of presenting Xavier with his scholarship certificate. See below. Dan reports that Xavier also received some other scholarships from local organizations, as well as a renewable one from University of Arizona, where he intends to matriculate.

I will be following up with Xavier to arrange forwarding his scholarship funds to UA later in the summer, and hope to keep in touch with him from time to time and report back to the board about how he is doing.

**Judy White, Chair**

# For Your Information




In our 2023 Strategic Plan, the Friends affirmed our opposition to the Hudbay mine project, as have other groups concerned with the environment. The Friends have been supportive of the Save the Scenic Santa Ritas organization which has been fighting the development of the mine for many years. SSSR has raised a host of issues, starting with the desecration of a Sky Island and the negative environmental impacts on the land. They have also been active in raising awareness of concerns about water, electricity, air pollution, the permitting process, etc. If the Hudbay project is of concern to you, we recommend that you go to the SSSR website to read the various positions they have taken in their efforts to stop the mine. Go to http://scenicsantaritas.org

For an important message from Save the Scenic Santa Ritas (SSSR)

READ THE WHOLE STORY. CLICK HERE

# The Birding Page

Bob Pitcher

It was somewhere over 100° when I left Green Valley on my way up to Madera Canyon in the late afternoon of May 11. I do little birding at night, but this was my night to listen for owls and nightjars in the Canyon – and while light lasted, to see what else I might see.

By the time I got up to the Santa Rita Lodge, it was just after 6:00 and maybe 90°—perfectly comfortable since there was no longer any direct sun. I'd evidently just missed the excitement at the Lodge. Two bears had been by and had gone off again. Quite a few birders remained. We're not easily deterred when there are birds to be seen, and the feeders were aswarm with hummingbirds.

**Hummingbirds**

Most were Broad-billed Hummingbirds, by far the commonest at this time in the Canyon. The Broad-billed is hardly a bird one can get tired of seeing, and so many at a time is a delight. I've no estimate of how many I might have seen during the hour I sat at the Lodge, but at one point, there were thirteen Broadbilled at one time at just three of the feeders there. Other hummingbird species were mixed in: at least two pairs of the big Rivoli's Hummingbirds, three or four Anna's, at least a couple pairs of the elegant Black-chinned, and perhaps as many Broad-tailed Hummingbirds. The wings of the male Broad-tailed give a whistling *zingg*, and they have a beautiful carmine gorget.

In such numbers, the hummingbirds were jostling one another considerably at the feeders, all wanting a few last sugar fixes before nightfall. Most squabbles were between individual Broad-billed, which, as a species, appear to come low on the pecking order here. The Rivoli's are tops, of course, just from their bulk, but they sometimes seem to hold back from a crowded feeder. Otherwise, the male Black-chinned seemed to win all the

squabbles with Broad-billed.

Best: The Canyon's Berylline Hummingbird is back – though who can say whether it will stay all summer as it has before? In past years, a Berylline – rarely seen at all north of the border – has appeared at the Lodge or the Madera Kubo as early as April, but none had been seen this year until a day or so before. Hard to say, of course, but this year's is a female and may be the same as the one that stayed here for months the last couple of years. Around 6:00, she was coming to the rightmost of the feeders about every twenty minutes.

Apart from all the hummingbirds there, the birds at the Lodge viewing area were somewhat atypical that evening. The Turkey Vultures came in to roost down along the creek as usual, but there were no woodpeckers in evidence, only a few furtive Mexican Jays, and no Turkeys, though I heard one up the slope across the road. After 7:00, a half dozen Black-headed Grosbeaks appeared suddenly, all at one of the feeders. The next day, another birder found a female Rose-breasted Grosbeak among the Black-headed then present. If it was there the previous evening, I failed to notice it.

Western Screech-Owl
(*Megascops kennicottii*) Photo by Dominic Sherony

By this time, it was getting dark. A Whiskered Screech Owl was tuning up in the background.

