



Shape the Future

# Canyon Chatter

Friends of Madera Canyon

October 2024



The newly described Sonoran Tiger Mantis, *Stagmomantis clauseni*. Photography by Lohitashwa Garikipati.

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**On the cover.** The Sonoran Tiger Mantis, *Stagmomantis clauseni* is endemic to the Sonoran and Chihuahuan deserts and was found in Cochise, Pima, and Santa Cruz Counties, Arizona. It was described by Lohitashwa Garikipati in August 2024.

The common name, Sonoran Tiger Mantis, is derived from the black striping on the abdomen and the active hunting approach this species takes to stalk and chase prey from ambush. Males are 1.38-2.08 inches; females are larger at 1.69- 2.51 inches. The female Sonoran Tiger Mantis produces one brood of offspring per year throughout its range. The egg cases hatch approximately 6-8 weeks after a diapause when the embryos development slows or stops. Typically in the wild young are present from late March to May.

Garikipati L. 2024. Description and total ontogeny of the Sonoran Tiger Mantis, *Stagmomantis clauseni* sp. nov., and key to the subgenus *Nigralora* (Mantodea: Mantidae). Zootaxa 5501(1):79-107.

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# From the President

## However We Can, Help

Kindergarteners at Island Pacific Academy on Oahu learned from their teachers about the power of human kindness and the importance of generosity of spirit. Big words and big concepts for five-year-olds. So, they simplified, saying “whenever you can, help.”

Those four words have remained as a mantra for the school for twenty years. The kids love to be helpers.

A while back, Zach MacDonald, Recreation Manager for the Coronado National Forest, Nogales Ranger District, put out a notice about a collaboration of Arizona Wild and Forest Service personnel spending a week in October working on “switchbacks above and below Baldy Saddle,” trimming and doing treadwork as needed. He asked me to see if anyone would be interested in hiking water up to the crew at some point.

I spread the word, and three people (with the possibility of more) immediately made plans to take water up at the mid-point of the eight days the crew will be working. Their eagerness to help reminded me of the joy those Island Pacific Academy children showed each time they helped. The “habit of helping” has no age limit. (See below.)

Not all of the over 700 of us who are members of the Friends of Madera Canyon have the physical conditioning to carry water to Baldy Saddle. We are able, though, to help however we can. We have been blessed with volunteers who help us build on the legacy of the work of past FoMC members and shape the future of FoMC stewardship of our Canyon.

Read on...

## **Welcome to our second teenage Visitor Information Station volunteer!**

**Anita Woodward**

We are happy to announce that we now have a second teenage volunteer at the Visitor Information Station. This young man, named Michael, is a friend of our first such volunteer, Micah. Both work their shifts with a parent, which is how we are able to make this work. We feel very lucky that these high school students have chosen to do some of their volunteering with the Friends of Madera Canyon, AND that they have the support of their moms. If you have a teenager who enjoys Madera Canyon and being outdoors and if one of the teens’ parents is willing to volunteer along with their daughter or son, you can get in touch with us at [info@friendsofmaderacanyon.org](mailto:info@friendsofmaderacanyon.org) for more information about how this works.





# Announcements

## **Do you like being in the Canyon and telling others “where to go?”**

The Visitor Information Station (VIS) is staffed by our volunteers on Fridays, Saturdays and Sundays for four hours each day. Our volunteers work in pairs for two hour shifts, and while they can work the same time every month, the schedule is flexible enough to accommodate our busy lives.

Visitors ask questions about hiking, birding, picnicking, parking and sometimes other more unusual things. We have maps and brochures that we give out, and help make the visitors feel welcome and comfortable in the Canyon. Our volunteers often say how much fun they have with this assignment, and let’s face it, what could be better than being in the Canyon?!

If you are an FOMC member and this sounds interesting to you, please contact us at [info@friendsofmaderacanyon.org](mailto:info@friendsofmaderacanyon.org) for more information and we will be in touch with you.

