

During the Migratory Pollinator program in the 1990s, Museum and Mexican biologists studied bats, birds and insects that require cooperation to protect their habitats on both sides of the border. Their discoveries were used to craft conservation plans for these spe-

Military Macaw to craft conservation plans for these spenative to the reserve cies. In the early 2000s Museum's botanists helped

Mexican colleagues develop a comprehensive catalog of native plants for the borderlands later used to set conservation priorities for several rare plants. During this time, the Museum also worked with Nature and Culture International to establish a reserve near Álamos, Sonora to protect one of the few remaining areas of tropical deciduous forest, considered to be one of the most endangered habitats on the planet.

Today, as you'll read about, the Museum is partnering with Mexican and US organizations to conserve endangered species, from tiny pupfish to top predator Mexican gray wolves. We are supporting efforts to control invasive grasses and connect researchers and conservationists on both sides of the border. You can take a class or a trip, pick up one of our publications, or come visit the Museum to learn about and experience more of the Sonoran Desert!

# **Buffelgrass on the Border**

By Ya-Ching Lin, GIS Analyst

Caminantes del Desierto is a volunteerled, non-profit organization based in Hermosillo, Sonora that was created in 2017 to promote the restoration and conservation of the Sonoran Desert through civil engagement in public policy, community action, and environmental education. Their projects include Cerro Johnson, the Hermosillo Green Belt, and the Garmendia Walkway. Since 2021, they have organized a concurrent Save Our Saguaros (SOS) month in Hermosillo with volunteer buffelgrass pulls and a public education outreach campaign in coordination with the Desert Museum. February is Save Our Saguaros month and with the commitment of our community, we can keep buffelgrass, fountaingrass, and stinknet in check on Sign up to help at buffelgrass.org.

#### **Pupfish, Ponds, and Partnerships**

By Michelle Miner, Education Specialist

Sonoran Desert waters are precious and few – the endangered fish that live there are too! The special organisms who rely on disappearing freshwater habitats are at risk, so the Museum is on a mission: to prevent the extinction of rare desert fish like the Sonoyta pupfish (Cyprinodon eremus). These small, shimmering beauties are known for the brilliant blue-green colors of their males and their playful behavior – the name pupfish was inspired by puppies, after all! They have a remarkable ability to adapt and persist in bodies of water that vary greatly in temperature and salinity. From Tucson, Arizona through Puerto Peñasco, Sonora, several conservation ponds are maintained with partners like CEDO Intercultural to provide fish a home and safe place to reproduce. Locations include two schools in Sonora, one of which has joyfully adopted the charismatic pupfish as its official mascot. The Museum had a population of pupfish from 1981-2018 and plans to establish a new breeding population of the endangered C. eremus in the future. As beautifully as pupfish scales reflect sparkling light, the growth of this cross-border effort reflects a shared vision to cherish and protect even the smallest desert creatures.



# **Mexican Wolf Recovery: A Binational Effort**

By Shawnee Riplog-Peterson, Curator of Mammalogy and Ornithology

The U.S. and Mexico have collaborated on Mexican gray wolf recovery since its listing under the Endangered Species Act in 1976. The Letter of Intent to continue cooperation was signed by the U.S. Fish and Wildlife Service, Arizona Game and Fish Department, New Mexico Department of Game and Fish, and the Ministry of Environment and Natural Resources through its National Commission for Natural Protected Areas and the Directorate General for Wildlife in Mexico in July 2022. The Mexican gray wolf is just one of many species in the borderlands that rely on habitat in both countries, the ability to move between them, and international cooperation to survive.

By the 1970s all known Mexican wolves were in the care of zoos and other wildlife facilities in the U.S. and Mexico. Two of these wolves came to the Desert Museum in 1959 and 1960. They founded what is known as the Ghost Ranch lineage, one of the three lineages of Mexican gray wolves alive today. The Desert Museum has hosted 61 Mexican wolves, with 26 wolf pups born right here! The Desert Museum no longer participates in the captive breeding program but provides a home for wolves who help us educate our visitors about wolves' role in the ecosystem, and efforts to restore them to the landscape. Currently, we house 3 female wolves born at the Endangered Wildlife Center in Missouri. They are sisters from the same family pack- the eldest helped raise the other two and they are all closely bonded. Come visit Luna, Sol, and Estrella!

