SPRING 2019



# Friends of Ironwood Forest



# Senior Citizens of the Desert

## by Doug Kruetz

Ironwood trees: Call them senior citizens of the desert. Mature ironwoods around Tucson make the oldest saguaros look like mere youngsters by comparison.

"Estimates show some (ironwood) trees to be 800 years old, and it is likely that they live even longer," says the *Desert Ironwood Primer*, a publication by the Arizona-Sonora Desert Museum in collaboration with the U.S. Department of the Interior and Pima County. Many of the venerable ironwoods, which will bloom next month around the Tucson area, outlive saguaros that can reach "only" 150 to 200 years of age. They also outlast Douglas-fir trees that can live more than 500 years in the Catalina Mountains north of Tucson.

Creosote bushes are sometimes considered the oldest desert plants, but they are clones stemming from a single root system with each stem enduring for perhaps 100 to 150 years.

## Secret to Long Life

The secret to ironwood longevity? "Drought tolerance," said John Wiens, nursery horticulturist at the Desert Museum west of Tucson.

"They have a remarkable ability to withstand drought," Wiens said. "First, by losing leaves and twigs during light droughts. Second, by selectively losing complete branches during prolonged drought, while maintaining health in the others. And lastly, during the most severe droughts, they have the ability to 'die-back' completely to the soil level, and re-sprout from a healthy base when conditions improve.

"We've seen trees with signs of complete trunk die-back that has occurred several times."

## Where They Grow

"The range of the desert ironwood goes from around Lake Havasu, Arizona, at the north, south to near the Sonora-Sinaloa border and around La Paz in Baja California Sur, Mexico, as well as southeastern California," Wiens said.

The Desert Ironwood Primer notes that the range of the ironwood, a hardy legume tree, "closely matches the boundaries of the Sonoran Desert, the only place in the world where it occurs."

## A Useful Tree

Ironwood trees serve as "nurse plants" for saguaros and other cacti—providing safe sites for seed dispersal and protection of seedlings from extreme cold.

"The relationship between succulent cacti and ironwoods is especially well documented," according to the *Desert Ironwood Primer*.

"Studies show that without the protective cover of desert legumes, the distributional ranges of saguaro, organ pipe, and senita cactus would retreat many miles to more southern, frost-free areas. On freezing nights, the canopies of ironwood ... make the critical difference for vulnerable seedlings."

The trees have been used as a food source as their seeds are edible raw or toasted, Wiens said. He added that parts of trees have been used in medicines, household tools and ceremonies.

The dense, hard wood also serves as material for a wide variety of wood carvings.

"The most well-known contemporary cultural use of ironwood is by the Seri and Mexican carvers of coastal Sonora," says the *Desert Ironwood Primer*. "The Seri began to carve elegant, abstract renderings of native animals in the 1960s." Such carvings grace many homes in the Tucson area.



Photo by Julie Roederer

#### **Bloom Varies**

Ironwoods bloom profusely in the spring, with their blossoms lending a purple hue to the landscape. But the period of blooming varies from year to year.

"We take phenological data on plants in the vicinity of the Desert Museum," Wiens said. "Here, the average for full bloom in desert ironwoods is from around May 7 through the end of May. However, in 1986 and 1989 we had blooms beginning the third week in April. In 1982, it peaked in June. Last year, it began the last week in April and was finished by the third week in May.

"It is amazing how variable it is. Some years, like 1987 and 2011, due to drought or deep freezes, we have not had a bloom out here," Wiens said.

#### See Ironwoods

Ironwoods are found in many areas around Tucson, including parts of the Tucson Mountains and the grounds of the Desert Museum at 2021 N. Kinney Road. Many of the trees also grow at Ironwood Forest National Monument northwest of Tucson.

Cover photo by Scott Roederer

(This article first appeared in the Tucson Daily Star and is used with permission.)

# A New Name for an Old Cactus

by Bill Thornton

Whether you're a dyed in the wool "cactus hugger" or a casual observer, you may have noticed that many Fishhook Barrel cacti (*Ferocactus wislizeni*) in Ironwood Forest National Monument (IFNM) have unusually long, curled, and twisted spines.

This variation from the "norm" was noticed by authors of the *Field Guide to Cacti and other Succulents of Arizona* (published in 2017 by the Tucson Cactus and Succulent Society) and designated as a distinct subspecies, *F. wislizeni* ssp. *ajoensis*, "ranging from Casa Grande west to Ajo, toward Yuma and likely into Sonora, Mexico". The field guide also notes that "more field work is needed to map the range of ssp. *ajoensis*. When mapping is completed, IFNM will, in my opinion, be included.