## **Call for Event & VIS Volunteers!**

**Do you like talking about Madera Canyon?**

**Join us working in our booth at an event....**

At various times of the year, Friends of Madera Canyon sets up booths at various events where we can let people know about Madera Canyon and the Friends. These are opportunities for FOMC to talk about what the Friends do to help to preserve and protect Madera Canyon and encourage more people to become members to support our activities as well as become volunteers. We always need volunteers to help to staff the booth and talk with attendees about Madera Canyon and what the Friends do.

In 2024, we exhibited at events such as the Tucson Festival of Books (March 15 & 16, 2025) which draws 130,000 attendees over one weekend on the UA campus. Over 300 authors were on presenting author panels as well as exhibitors from other non-profits, bookstores and all



sorts of literacy related activities. The Western National Parks Association has a large tent and stage area along with Tucson Audubon and other related organizations.

Other examples of events where we exhibit include:

- **Insect Festival on October 6, 2024 on the UA Campus**
- **Spooktacular on October 26, 2024 in Sahuarita**
- **Fiesta on December 7 & 8 at Tumacacori National Historical Park**
- **Tubac Festival of Arts on February 5-9, 2025 in Tubac**
- **Hawk Watch on March 15, 2025 in Tubac**

We also exhibit at Tucson Audubon Birding Festival which takes place in August. If you are a FOMC member and interested in volunteering on occasion at an event, please contact us at: [info@friendsofmaderacanyon.org](mailto:info@friendsofmaderacanyon.org)

### **4th Grade Education Docents**

Docents help 4th grade students learn about the natural, physical and cultural attributes of Madera Canyon through field trips along the Proctor Nature Loop Trail in Madera Canyon. Walks are on Thursday mornings during 4-6 weeks in late March to early May and mid-October to late November. Training provided. FoMC membership required. Contact the FOMC Volunteer Coordinator at [FOMCEducation@gmail.com](mailto:FOMCEducation@gmail.com) for details.





# Communications

## Welcome Jorge!

Jorge Enriquez begins his tenure as the permanent Ranger for the Nogales District of the Coronado National Forest on October 7. Many of us have had the chance to meet Jorge during his temporary assignment to the District last spring. Jorge is a native of Nogales so his becoming the Ranger is a homecoming of sorts for him.

The Friends of Madera Canyon welcome Jorge and look forward to a continuing productive relationship between the Friends and the Nogales District under his leadership. And thanks to Starr Farrell for her work on a temporary basis in that role this summer.

## Audubon Society Talks in Green Valley: Save the Dates

**Tuesday, October 8 at 11am. It will be in the GVR East Center (EC)**

### **Desert Purple Martins - Star Birds of the Arizona Monsoon with Jennie MacFarland**

The Desert Purple Martin (*Progne subis hesperia*) is a distinct subspecies that times its nesting to monsoon abundance and nests almost exclusively in saguaros or other large columnar cacti. Desert Purple Martins are extremely understudied with large gaps in knowledge about their nesting, migration, and wintering grounds. Very recent discoveries and data results will be shared along with lots of video and audio that showcases the charming and fascinating Desert Purple Martin.

**Tuesday, November 12, 11am**

### **Stewards for our Saguaros with Tony Figueroa**

The Sonoran Desert and Sky Island region of southern Arizona is a biodiversity hotspot because of the incredible plant communities, with the Saguaro standing out among them all. Unfortunately, these communities, and the wildlife that depend on them, are threatened by many non-native invasive species which outcompete native plants and also introduce the potential for catastrophic wildfires that our desert plants have not evolved with. This presentation will discuss some of the region's high-priority species, best management practices, and ways to get involved with Tucson Audubon.

**Tuesday, December 10, 11am**

### **Tips on Identifying Birds with Luke Safford**

Have you ever spotted an interesting bird only to become frustrated because you can't figure out what kind of species it is? We've all been there! Let's move from frustration to enjoyment in the process of identification. We'll hit on some of the major characteristics to pay attention to as well as discuss some finer details for particular bird families and then finish up with some photos of harder to identify birds and work through the process together.





## The Birding Report

### A Walk in the Canyon – Early September

Bob Pitcher

September 5, seven in the morning. As I park at the Mt. Wrightson Picnic Area – the end of the line for Madera Canyon Road – a Pipevine Swallowtail lit on my car, drawn by the heat of the engine. It was 70° and the sun hadn't come up over the eastern ridges. Though it was to be the hottest day of the early September heatwave, for the first few steps up the trail, I missed a jacket.