## An Oasis in the Desert: Managing **Endangered Mud Turtles**

By Courtney Christie, Keeper II

The glistening body of water at the edge of the vast desert landscape in Organ Pipe Cactus National Monument isn't a mirage—but a true oasis in the desert. This pond, Quitobaquito Springs, is only a stone's throw from the U.S. - Mexico border and has served as a water source for local Tohono O'odham people, Spanish explorers, and others for over 16,000 years. The pond is also home to several unique species, one of which is the Sonoyta mud turtle (Kinosternon sonoriense longifemorale) a subspecies of the Sonoran mud turtle and is the only location in the US that these mud turtles naturally occur. Due to the small area in which they are found, as well as threats to their habitat such as drought and pond-leakage, these turtles were officially added to the Endangered Species Act October of 2017.

Since the early 2000s, the Desert Museum has collaborated with Arizona Game and Fish, US Fish and Wildlife, and the National Park Service for the management of these endangered turtles. The Desert Museum has housed dozens of mud turtles during droughts when the pond water levels have been dangerously low, as well as during pond-repairs, with the goal of releasing the turtles back to the pond when conditions were back to normal. Eventually, the Museum was asked to hold onto a few dozen turtles as an assurance population. The Desert Museum is currently home to 32 Sonoyta mud turtles, 17 of which were captive-born on Museum grounds! The Museum is the only institution that has captively bred this species. There are plans to release most of the Museum's population back into the wild in 2024, while holding onto a select few as a breeding population

#### Mexican Garter Snakes: Reintroduction program with Arizona Game and Fish Department

The Mexican garter snake (*Thamnophis eques megalops*) is found in riparian areas in the southeastern region of Arizona and is listed as threatened due to dwindling populations that are affected by habitat loss, predation by introduced predators (such as the American bullfrog), and decreased availability of native prey (such as the Chiricahua leopard frog and Gila topminnow). Population trends have shown a consistent decrease which may eventually lead to the extirpation of this species in Arizona.

Since 2007, the Desert Museum has collaborated with AZGFD in an attempt to repopulate areas where natural populations of this snake species are dwindling. AZGFD provides the Museum with wildcaught adult garter snakes that are cared for year-round and paired together during breeding season so they can produce offspring during the summer. The Desert Museum is currently home to 18 Mexican garter snakes, 10 of which were captive-born at the Museum. In 2021, the Desert Museum helped with the release of 52 captive-bred baby snakes! Throughout the history of this program, we have bred more than 250 babies—most of which have been released back into the wild. Current studies by AZGFD are underway to determine the long-term success of this program.

## **Food Biocultural Diversity** in the Sonoran Desert

By Dr. Erin Riordan, Research Scientist



The Desert Museum is teaming up with the Next Generation of Sonoran Desert Researchers (N-Gen, www.nextgensd.com) to better understand the links between biodiversity and food security in the Sonoran Desert. N-Gen is a multinational community of investigators dedicated to the cultural and biological landscapes of the greater Sonoran Desert region. Desert Museum's conservation scientist Dr. Erin Riordan co-chairs N-Gen's Food Biocultural Diversity working group. This transdisciplinary group of researchers from the US and Mexico is investigating the relationship between food, biodiversity, and resiliency in the Sonoran Desert. Research within the group spans topics of food tradition and sovereignty, conservation of agrobiodiversity, urban agriculture, fisheries, climate adaptation, and sustainability. Riordan's own work focuses on supporting climate adaptation by conserving the wild, desert-adapted relatives of domesticated crops and expanding the use of desert crops and native foods. In April 2024, working group members will come together with the broader N-Gen community to identify collaborative actions and key research themes during a four-day summit in Álamos, Sonora.



