



SPRING 2021

# Friends of Ironwood Forest



*Western diamond-backed rattlesnake. Photo by Brian Blais*

## ***What Desert Nightlife Tells Us About Conservation***

*by Brian Blais, Corey Shaw, Andrew Antaya, and Colin Brocka*

We barely notice the dirt kicking up behind us in the faint glimmer of twilight—we are more focused on the road ahead. Specifically, our eyes are actively scanning the road, looking side-to-side in the beams of our headlights... Our slow driving speed allows abnormalities in the road surface to stand out. Often, these deviations include sticks, rocks, bungee cords, shadows from crack-sealing tar, and once, a rogue burrito.

These items—at the right distance and dimly lit angle—look similar to what we seek: herpetofauna (the scientific term for amphibians and reptiles, collectively referred to as “herps”).

The Sonoran Desert ecoregion is not only beautiful and a marvel in its own right, but offers a rich biodiversity of wildlife, especially with herpetofauna. We are arguably residing in America’s “hot spot” for some of these creatures.

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Unfortunately, herpetofauna populations have declined on the global scale and various threats exist at our local scale. Increased development and land-use changes may sometimes be good economically, but there are often trade-offs ecologically. Long-term effects of changes to land-use patterns and its impact on natural systems are often poorly understood, if even at all.

One of our favorite activities is “road-cruising”—an evening hobby of slow driving to look for herps on roads; it is a well-known phenomenon that herpetofauna use or cross roads at night for processes such as migration or basking in the road’s residual warmth after sunset (termed *thermoregulation*).

As biologists ourselves, we couldn’t resist adding some science to this hobby of ours. Because of modern land-use changes occurring or soon to occur in our area, including expanding housing developments and new and proposed infrastructure, coupled with a warming and drying climate, we sought to collect preliminary data on where herpetofauna were occurring on roads and which factors (or combination thereof) might help us better understand their road usage.

Previous studies have focused on major roads or highways—high traffic routes important in their own right for the tendency to negatively impact survival and migration. However, we aim to see what the story is like for more rural roads. In other words, pathways on urban-rural outskirts that have the potential to see increased traffic and/or development in the near future.

This strategy can give us a glimpse into “before and after” information if a putative new road or infrastructure is established. We also incorporate patches of both paved and unpaved roads to assess any differences therein.

Since spring 2018, we have been replicating

road-cruise surveys on several routes in southern Arizona, including along parts of Ironwood Forest National Monument (IFNM) and its surrounding areas.

We have been very pleased with our findings so



*An evening cruise, with sidewinder and a conduit search.  
Photos by Corey Shaw and Brian Blais*

far, both professionally and personally. Our results encompass data across road types, seasons, and animal groups. Note that we also include mammals and birds that interact with roads—these fauna are equally important to our ecosystem.

We have recorded nearly 200 herpetofauna detections, encompassing roughly 20 species and another 275+ mammals and birds. (We must be in the thousands for snake-esque sticks and toad-shaped stones.)

For every vertebrate encountered, we record spatial coordinates, age class, if found alive or dead, as well as environmental and traffic data. Over time, plotting these localities—like adding pushpins to a map—help to parse out any hot spots or cold spots—zones with oft-repeated (or nonexistent) wildlife usage.

These data are informative for managing human-wildlife conflicts (e.g., effective locations for wildlife crossing structures to mitigate vehicle-animal collisions). We’re also looking deeper into how environmental cues, such as season, climate, and moon luminosity, might influence herpetofauna presence on roads.

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On a personal level, we've been able to bring along volunteers to get a firsthand glimpse into what we do as biologists and how a simple stroll looking for animals and few notes can make a difference. We also found species that were new for us personally—after lifelong desires to see one. Several of us (who grew up elsewhere) found our first sidewinder rattlesnake in IFNM.

Our project is ongoing. Even with a nice data set to date, we understand that more information gained will only make for more robust answers to our scientific questions and be more useful to managers. Open standards are important to us, and our data will be available to other researchers, managers, and supporters.

We have been fortunate to have support and sponsorship from multiple local organizations, including Friends of Ironwood Forest. Our intent is to publish our findings in scientific journals, but we also supply our stakeholders with detailed reports, findings, and data so that future conservation endeavors have our baseline information. More so, we have created a design protocol that can be replicated elsewhere and over time.

As a final message, we encourage readers to find ways to get outside and enjoy our public lands and natural resources. Take time to

reflect on the little things, and if you see something that fascinates you, pause to digest your observation. Ask yourself what may be the reason(s) explaining what you're seeing. Then ask, would you want your children and future generations to stand in a similar spot down the road of time and be able to ponder questions of their own or enjoy the natural beauty they are beholding?

If you are passionate about your local environment and its future, you have many options to offer support. One growing opportunity is for "citizen-scientists" to volunteer their time to help researchers, managers, and local organizations better understand the natural world around us.

Technology now provides us with species observation and identification apps (e.g., iNaturalist, eBird, HerpMapper, Nature's Notebook) to easily report what we see, and there are other boots-on-the-ground opportunities locally.

We hope you enjoy the Sonoran Desert ecoregion as much as we do! Until then, our eyes are locked forward, scanning roads for the next spadefoot toad, glossy snake, or stranded burrito.



*Clockwise from top left: Couch's spadefoot toad (photo by Brian Blais), long-nosed snake (photo by Ian Adrian), lowland leopard frog (photo by Corey Shaw), and desert nightsnake (photo by Colin Brocka)*



# Organ Pipe Cactus in IFNM

by Bill Thornton



*Roskruge organ pipe in IFNM. Photo by Bill Peachy*

The organ pipe cactus (*Stenocereus thurberi*) is widely distributed through Sonora, Sinaloa, and Baja California in Mexico. However, with a low tolerance for freezing temperatures, its range in Arizona is limited to Organ Pipe Cactus National Monument and portions of the Tohono O'odham Nation eastward to the Slate Mountains south of Casa Grande, AZ.