I climbed past the upper picnic sites and heard the first bird of the day, a Hermit Thrush giving its low contact notes, then, unmistakably, a Steller's Jay, unusual so low down. I never saw either one as I continued on up. I did see a Northern Flicker's white rump as he flew off toward the creek.

At the split, I chose Old Baldy Trail, with which I'm less familiar. All very still, not the slightest breeze, no bird sounds. I listened for the background insect noises of late summer, and there they were: the hum of a million flies. They'll all be gone in a couple of months, and then the Canyon is really silent.



A Hermit Thrush from the National Parks Gallery.



I began to see a few flowers, the lower ones mostly wilted – light-blue, long-tubed Thurber’s Trumpets and white New Mexico Fleabane, delicate miniature asters. A little higher up the trail these flowers and a few others were still in full bloom, but last month’s flowers now represented only by dried seed stems.

Apart from the blooms, all was green; there’s been enough of a monsoon, especially up this high, to freshen trees and underbrush. Though dust lingered in the air to soften the views, the oak leaves had been washed clean, and there’s new growth there and in the grasses about them. I particularly noted the new red-barked twigs on the Arizona Madrone, one of my favorite trees, and the fresh long, bright green needles on the Apache Pines.

Half a mile up, the trail now partly in sunlight, and there are finally a few bird sounds: Acorn Woodpeckers tapping – and squabbling – a gang of Mexican Jays in the distance, a single Raven croak. Then a couple of Pygmy Nuthatches mumbling to themselves in the branches of a pine and the louder clear calls of the White-breasted as well. Catching my breath in a shady spot, I saw a fine adult male MacGillivray’s Warbler working his way through the bushes.

I’d now finished half my water: time to start back down. On the way, I heard a Red-faced Warbler, but couldn’t see him. One of my favorites, even among the warblers, he’ll soon be off to the south. With him were at least three Bridled Titmice, which I did see – another favorite, and a substitute for the Black-capped Chickadees I grew up with.

Back at the split with the Carrie Nation Trail, I went up the latter to the place where it gets too steep and rocky for a casual walk like this. It’s been my impression, now reinforced, that Carrie Nation is a birdier trail than Old Baldy. Should be, as it’s along Madera Creek, though that was dry at this point. The flycatchers were at work here: within a few paces I saw a Western, a Dusky, and a West-