**Owls & Nightjars**

As with many other birds in Madera, the species of nightbirds tend to change with elevation in the Canyon. I began listening to owls in the Whitehouse Picnic Area. It was very quiet there under the trees. But it is also very beautiful, with an orange-pink Arizona sunset slowly fading over the west ridge and bright Venus as the evening star. Eventually, a Western Screech Owl called, and a Common Poorwill one of the Nightjars also vocalized. Canyon Tree Frogs were louder and more persistent than either of the birds, or the many crickets trilling.

My final stops were at either end of the upper Mt. Wrightson parking lot. Here, there were two distant Whip-poor-wills, both far up the Canyon, and at least three and quite likely four Whiskered Screech Owls. So many of the owls were calling because someone up at the top of the picnic area was loudly imitating their call – something one is strongly encouraged not to do anywhere in Madera Canyon.

A successful outing, I thought. I had seen no Lesser Nighthawks, but the Canyon itself is not usually the best place to see these birds of more open places. And I hadn't heard either the little Flammulated Owl or the much larger Spotted Owl. Each is more likely above 6,000 feet -- higher than I'd care to climb in the dark.

# Biodiversity Notes

## A new species of moss from the arid southwest; an addition to the biodiversity of Madera Canyon

*Schistidium* is a genus of plants in the moss family. While most of the species seem to be Holarctic, there are Middle American and southern Neotropical records of the family. It is well known in Europe, but scarce in Africa and Madagascar. About 150 species are recognized. The team of scientists who described the new species was led by Paola Rumin from the Norwegian Institute of Bioeconomy Research, Bergen, Norway and others from: the Stuttgart State Museum of Natural History, Botany Department, Stuttgart, Germany; The University of Arizona Herbarium, Tucson, Arizona, U.S.A.; and the University of Molise, Department of Biosciences and Territory, EnviXLab in Campobasso, Italy.

Distribution of *Schistidium arizonense*. From Rumin et al. 2026.

*Schistidium arizonense* was described as a new species from the U.S. states of Arizona, New Mexico, and Texas in April of 2026. It belongs to the section Atrofusca, but unlike most other taxa in the section, it is not a pure calcicole (calcium-loving) species. It also occurs on acidic substrates. Based on a sequence in non-coding DNA, the taxon is closely related to *S. helveticum,* which is congruent with morphological similarities (similar size, the lack of stomata, and mostly absent or short hairpoints on vegetative leaves). *Schistidium arizonense* is, however, most likely to be confused with the widespread and highly variable *S. crassipilum,* which appears to be more distantly related.

External morphology of *Schistidium arizonense*. From Rumin et al. 2026.

Mosses and other bryophytes provide numerous ecological services, including the following. Mosses act like massive carbon sinks. Recent studies estimate that soil mosses store over 6.4 billion tons of atmospheric carbon globally. They act as biological sponges, capable of holding up to twenty times their dry weight in water. They release this moisture slowly, which helps prevent soil erosion, mitigates flash flooding, and retains humidity in dry environments. Mosses trap windborne dust and nutrients, creating a micro-environment that accelerates organic decomposition. They also suppress harmful soil-borne plant pathogens, fostering a healthier overall soil microbiome. They create a thriving micro-ecosystem that supports microorganisms (such as bacteria and diatoms) and invertebrates (such as tardigrades). Birds and small mammals frequently use moss for nesting material. Because they can colonize bare rock or burned forests, they help jumpstart vegetation. Their high sensitivity to air and water pollution makes them excellent natural bioindicators for tracking environmental health.

**Reference**

Paola Rumin, Isaac Tiselius, Ries Lindley, Hans H. Blom, and Thomas Kiebacher 2026. *Schistidium arizonense* sp. nov. (Grimmiaceae), a new xerophytic species from the southwestern U.S.A. related to the Eurasian *S. helveticum*. The Bryologist 129(1), 35-49, (16 April 2026). https://doi.org/10.1639/0007-2745-129.1.035

# Education Report Spring 2026

## "Not Just the Usual 4th Grade Nature Walk"
## Spring 2026 FoMC Education Program

Doug Moore, Education Director

Since 2023 the FoMC Education Program has coordinated April Madera Canyon field trips with Sahuarita High School's BioTech class and Walden Grove High School's AP Environmental Science class. Typically for these field trips, a small bus of 15 to 20 (sophomore to senior coed) students arrives for a morning walk around the Proctor Nature Loop. Divided into several groups, the students explore lower canyon nature with FoMC docent leaders and discuss Sky Island ecology, canyon life zones, plant and animal communities, effects of climate change, and other subjects.