Organ pipes in Arizona and northern Sonora are usually found on south-facing rocky slopes that retain enough heat to survive cold winter nights. In the prime habitat of coastal southern Sonora, organ pipes commonly reach heights of 30 to 35 feet. In Arizona they rarely exceed 15 feet.

A handful of outliers on the far western edge of the extended Tucson area (including two in

Ironwood Forest National Monument) are a botanical oddity and source of fascination for "cactus huggers".

Several questions come to mind. With the closest wild population 40 to 50 miles west, how did they get here? How old are they? Could more outliers be found?

Birds and bats are the most likely seed dispersers, and 50 miles is well within the range of several species. Like saguaros, organ pipes don't lay down growth rings, so age limits are, at best, educated guesses. In-habitat growth rates vary widely from a foot or more in a year with good monsoon rains to little or no growth in very dry years.

The largest organ pipe in Ironwood Forest is in the Roskruge Mountains near the southern end

of the monument. It is probably well over 100 years old. Another smaller specimen is in the Silverbell Mountains.

Might more organ pipes be found in IFNM? It's a definite possibility. Organ pipes were first planted at the Arizona Sonora Desert Museum in 1952 and now provide a source of seed about 10 air miles from the monument. A number of organ pipe seedlings have come up as volunteers on the museum grounds, and a two-foot youngster was found about a mile from the museum.

Saguaro and organ pipe seedlings less than three inches tall can be well concealed by their nurse plants and easy to miss in field surveys. Seedling organ pipes may already be present in IFNM but might not be seen for several years. It's not out of the question for larger plants to be there, too. An organ pipe in a remote area of the

Tucson Mountains was not noticed until it was at least 40 years old and nearly 10 feet tall.

So, next time you're "out there," be sure to watch for organ pipe cacti. You just might discover OP #3 in IFNM. If you do, please send us a photo and GPS coordinates if available. We'll announce the discovery but will not publish the specific location.

The organ pipe makes an attractive accent plant in a desert garden, with the caveat that stem tips can be damaged if temperatures drop below 30 degrees. Styrofoam cups provide good freeze protection down to the mid-20s.

Several local nurseries offer nursery-grown organ pipes for sale. See the Tucson Cactus and Succulent Society website for a list of member nurseries.

## ***Explore the Monument 2021***

Advocacy for the Ironwood Forest National Monument takes shape in many ways. Two vital yearly events provide us the opportunity to share, educate, and celebrate this unique public land. In years past, *Hike the Monument* (HTM), and *Meet the Monument* (MTM) have been the Friends of Ironwood Forest (FIF) two marquee events. But these are, admittedly, large public gatherings.

Like so many activities in our lives, COVID-19 abruptly changed our plans. Last year MTM was scheduled to occur in March, just as our community was responding to the first wave of the pandemic, and HTM was planned for November. It was a difficult call at the time to shut down those plans but, in retrospect, a wise one.

During the fall of 2020, the FIF folks charged with organizing HTM and MTM worked to come up with an event that offered the same opportunity and was also appropriate within the limits imposed by COVID-19.

Optimistically, a hybrid idea called *Explore the Monument* (ETM) was hatched. ETM was planned and would replace our two yearly events for the 2020-2021 winter season. The

idea was that ETM would play out over three phases or dates—one each in January, February, and March, all hosting five different events.

These experiences and hikes would focus on cultural and natural assets in the Monument and do so in small-group formats. The organizers thought this was a good approach that also fit with the restrictive pandemic environment; so did 105 folks who signed up for the hikes that were offered.

Unfortunately, Arizona became a hot-spot during and after the holidays as COVID-19 surged. So, on January 8th, in view of current and expected conditions and despite our best efforts, we decided it was appropriate to cancel ETM.

Like so many organizations, this has been a very difficult time to balance where we would *like* to be, with where we *are*.

We look forward to a time—hopefully this coming fall and winter—when we can again invite our community members to celebrate the beauty and wonders of Ironwood Forest National Monument.



## Members and Supporters

Thank you to everyone who has donated to Friends of Ironwood Forest. Your generosity and love of IFNM are doubly appreciated. If your name should have been on this list and isn't, please let us know: [gaile@ironwoodforest.org](mailto:gaile@ironwoodforest.org)

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# The Ironwood Gallery

*Send us your favorite photographs of IFNM.*



*Photo by Karl Klimek*

### **Your Financial Contributions at Work**

*The Friends of Ironwood Forest, with your generous financial support, was able to give a grant to Brian Blais (main researcher) and three other colleagues to study how herpetofauna use the rural roads of IFNM. The grant ran from May through September 2019.*

*Your contributions were the reason this basic science and monitoring project was able to be done. It will help guide mitigation planning as well as management activities in IFNM and will provide a baseline for further study. Thank you!*

*We care about IFNM. We hope you do, too. We rely on the financial support of members to help us with our mission of protecting the resources of IFNM, enhancing the visitor experience there, and creating awareness.*

*Please join FIF today. Basic membership is \$35, but additional contributions help us with our efforts. Contribute online with a credit card or PayPal at:*

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

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**Our Mission:** Friends of Ironwood Forest is a local non-profit organization that works for the permanent protection of the biological, geological, archaeological, and historical resources and values for which the Ironwood Forest National Monument was established.

FIF provides critical volunteer labor for projects on the Monument, works with the Bureau of Land Management and many other partners, and strives to increase community awareness through education, public outreach, and advocacy.