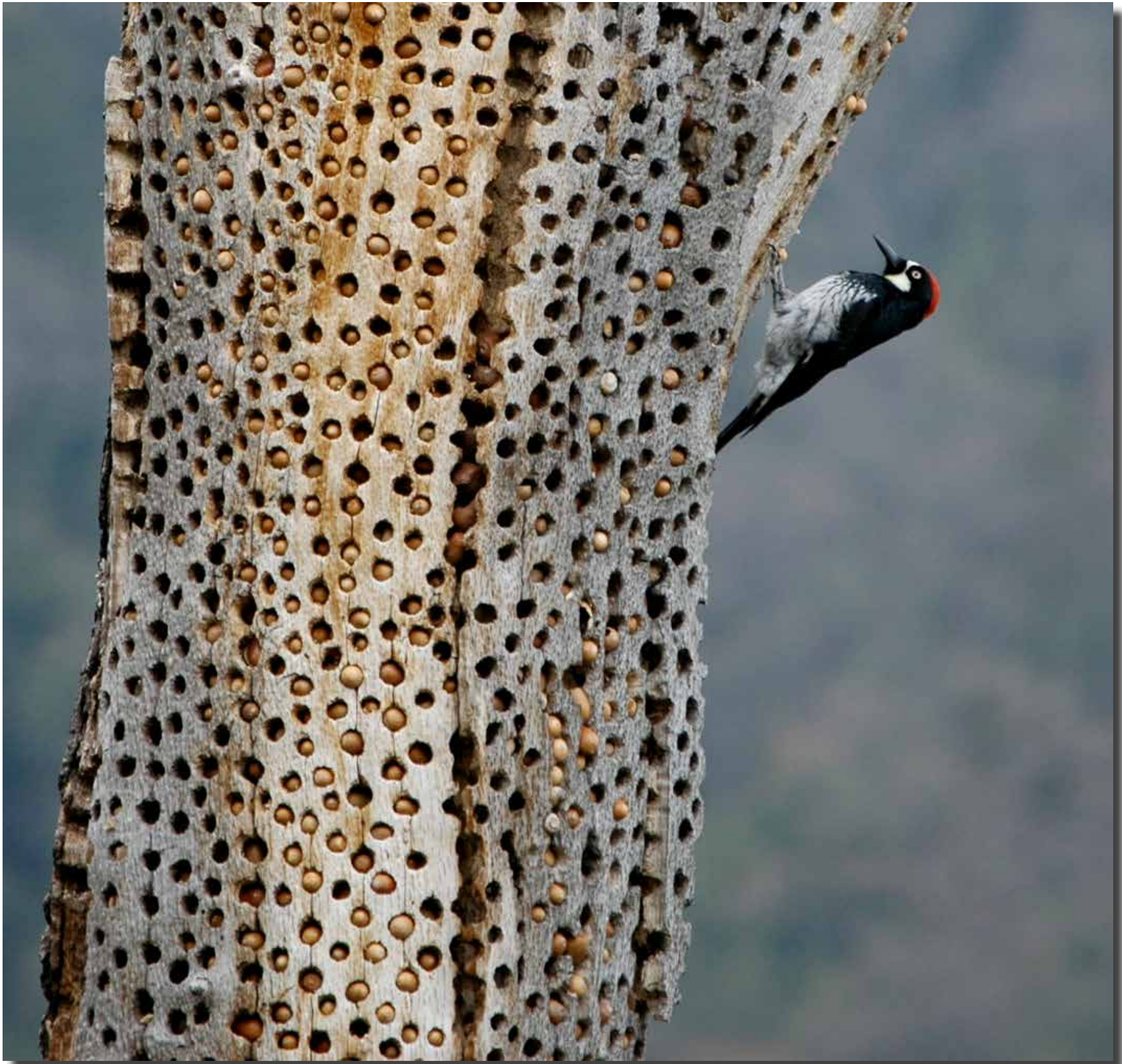


A Mexican Jay. Photographed in the Chisos Mountains The National Parks Gallery.





ern Pewee, all silent. A Plumbeous Vireo sang. There were now more Acorn Woodpeckers and Mexican Jays as well. And finally two singing Painted Redstarts to end the walk. On a stroll of two miles and three hours, I saw only a dozen other people, seven of them in one gaggle. A beautiful quiet morning in Madera.



An Acorn Woodpecker photographed in Sequoia National Park. The National Park Gallery.



# Action to Halt Invasive Yellow Bluestem Grass in Madera Canyon

Doug Moore, Education Director

A non-native, invasive grass called Yellow Bluestem, *Bothriochloa ischaemum*, has attained a strong foothold in Madera Canyon. Originally from N. Africa, the grass was originally imported into Texas for grazing and erosion control. It has been rapidly spreading and establishing itself across the western US. It was first noticed in Madera Canyon in 2019.

A warm season perennial grass, Yellow Bluestem (YBS) grows rapidly with warm rains during our summer monsoon season. The roots and crown remain alive from year to year, expanding, reseeding, and multiplying to crowd out native grasses and plants to form a monoculture. In the canyon, the grass is found primarily along the main and BS Campground roads and around the recreation parking areas pavement and sidewalks. There are serious infestations running into the woods above the Bog Springs Campground and into the grassland around the VIS building at Proctor (it is also common along much of the road down to Continental/GV and is likely established in the Santa Rita Experimental Range). It is believed that YBS could expand up the canyon to at least 6,000'+ before cold winter temperature intolerance will halt its progress. (elevation limits could easily extend upward with climate warming.)