# Visiting Mexico- with the Museum!

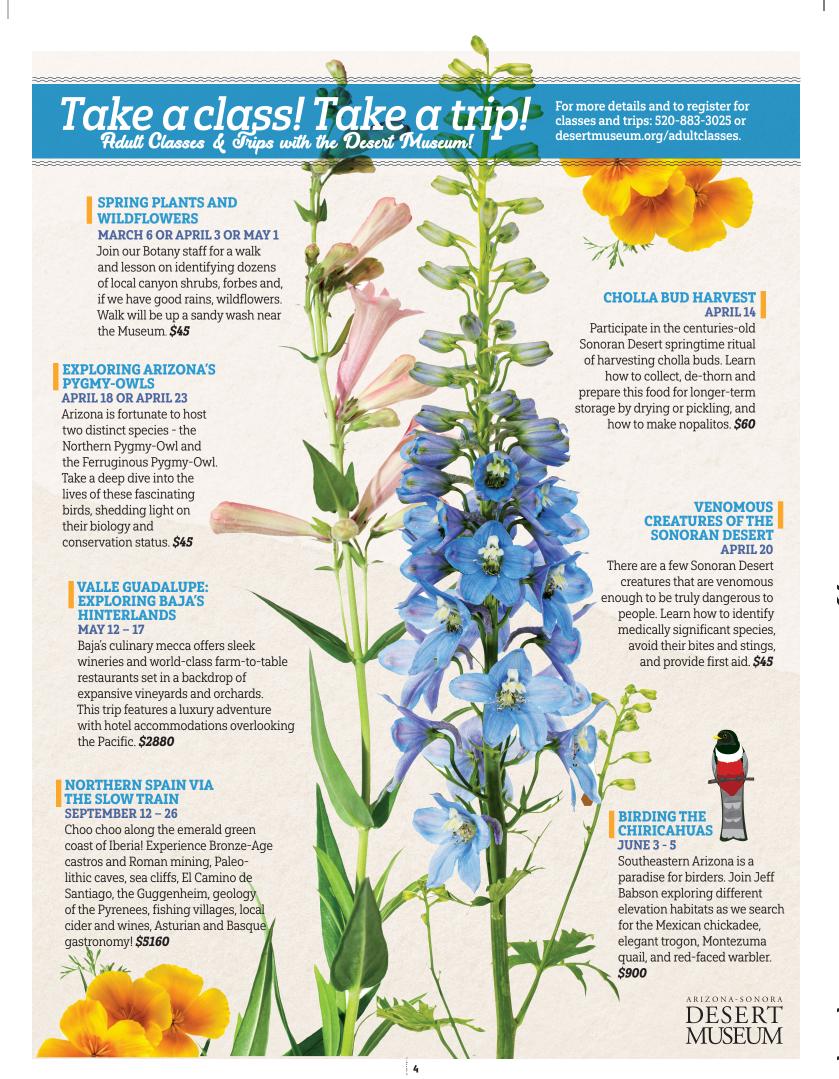
By Sonya Norman, Public Programs Coordinator

The Sonoran Desert is aptly named, as most of it lies in Sonora. Since the early days, the Museum has been leading public and research trips across the border. Many of the plants and some of the animals that we exhibit are from. and thus the original specimens had to be collected in, Mexico. Former Museum Research Scientists spent the 1980s and 1990s amassing floras (descriptions of all plant species within a region) of the foothills of the Sierra Madre Occidental. In the 1960s, our Associate Director Lewis Walker worked with conservation-minded cross-border colleagues to establish Isla Rasa as a bird sanctuary. This small gulf island is where almost all the Heermann's Gulls and Elegant Terns in the world go to breed.

Additionally, the Museum leads multiple public trips each year. Whereas the members' excursions of the 1960s and 1970s involved much camping in the desert and along beaches, today the trips tend toward more comfortable hotel stays. Over the past several decades the Museum has led several hundred trips, inviting thousands of travelers on excursions to experience the deep natural and cultural history of the region. With the volcanic moonscape of the Pinacates, the biodiversity of mangrove forests along the Sonoran coast, or the agricultural legacy of the Jesuit missionaries along the Rio Sonora, how can one not want to explore the other three quarters of our Sonoran Desert!



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# **Fun-tastic Word Games!**

Common languages in our area include English, Spanish, and Tohono O'odham. Here are some games to learn all three!



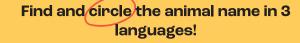
# Match the animal name to its language.

Lobo O'odham

She'e English

Wolf Spanish

Answer: O'odham: Şhe'e Spanish: Lobo English: Wolf



O'odham: komckud English: tortoise Spanish: tortuga

а	í	е	ģ	g	u	ş	l	р
ş	t	ñ	j	ĭ	f	r	V	i
k	0	m	С	k	u	ģ	ó	g
h	r	b	i	á	С	m	t	l
f	t	0	r	t	0	i	S	е
d	u	ģ	ó	ñ	q	W	m	У
V	g	р	n	Z	j	ģ	С	g
f	а	Х	h	ĭ	n	b	h	ú

Complete the story by filling in the blank with the animal word in the correct language.



**Word bank:** 

pez fish watopĭ

Once upon a time, a	_ was swimming in a pond. A child wandered up to the pond,				
Englis	h				
looked inside, and proudly	said, "I know how to say	in Spanish. It's	!" The		

fish replied, "İMuy bien! Soy un \_\_\_\_\_, but do you know my oldest name in O'odham?"