The high school activity is actually quite similar to our 4th Grade nature walk program—except docents are able to go into greater depth about the canyon! Observant exploration leads to a lot of great questions from the older students and deeper discussions than can happen with 4th Graders. An amazing number of these older kids have not had much opportunity to spend time outdoors or experience real nature. To guide these students on the Proctor Nature Loop Trail is both a pleasure and a challenge for our docent naturalists to engage and mentor these kids about "their" Madera Canyon!

As I mentioned, our typical high school walks have been about 15 students (Sahuarita HS brought 14 to the canyon on April 2). So when WGHS teacher Emily Patterson told me she had 60 students this year, it was quite a shock! Emily then tempered my surprise somewhat by saying she thought only about 40 would actually attend the field trip. Nevertheless, 40 is a lot of students for us and I knew we'd need "all docent hands on deck" for the field trip to be a success.

April 9 was a perfect Madera Canyon morning, crystal clear and 70 degrees as the sun topped the Santa Rita Crest above Proctor. The Walden Grove HS bus arrived at 9:00 am with exactly 30 students (high school kids have to sign up and pay to attend activities) and were met by 12 docents- 6 leads and 6 sweeps. 6 walking groups of 5 students each is as ideal as it gets- so much for my worries! Following a short orientation at the Proctor Ramada, the mixed groups of sophomore to senior coeds set off for a 2.5 hour exploration around the Proctor Loop Nature Trail. The students were polite, curious, attentive, actively engaged, and interested to learn about canyon natural history. The canyon was in fine spring shape with a trickling creek, abundant wildflowers, and a diversity of wildlife from butterflies to deer to see. The docents were challenged by the older students to be at their best, excellent experience and training for working with high school students. The morning proved extremely satisfying for all and ranked within the top nature walks ever- as good as it gets! Big "Thank You" shout out to Emily Patterson and her fantastic students!

Later in April, the program had a very different experience that proved to be equally fun and satisfying for all involved. Contacted by "Adventures with Friends," a disabled adult care group in Green Valley, I did a Madera Canyon nature slide show for their 18 adults on April 13. Everyone was so much fun and loved the canyon photos so much, I agreed to meet the group for a nature walk on the Proctor Accessible Trail on April 29.

I was initially concerned about the weather- late April can start getting hot in the lower canyon- but luckily once again, my worries were not realized! It was another brilliant, clear cool canyon morning when docents Laura Doyle, Jim Burkstrand, and I met two vans of 18 adults and 6 staff members from "Adventure with Friends" (my visiting sister Dana from Colorado also tagged along).

As we hit the trail, it was soon apparent that fixed groups were NOT going to work- individuals had very strong ideas of what they wanted to do! Some wanted to stroll along the path with staff; others enjoyed looking at nature, but didn't linger; the last group were true "naturalists"- ready to study every

flower, bug, and bird they encountered. So it worked best to just "go with the flow"- staff assisted the walkers while we docents explored and discovered with the naturalists. This last group proved amazingly focused and observant; of greatest interest were the many funnel-weaving wolf spiders and the variety of canyon wildflowers out. Certainly a fun morning for all, we hope to do more programs and walks with "Adventures with Friends"!

Each field trip and nature walk in the canyon is different, producing challenges and rewards. Sometimes it is a breeze, other times not so much... But it is both privilege and pleasure for us in the Ed Program to meet these different groups and rise to the challenge of helping them explore and discover "their canyon". Our current docent roster isn't huge- we can't field 35 people like we could in the 90's-00's. But our volunteers are dedicated, sharp, adaptable, and flexible; they are the best and do a fantastic job! Give us a group and we'll show them the canyon!