On September 4, a Madera Canyon YBS assessment meeting was held in the canyon with USFS, FoMC, and an Arizona Native Plant Society (ANPS) invasive plant expert. On Sept. 23, 4 volunteers conducted a limited "selective spot spraying" of YBS around Mt. Wrightson Parking Area, a dense patch along pavement at Madera Picnic, and around the VIS at Proctor (further recon of YBS spread at Bog Springs Campground was also done). Spraying was done by back-



1) Yellow Bluestem grass. Photography Doug Moore.



pack with a special formulation of riparian/wildlife-friendly glyphosate herbicide applied specifically to crowns of YBS and nowhere else. A follow-up assessment of effectiveness of this first spraying is planned approximately two weeks following application date.

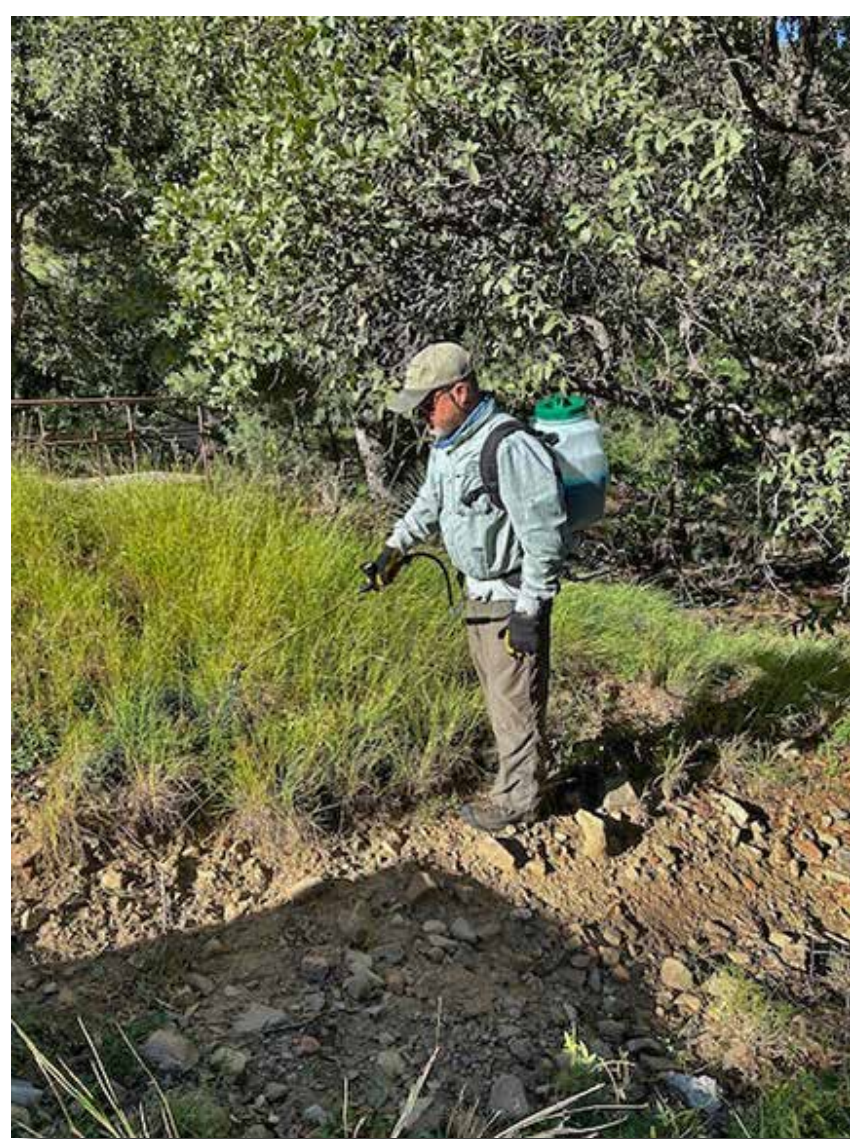
In consultation with the ANPS expert, due to the extent and density of YBS observed in Madera Canyon it will be necessary to employ a two pronged approach. 1) Spot spraying is effective along roadsides & pavement, but only 2) contractor large area spraying can treat areas where YBS has substantially invaded into habitat- as around Bog Spring Campground and across from the VIS from Proctor. (Pulling YBS over large areas or on slopes results in erosion & soil/habitat damage). Spraying must be performed consistently every monsoon season when YBS is metabolically active and growing. Estimate is at least 7 years of consistent treatment will be required, followed by years of close monitoring to see ensure YBS does not regain a foothold in the canyon.