Taxonomists engage in lengthy and sometimes heated discussions about how much variation is required to recognize a given plant as a distinct subspecies. So far as I know ssp. *ajoensis* is the first recognized subspecies of our common Fishhook Barrel.

The assumption that mutations not favorable to the survivability of the species are quickly eliminated from the gene pool begs the question: Why has a longer and denser spined Fishhook Barrel established itself over a considerable portion of the plant's entire range? The fact that moving west from Tucson to Yuma the climate becomes progressively hotter and drier offers an important clue. A denser cover of spines that protects the body of the plant from scorching summer sun would appear to offer a survival advantage that is perpetuated in the gene pool.

Consider the Many-Headed Barrel Cactus (*Echinocactus polycephalus*), found only in the hottest, driest desert along the Colorado River in Arizona, California, and southern Nevada. A very dense cover of spines enables it to survive and thrive where few other cacti or other plants are to be found. We can't be certain that *F. wislizeni* ssp. *ajoensis* is a similar adaptation, but it's a reasonably well-educated guess.

So next time you visit IFNM, take a closer look at the Fishhook Barrels. You just might see a plant that's been around for millenia, but has only recently been given a new name.



Photo by Bill Peachey

*Note: The* Field Guide to Cacti and Other Succulents of Arizona *is available locally in bookstores. Visit the Tucson Cactus and Succulent Society website and click on "Field Guide" for a list of dealers or to order a copy directly.* 

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

# **President's Update**

by Tom Hannagan

The world surrounding our support of the Ironwood Forest National Monument (IFNM) continues to expand. Our Friends of Ironwood Forest (FIF) are now well over 1,200 families, and they are, more important than their numbers, an increasingly active and engaged group.

When it comes to activities at the Monument, such as Meet the Monument (MTM), Hike the Monument, and volunteer workdays, our group of Friends are there. When it comes to advocacy, letting our elected officials know where we stand on continued protection, our group of Friends let their voices be heard. And, thank-fully, our Friends have also been generous with their continued financial support of our initiatives and events.

We continue to work with the local BLM office in supporting needed work on the Monument. Although the BLM Field Office has suffered budget and staff cutbacks, they remain committed to the preservation and safety of the IFNM. We do what we can to augment their personnel capacity and, occasionally, their finances to make sure the Monument is taken care of, including through this year's government shutdown.

We were able to finish the reconfiguration of the group campsite, expanding its capacity for RV campers and providing more space for MTM. There is a map to the group campsite (and MTM) on our website if you would like to drive out to see it.

We continue to grow our contacts with partners in our conservation efforts. These partners, who are listed on the FIF website, are quite diverse in nature, but all assist in various ways to help preserve IFNM. Some are larger conservation groups; some are commercial organizations with a conscience; some are more politically oriented groups able to address legislative needs; and some are other grassroots friends groups. We find that we can often leverage FIF's abilities, or bandwidth, substantially by coordinating our efforts with these partners.

The FIF board of directors are like volunteers on steroids. They are dedicated individuals who devote time and energy to the many tasks involved in planning and executing our events, as well as overseeing the day-to-day operations of FIF. My personal thanks go to them, each and all, for their shared passion and for the way they make it possible for FIF to exist and succeed.

One initiative that we plan to grow significantly in the coming years is our educational outreach. FIF's partnership with the Tohono O'odham Community College is continuing and has gone very well. We would like expand this kind of onsite outdoor education to other area schools. To this end we plan on granting funds to schools to cover transport expenses for teachers interested in integrating a public lands experience into their curriculum. This is a topic you will hear more about in the future.

It is somewhat satisfying that the message this year is not overly concerned about negative federal action against public lands. In fact some recent bipartisan federal legislation has been pro-conservation. However, we will not let our guard down.

The next known potential threat from federal action is the possibility of a new interstate highway route (called Interstate 11) through the Avra Valley. Such a route would dissect IFNM from Saguaro National Park and Tucson Mountain Park. This would have negative environmental impacts on the animal and plant life of the entire valley. We, and our partners, are involved in tracking this program and will keep you informed.

We are grateful for your continued support of this local treasure and remain open to others to join us in protecting the Monument. If you are not on our mailing list, please join us at www.ironwoodforest.org.