The Walden Grove High School field trip, April 9, 2026  Photo: Emily Patterson

# Research Summary

## Tail flaring is used by fighting male hummingbirds

Bird tails contribute to flight aerodynamics by generating lift, reducing pressure drag, and stabilizing pitch. Hummingbirds are exceptional fliers: they can hover in still air, produce lift on both the upstroke and downstroke, and launch effectively because of their large wings and powerful flight muscles. Given this wing-driven performance, tails may be less critical to hummingbird aerodynamics than in other birds, allowing them to evolve non-locomotor functions. Hummingbird tails are also highly elaborate sexually selected ornaments and can produce sounds. Elting et al. (2026) hypothesized that tail flaring is another form of sexual signaling used by males during fights. To test this idea, they used high-speed video to record agonistic encounters among seven hummingbird species in the field and found that tail flaring occurred in most interspecific and intraspecific contests. They also measured tail-flaring kinematics during male-male fights in captive calliope hummingbirds (*Selasphorus calliope*). Consistent with their hypothesis, males showed greater tail flare during fights than during solitary landing or takeoff. They interpret these results in the context of signaling during animal contests and propose future tests of whether tail flaring functions as an honest signal of individual quality and resource-holding potential.

Male-male fighting is common in hummingbirds as they compete for food and mates. In these contests, tail flaring and waggle maneuvers appear to signal aggressive intent.

Research over the past several decades has identified several aerodynamic functions of the avian tail. Airflow over the tail can generate lift and help support body weight. The tail also gives the body a more streamlined shape, acting as a splitter plate that reduces pressure drag. How effectively the tail performs these roles depends on its shape. Under delta wing theory, tails with their greatest width near the trailing edge best maximize lift relative to drag. Tail shape can also influence other aspects of flight performance. Forked tails, for example, may improve maneuverability while maintaining favorable lift characteristics. Tail posture can even change within a wingbeat to meet shifting aerodynamic demands. In the warbling white-eye (*Zosterops japonicus*), the tail flares during mid-downstroke and interacts with wing downwash to reduce downward pitch. Together, these studies suggest that bird tails serve diverse aerodynamic roles in flight.

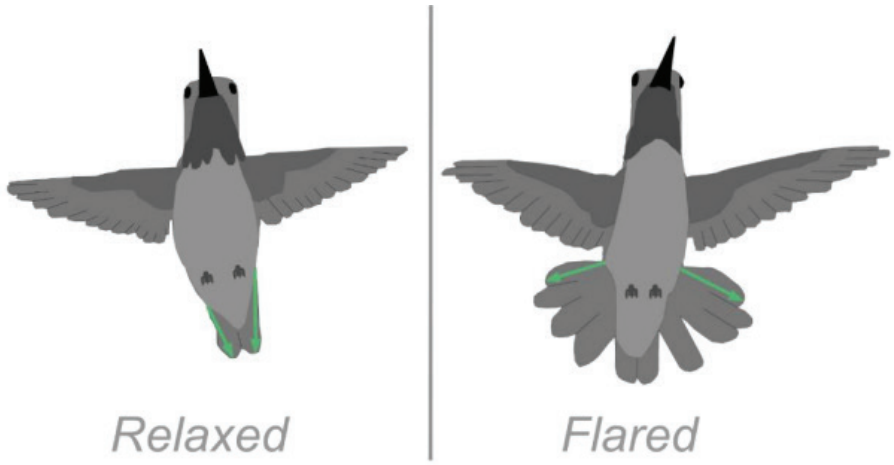



Figure from Elting et al. (2026). Two tail states in male Calliope Hummingbirds (*Selasphorus calliope*): relaxed and flared. Tail angle was the acute angle between left and right position vectors (green arrows) originating where the outer margin of the tail met the body and going to the tip of each outer rectrix (R5). In these examples drawn from frames of high-speed video, the relaxed tail angle was -26º and flared angle was 136º .