2) Yellow Bluestem grass in the Bog Springs Campground. Photography Doug Moore.



3) Yellow Bluestem at Dutch John Trailhead & invading upslope. Photography Doug Moore



To the left. 4) Selective "spot" spraying at Madera Picnic Area. Photography Zach MacDonald.





## Education

# October 2024 Education Activities

**Doug Moore, Education Director**

As the seasons change to fall, FoMC Education activities ramp up for a busy October schedule.

On October 4, Bio Tech students from Sahuarita High School are volunteering to help tidy up the Native Plant/Pollinator Landscape around the picnic ramadas at Proctor that is overrun by goosefoot and other “weedy” plants proliferating during the monsoon.

On October 6, the FoMC will staff volunteer tables at the UA Insect Festival. This annual fall event is a big draw with kids/families and a new event for us to attend this year! Should be a very fun day of kids and bugs!

Thursday, Oct. 10, is our fall docent orientation/“trail nature recon” to scout and prep for the upcoming student nature walk field trips coming up on the Proctor Nature Loop Trail.

Continental School’s three 4 th grade classes will be separately visiting the canyon on Oct. 17, 24, & 31. Heads up to Thursday hikers and birders- student groups will be exploring the trail from 8:30 am until 12:00 noon. Kids on the trail!

Finally, Doug will also be giving a Madera Canyon presentation to a Pima Community College Biology class at the Greasewood Campus on Tues., Oct 29. And, the FoMC will be making the annual school supplies donation to our “adopted” Sopori Elementary School 4 th grade class.

So, a busy October on tap; stay tuned- activities continue in November...



# Cave Nesting Spider Wasps

Spider wasps (Hymenoptera: Pompilidae) are common and known for their short, low-level flights and twitchy walking style when they are on the ground. The spider wasps are lone, predatory insects that feed only spiders to their progeny. There are four subfamilies and less than 5000 described species in the family Pompilidae which is divided into 125 genera. These wasps range in size from a few millimeters to 60 millimeters. Despite their global distribution, tropical locations have the highest species diversity within the family.

Spider wasps have a diverse range of nesting and feeding habits. Females stroll along paths or take brief flights to hunt spiders. Typically, they dig burrows by using their forelegs to scrape soil backward, but several species exploit pre-existing tunnels, spider burrows, or create airborne nests out of mud. The family's many prey-handling techniques include pushing, tugging, carrying, and flying with the spider to its nest. The fossil record and divergence-time estimation indicate that crown-group taxa diversified in the early Eocene, while stem-group Pompilidae first appeared in the Upper Cretaceous.

In a new paper, Robert Pape of the University of Arizona discusses more than 30 years of research on the unusual, Evan's Spider Wasp, *Ageniella evansi*, that nests deep in Arkenstone Cave, a limestone cave at Colossal Cave Mountain Park near Vail, Arizona, in the Rincon Mountains. These populations are unique in their use of the deep cave environment and as many as 79 females were documented nesting simultaneously within the cave.

Evan's Spider Wasp is known from the Wasatch Mountains of Utah and ranges east to Chaves County, New Mexico. It is present in the Huachuca and Rincon Mountains and two sites in Central Mexico. It was first reported in Arkenstone Cave in March of 1989.

Cave populations of the spider wasp *Ageniella evansi* nest deep within limestone caves at Colossal Cave Mountain Park near Tucson, Arizona, USA. These remarkable populations are the only truly cave-dwelling pompilid wasps currently known. As many as 79 females were documented nesting simultaneously within Arkenstone Cave. The fact that the wasps do not nest near cave entrances but only deep within the interior of the caves, suggest they are site specific to each occupied cave. That the populations have been present each year for decades confirm their cave dwelling behavior. Studies conducted for over 30 years revealed many insights into the behaviour of these wasps in addition to their nesting deep within limestone caves, including: intraspecific and interspecific competition, plasticity in host selection, precision solar navigation, evidence that some form of communal nesting may be present and behavior suggestive of rudimentary cognition in the species. This study demonstrates the





A spider-wasp in the genus *Ageniella* from Texas. Photo 215078577 from iNaturalist, © Russell Pfau, some rights reserved. This is not the species nesting deep in caves, but it is a relative.

importance of assessing all animals found in caves as potential ecological elements and not focusing solely on exotic troglotrophic species (species adapted for living in caves).