**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.

# Harvesting the Bean Trees

## Welcome heat and harvest ironwood seeds

by Barbara Rose

What can live for a thousand years, holds the Sonoran Desert together, and has sweet, nectarfilled blossoms and delicious, protein-rich seeds? Ironwood trees, found on warm southern slopes and the low desert lands of Baja Arizona and in the Sonoran bioregion. When in bloom, gorgeous lavender or pink pea-style blossoms blanket leafless gray branches, often as the foothill palo verdes are flowering.

Dry summer is the time to harvest bean-tree pods-ironwood, palo verde, and mesquite-and to welcome the heat, signifying that more harvests are near-specifically, saguaro fruit with the summer rains.

Ironwood seeds are a nutritious desert delectable, with a flavor reminiscent of peanuts. They can be prepared as edamame, sprouted or dry-roasted. All seeds have antinutrients which protect them from predators, so soaking, fermenting, sprouting, and cooking can make them more digestible.

When harvesting desert foods, remember to leave plenty for the other animals and consider adding ironwood or bean-tree habitat in your

neighborhood. Sadly, developers have been known to blade entire ironwood forests and name the streets for them. We can "re-wild" our urban spaces to include ironwoods, so that this keystone species will be around for future generations. In urban neighborhoods, ironwoods and their friends, planted along mulched, rain-welcoming, sculpted basins, create diversity, enduring shade, and beauty.

Keep in mind that desert legumes are best harvested before the rainy season to guard against potential unhealthy organisms that grow in more humid conditions.

As you become more connected to this amazing place, give thanks for those who came before us, and share your growing knowledge about desert foods and traditions.

## **Poppable Seeds**

Harvest tightly filled ironwood pods (they should look like over-ripe garden peas). The outer pods will feel somewhat sticky. Simmer whole pods in water for 15 to 20 minutes or until you see them begin to split open. Drain and sprinkle with a little salt, lime juice, and chile. To eat, pop the seeds into your mouth, warm or cool. They're especially good with a local mesquite beer or whiskey.

#### Ironwood "Peanuts"

Harvest when pods are dry, before they burst open and fall to the ground. Remove seeds from pods. Soak the dry seeds in water with a little vinegar for a day (to begin the sprouting process and leach out antinutrients). Then drain and sprinkle seeds with chile, garlic, herbs, a little oil if you like, and roast until crunchy in your solar oven. What? No solar oven? In Baja Arizona, with 350 days of sun? What are you waiting for?



Photo by Scott Roederer

## **Sprouts**

Soak dry ironwood seeds for a day, or until you see little points (the sprout) begin to protrude. Rinse and keep damp, repeating several times a day, just as you would any bean sprouts, until the sprouts are about a half-inch long. Remove the tough seed coats, which loosen during sprouting, and use in a stir-fry or another quick-cook dish to preserve their yummy taste and crunch.

## **Ironwood Sprouts Stir-Fry**

- 1 cup sprouted ironwood seeds, no skins
- 4 medium precooked potatoes, chopped
- 1 medium onion or cup chopped I-Itoi
  onion
- 1/4 cups wild or seasonal greens, chopped
- 1 tablespoon garlic
- Chile and salt, to taste
- 2 tablespoons oil or animal fat

Heat fat and fry potatoes and onions. As they brown, add spices. When close to done, add greens and cook to taste. Just before serving, add sprouts, gently toss, and cook a minute more. Serve with grated cheese or an egg on top, if desired.

*Visit <u>DesertHarvesters.org</u> for more information about harvesting, classes, and events.* 

Barbara Rose lives in a small solar rammedearth home at Bean Tree Farm in Tucson.

Bean Tree Farm supplies local desert foods and education to the community. Visit BeanTreeFarm.com.

(This article appeared in Edible Baja and is used with permission. Note: Edible Baja has since ceased publication.)

# 2019 Meet the Monument

The annual Meet the Monument (MTM) event was held on Saturday, March 16. The Friends of Ironwood Forest consider MTM our headline event of the year, and the planning, cost, and execution are significant for our organization. That said, we feel that the mission of the Friends is well met by MTM.

This year, we played to record crowds. Many attendees were visiting the monument for the first time. It's imperative to get the public out on

this land. Those of you familiar with Ironwood Forest National Monument (IFNM) know that it can be a bit of a challenge to find and an investment in time to get there.

MTM also provides a forum to inform guests through engaging expert presentations and to guide them on desert walkabouts. This year representatives shared "up-close" interactions with reptiles and scorpions, and guests had the opportunity to connect with monument hiking, ongoing buffelgrass and restoration projects, and BLM representatives.

Feedback from our 2019 event has been overwhelmingly positive. Getting the message out about the IFNM and our Friends organization was well worth the investment.