Hummingbirds are the only birds capable of sustained hovering in still air, and they are exceptionally agile fliers. These abilities stem from their small size and highly specialized wings. Key adaptations include high wingbeat frequencies, lift generation on both the upstroke and downstroke, and high mass-specific power output from the large primary flight muscles. Relative to other birds, hummingbirds are considered hyper-aerial, and this

lifestyle may reflect an evolutionary trade-off that favors forelimb development over hindlimb development. As a result, they have proportionally small hind limbs and rely heavily on their wings for takeoff and maneuvering. The tail also contributes to performance in some contexts, including escape maneuvers, but current evidence suggests that its aerodynamic contribution is modest compared with that of the wings. At the same time, hummingbird tails show striking morphological diversity, including elongated streamers, spatulate tips, and feathers that generate sonations during courtship. These specialized forms may have evolved because the tail is subject to weaker aerodynamic constraints than in other birds. Supporting this idea, wind-tunnel studies found that experimentally shortening or lengthening the tail had little effect on topflight speed and only small effects on metabolic cost during forward flight. Thus, although the tail can contribute to flight performance, it likely is not evolving solely for aerodynamic function. There is also evidence that the tail plays a role in hummingbirds' agile and aggressive territorial defense. Many species, especially within the bee clade (a group of about 37 species of tiny to small-sized Trochilinae hummingbirds), defend territories intensely—descriptions of agonistic interactions in several species note tail fanning during territorial contests. Territories are valuable because they provide access to food and serve as platforms for courtship displays, including dives, shuttles, sonations, and gorget displays directed at potential mates. Territorial defense can involve displacements and chases and may escalate to feather-pulling or jousting. Despite the intensity of these interactions, serious injury and death appear to be rare. In other animal groups, low injury rates often reflect preliminary signaling or assessment stages in contests. Although aspects of combat have been described in several hummingbird species, important questions remain about how contests escalate, how individuals signal their quality or likelihood of winning, and whether tail flaring serves as such a signal.

Elting et al. found tail flaring was regularly used by free-ranging hummingbirds in seven species at two different field sites, as well as among male calliope hummingbirds during competition trials in an indoor competition arena. The angles of tail flaring differed between solitary maneuvers and competition, and frequency distributions differed between birds that won a desired territory (high perch) and those that did not. The use of tail flaring was variable and was not associate with body size. Elting et al. propose that it and concurrent waggle maneuvers may serve as signals of aggressive intent in male-male fighting in hummingbirds. Their field observations indicate such signaling is also performed by females.

**References**

Elting R, Md Zafar Anwar, Donald R. Powers, Bo Cheng, Haoxiang Luo, and Bret W. Tobalske. 2026. Tail Flaring is an Agonistic Signal in Hummingbirds BioRxiv. https://www.biorxiv.org/content/biorxiv/early/2026/03/05/2026.01.30.702386.full

# Editor's Desk

## On the importance of vagrant birds

When I was living in northeastern Illinois, my house was on a large lot that backed up to a park with a bike path. Much of my backyard was flooded for part of the year, attracting wading birds and waterfowl. Picnickers sitting at the water's edge eating lunch was not uncommon. Cattle Egrets seemed to attract attention, and every day I was happy to learn that they had reached North America by flying across the Atlantic from Africa.

The Cattle Egret, a vagrant bird that became part of the avian fauna. It is now considered naturalized. JCM

Vagrant and rare birds spotted in Madera Canyon are more numerous than those in my yard in Illinois and include:

- Berylline Hummingbird: A highly sought-after Mexican vagrant that frequently returns to the Santa Rita Lodge feeders for extended stays.
- Plain-capped Starthroat: A massive, exceedingly rare US visitor is occasionally documented near the lodge and feeding stations.
- Rose-throated Becard: A rare stray historically spotted breeding in the lower sections of the canyon.
- Flame-colored Tanager: An iconic Mexican species that has turned up occasionally as a stunning vagrant.
- Rufous-capped Warbler: A highly localized Mexican stray that occasionally wanders into the riparian chaparral.
- Aztec Thrush & White-throated Thrush: Incredible neotropical vagrants that have been discovered foraging among the fruit-bearing trees and leaf litter.