### References

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Pape, R. B. (2024). Biology and ecology of a deep cave nesting spider wasp, *Ageniella evansi* Townes, (Hymenoptera: Pompilidae), in Arizona. *Journal of Natural History*, 58(29–32), 963–1054. <https://doi.org/10.1080/00222933.2024.2374542>



# The Editors' Desk

## The Overview Effect

Many educators, including myself (JCM), have dedicated significant time and energy to finding effective methods for teaching environmental science. Our primary objective is to design courses that impart scientific knowledge and foster a deep sense of environmental responsibility in our students. Immersing learners in local natural environments—parks, wetlands, beaches, or forests—has proven to be a powerful tool in nurturing this connection. These field experiences allow students to witness ecosystems and biodiversity first hand, enriching their understanding beyond the classroom.

Practical, hands-on activities, such as planting trees, testing water quality, or conducting biodiversity surveys, provide a tangible application of scientific concepts.

These experiences often lay the foundation for long-term environmental stewardship, helping students recognize their role in conservation. Particularly for adult learners, active engagement—through debates, projects, or problem-solving exercises—is key to retaining knowledge and forming a personal connection to the subject.

As educators, we are responsible for teaching critical thinking while inspiring the next generation of environmentally conscious citizens and leaders. By blending immersive experiences, citizen science, and digital resources, we can cultivate a lasting environmental ethic in our students and ensure our lessons have a deep impact.

However, in the pursuit of this goal, there is a concept we may have overlooked—the “overview effect.” This phenomenon, often reported by astronauts who view Earth from space, results in a profound cognitive shift. Coined by Frank White in 1987, the overview effect describes a new perspective that inspires feelings of awe, gratitude, and reverence for our planet. Astronauts frequently describe Earth as both beautiful and fragile, and many return to advocate for environmental protection.

For example, in 2021, William Shatner, the famed actor from *Star Trek*, traveled into space at the age of 90. Overcome with emotion upon seeing Earth

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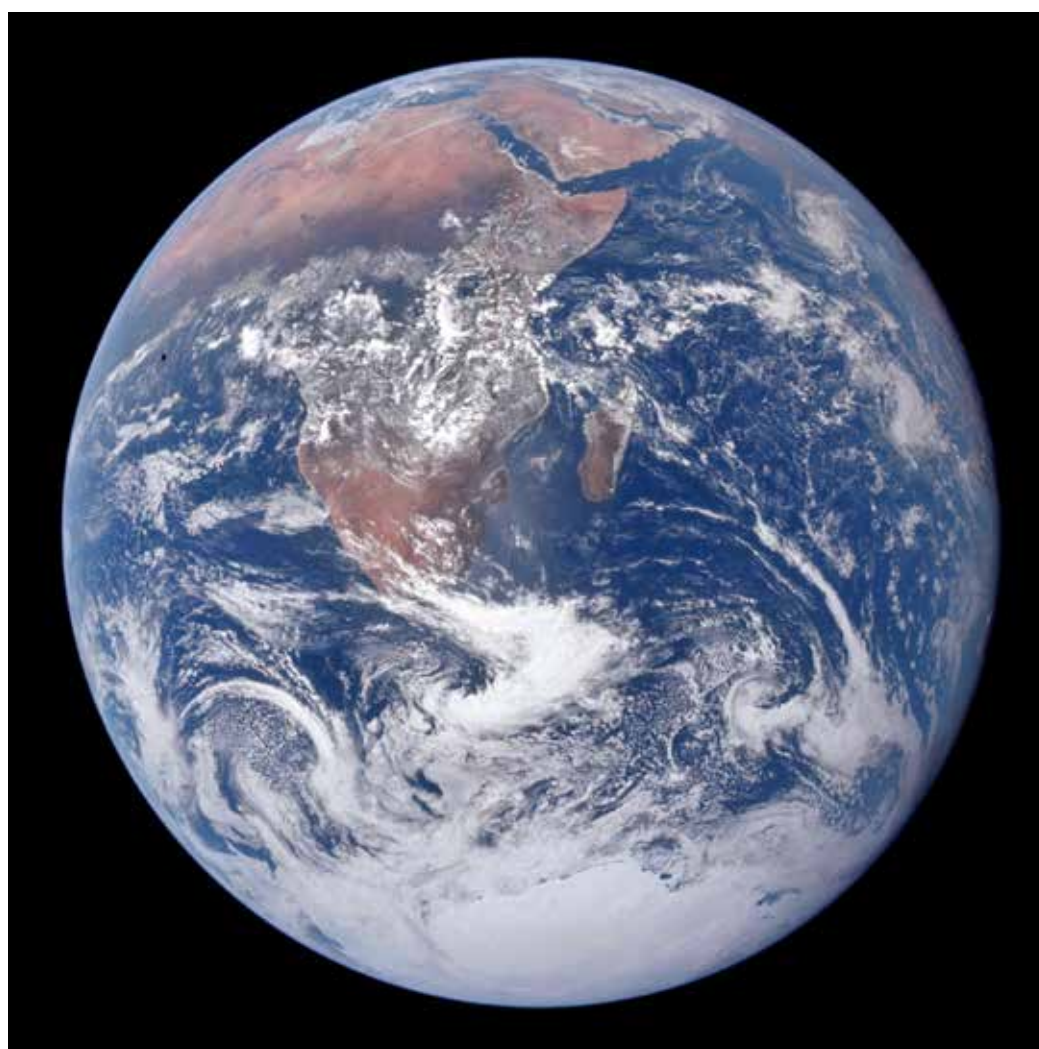