We thank all those involved in the planning and implementation of MTM and you, our members, for your support through contributions of funding, time, and advocacy.

These lands are OUR lands, but only by continued education and stewardship can we protect them from continuous threats.



# Students Introduced to Desert Ecology and their Cultural Past at IFNM

by Adrian Quijada, Ph.D. Science & Natural Resources Faculty

Tohono O'odham Community College is becoming the perfect institution to offer hands-on experiences and outdoor educational activities to Tohono O'odham students. During the weekend of April 20th and 21st, TOCC students participated in a field trip to the area of the Ironwood Forest National Monument (IFNM). IFNM was proclaimed in 2000 by President Bill Clinton, and it's one of the best representations of Sonoran desert ecosystems and ancestral legacy of the Hohokam and Tohono O'odham cultures.

Field demonstrations were sponsored by board members of Friends of Ironwood Forest (FIF), an organization dedicated to providing resources such as volunteers, expertise, public outreach, education, and advocacy on behalf of the IFNM.

Dr. Kelsey Yule from UA introduced students to the latest research on mistletoe ecology. She studied mistletoe evolutionary ecology as part of her Ph.D. dissertation. Later that day, William Thornton gave a talk about the ecology of Nichol Turk's Head Cactus, an endangered species occurring in IFNM. As part of the hands-on activities, students carried out a search for Nichol Turk's Head Cactus in the area. After this activity, geologist William Peachey introduced students to the science and natural history of Ha:sañ (Saguaro cactus) covering all the imaginable aspects of this plant, from adaptive anatomy and population dynamics to its pollination and fruit dispersal by bats.

Dave Barker guided students to the Cocoraque Butte Archeological District. The area contains innumerable examples of past human presence, which is related to Hohokam and ancient Tohono O'odham settlements. The most impactful experience was the petroglyphs and the presence of bell rocks that produce a range of tones and could have been used to create music.



Photo by Bill Peachey

The two-day experience for TOCC students reinforced the powerful significance of field trips, outdoor and hands-on activities as part of their education. This field trip was part of the goals expressed in a Memorandum of Understanding signed last February by Paul Robertson and Tom Hannagan, FIF board president, to provide students the opportunity to visit the area and perform educative and research activities at IFNM.

(This article appeared in the Tohono O'odham Community College newsletter, April 2018. Funding for the field trip was made possible by a grant from FIF.)

# Building Bridges: Planting a Desert Garden

by Bill Thornton

For the last several years, members of Friends of Ironwood Forest have worked to build an ongoing and mutually beneficial relationship with the Tohono O'odham Nation. We have completed two field trips with Dr. Adrian Quijada's students in desert ecology from Tohono O'odham Community College, focusing on the anatomy of the saguaro (O'odham name: Ha:sañ), ecological restoration of the formerly degraded Waterman site, and the archaeological site at Cocoraque Butte. A third field trip is scheduled soon.

On our first field trip Dr. Quijada mentioned that they had started work on a desert garden at the Sells campus. At the time the Tucson Cactus and Succulent Society had a good supply of rescued cacti on hand and made several available for the college.

Initial plantings included saguaros (*Carnegiea* gigantea), barrels (*Ferocactus wislizeni*), hedgehogs (*Echinocereus fasciculatus*), and one each Queen of the Night (*Peniocereus greggii*), and Huachuca Agave (*Agave parryi* var. *huachucensis*). Subsequent donations from our good friend Dan Bach of Bach's Cactus Nursery, included an Organ Pipe Cactus (*Stenocereus thurberi*), Senita (*Lophocereus schottii*), Fire Barrel (*Ferocactus acanthodes*) and Emory's Barrel (*Ferocactus emoryi*).



The campus desert garden now includes all three indigenous species of columnar cacti— Saguaro, Organ Pipe, and Senita—and fleshy fruited Fishhook, Fire, and Emory's barrels.

Tohono O'odham ancestral land included much of southern Arizona and northern Sonora, Mexico. The Ha:sañ (saguaro) played a major role in O'odham life and culture. Flower buds develop in April and May and open in June. The bright red fruit is timed to mature as summer "monsoon" rains arrive in July and provided a critical food source for the O'odham people after the hot, dry months of May and June when

> supplies were running low. The woody skeletons of dead Ha:sañ were and are extensively used as building material in a land where wood is scarce.

> Working with students and faculty from the Tohono O'odham Community College has been an interesting and rewarding experience. As water becomes ever more scarce and precious, we have much to learn from people who survived and thrived in this desert land centuries before the arrival of the first Europeans.

Photos by Bill Peachey



# 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

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