Vagrant birds are out-of-range individuals that appear far outside their normal migration routes or habitats. Far from being simply "lost," they act as biological explorers. They are vital for species range expansion, ecological adaptation, and serve as sentinels for climate change.

Vagrant birds hold ecological and evolutionary importance in several key areas. They drive evolutionary range expansion. They are the vanguards of change: Vagrants are often the exploratory vanguard of shifting populations. If climate change or habitat destruction alters the environment, these wanderers test out new, previously inhospitable areas. They can be test subjects for the evolution of new species: When enough vagrants find and settle in a new, isolated territory (such as an oceanic island), they may eventually form the ancestral core for an entirely new species over time. Vagrants can disperse their genetic material and carry gene flow to new areas and populations. Genetic Dispersion and Gene Flow Vagrancy acts as an evolutionary insurance policy. By dispersing juveniles and pre-breeders to new regions, populations reduce the risk of localized extinction. Gene Mixing: If these wayward travelers manage to find members of their own species or interbreed, they introduce new genetic material to isolated populations, increasing the overall genetic health of the species. Vagrants can serve as early warning indicators for climate change.

Ecosystem Shifts: Because their movements are incredibly sensitive to environmental changes, vagrant birds serve as living indicators of shifting global climates and habitat degradation. Tracking vagrants helps ornithologists and conservationists understand how species' ranges are physically moving across the globe over time. Vagrants can transport the seeds of plants across vast distances. This movement can facilitate rapid range expansion for flora or introduce plant species to entirely new geographic zones.

If you are currently hunting for vagrants, your best strategy is to check the communal feeders at the Santa Rita Lodge (especially in the summer months). To get the most accurate, up-to-date sightings, use the Madera Canyon--Santa Rita Lodge Rare Bird Alert on eBird or review the Tucson Bird Alliance feed.

Here are some tips on the best trails to hike, information about the resident species (like the Elegant Trogon AKA the Coppery-tailed Trogon) expected this time of year?

Top locations to explore include the following:

Santa Rita Lodge Feeders: This is the best first stop. Grab a seat in the shaded viewing area to easily spot up to 12 hummingbird species (like the Broad-billed), finches, grosbeaks, and Wild Turkeys cleaning up on the ground.

Proctor Trail: Excellent for riparian species and lower-elevation birds, especially early in the day.

Madera Creek Trail: The area between the White House and Amphitheater trailheads is a magnet for songbirds, including the beautiful Painted Redstart.

Super Trail: If you are up for a vigorous hike, this is one of the most reliable places to spot the elusive Elegant Trogon.

**Don't Forget**

eBird

iNaturalist

# The Last Page

## A Super El Niño is on the way.

A Sonoran Desert storm. Photo Rusty Lombardo

A Super El Niño is an extreme phase of the naturally occurring El Niño-Southern Oscillation (ENSO) cycle, defined by sea surface temperatures in the central and eastern equatorial Pacific Ocean rising 2.0°C or more above average. This massive release of thermal energy radically alters global atmospheric circulation and rainfall patterns. What this means for Arizona remains to be determined. Here is some speculation.

During a Super El Niño, weather anomalies become highly amplified: The Americas: The southern tier of the US (including California and the Gulf Coast) typically experiences wetter, stormier conditions, while the northern US and Pacific Northwest become warmer and drier. Asia and Australia: These regions often suffer severe droughts, crop failures, and an increased risk of catastrophic wildfires.

For the Sahuarita and Green Valley areas, strong El Niños can enhance winter and spring rainfall, but they also elevate the risk of extreme, sustained summer heatwaves. In 2024, similar conditions caused Arizona to experience unprecedented heat. Scientists warn that an amplified pattern can drive summer temperatures to new extremes and fuel more intense weather patterns globally. JCM