from above, Shatner said, “What you have given me is the most profound experience I can imagine. I hope I never recover from this.” Since Yuri Gagarin’s first space flight in 1961, astronauts have been echoing this sentiment. Gagarin urged humanity to “safeguard and enhance this beauty—not destroy it.” Decades later, ex-NASA astronaut José Hernández described his view from the Space Shuttle Discovery in 2009 as turning him into “an instant treehugger.”

The overview effect has led many astronauts to become environmental advocates, encouraging world leaders to act on climate change and conservation issues. Journalist Lucy Siegle noted that while astronauts are rare in everyday life, they are abundant at climate summits and environmental events.

Psychiatrist David Yaden from Johns Hopkins University describes the overview effect as “awe,” an intense emotion often triggered by the perception of vastness. Viewing Earth from space captures visual and conceptual vastness—an experience that transcends the ordinary and has a lasting impact on those who witness it. Yaden’s research highlights how brief, awe-inspiring experiences, like meditation or viewing Earth from orbit, can bring about long-term personal transformations. For many astronauts, this experience changes their relationship with the planet for the better, often fueling a lasting commitment to protecting it.

Incorporating the concept of the overview effect into our teaching could serve as a powerful tool for instilling an even deeper environmental ethic. While most of us will never have the opportunity to view Earth from space, we can still help students experience awe and wonder through exposure to nature and the incredible complexity of life on our planet. By fostering these emotions, we may inspire a new generation of passionate advocates for Earth’s conservation.



The Blue Marble is a famous photograph of the Earth taken on December 7, 1972, by the crew of the Apollo 17 spacecraft en route to the Moon at a distance of about 29,000 kilometres (18,000 mi). It shows Africa, Antarctica, and the Arabian Peninsula. This is the view that triggers the Overview Effect.







## The Last Page



I found these two little Short-horned Lizards on 24 August 2023. They and several of their siblings were navigating the same trail I was. The elevational range for Short-horned Lizards is 900-11,300 feet. The ones in the photo were at about 6,000 feet when I found them. Females may have litters of up to 48 neonates and they are born from July to September. Neonate Short-horned Lizards are born surrounded by an amniotic sac while their close relatives hatch from eggs. The environmental factors behind the difference seem to be the species preference for high elevation. By carrying their embryos in their body, females have better control of the incubation temperatures. JCM

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