The talking fish surprised the child, but the child smiled and politely said, "Yes, hau'u, your

O'odham name is \_\_\_\_\_, and it's very nice to meet you!" \_\_\_\_ swam in a big circle

blowing bubbles of joy. They laughed together for a long time.

Answer: O'odham: watopi Spanish: pez English: fish



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ARIZONA-SONORA DESERT **MUSEUM** 



# colors of the desert

This is the premier event for the Desert Museum! Join us in-person for an evening in the Sonoran Desert, showing your support for Arizona's multi-faceted zoo, aquarium, botanical garden, natural history museum, conservation entity, and art institute.

Please join us in supporting the Arizona-Sonora Desert Museum's signature event.

WHEN:

Sunday, April 28, 2024

FROM:

5:00 p.m. – 9:00 p.m.

WHERE:

On the magnificent grounds of the Arizona-Sonora Desert Museum 2021 N Kinney Rd, Tucson, AZ 85743

ATTIRE:

Cocktail (comfortable shoes recommended)



Please visit: desertmuseum.org/gala for ticket prices and more information.



# WineDown with Wildlife

Saturday, March 23, 2024 6:00 p.m. - 9:00 p.m.

Join the Desert Museum for our fourth annual wine festival. WineDown with Wildlife. to help support the amazing wildlife in our care and celebrate World Wildlife Day. Sip on the best local and regional wines in the south-

Vist our website at: desertmuseum.org/calendar for more info



# **Summer Camps**

Our engaging camps will explore the Sonoran Desert region's diverse land, sea, animals, and plants. Campers will explore every nook and cranny of the Museum as they use science to make their own desert discoveries, observe live animals up close, create art, and chill out in our Packrat Playhouse. Sign up soon-spaces sell out!



Saturday, April 13th 8:30 a.m. - noon Cost: Included with Museum admission

Gather your friends, family, and fellow nature nerds for a day of searching, scouting and documenting the wild species at the Desert Museum! We will Party in a day — what surprise animals or plants can you find?

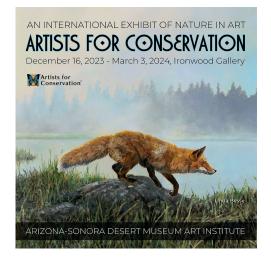
- Bioblitz the Museum
- Dance to some desert tunes
- Participate in a community art project
- Meet local organizations that celebrate
- diversity in all its forms
- Enjoy guided nature walks with experts

www.desertmuseumarts.com

ARIZONA-SONORA DESERT **MUSEUM** 

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The mission of the Arizona-Sonora Desert Museum is to inspire people to live in harmony with the natural world by fostering love, appreciation, and understanding of the Sonoran Desert.



#### ARTISTS FOR CONSERVATION

An International Exhibit of Nature in Art

# Ironwood Gallery

December 16, 2023-March 3, 2024 Daily 10 a.m. - 4 p.m.

Artists for Conservation (AFC) is a global collective of 500 artists from over 30 countries dedicated to championing wildlife and habitat preservation and fostering environmental education through the medium of art. At the heart of AFC's initiative is its annual juried exhibit. This traveling show strengthens preservation efforts by dedicating funds from art sales towards conservation causes. It also illustrates compelling conservation narratives through artworks that highlight the mastery of AFC member artists. After March 3rd, come see Society for Animal Artist's "Wildlife Wonders"! This compelling show will run March 8th to June 9th.



#### **ARTFUL CONNECTIONS:** AN EXHIBITION OF STAFF CREATIVITY

### **Baldwin Art Gallery**

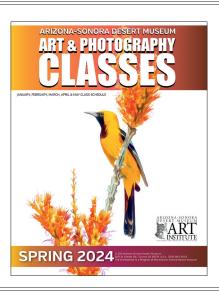
January 20-March 17, 2024 Daily 10 a.m. - 4 p.m.

Artful Connections is an art show that celebrates and appreciates the artistic abilities of the staff members across the Desert Museum.

This exhibition reflects works that have inspired individuals to think outside the box, explore new perspectives, and develop innovative problem-solving skills outside their everyday jobs.

Join us in the Baldwin Gallery and enjoy their work.

Spring classes began in January! Look for your catalog in the mail, call us, or check our website for current class listings. We hope to see you soon!





Arizona-Sonora Desert Museum

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The Arizona-Sonora Desert Museum is located on the ancestral lands of the Tohono O'odham (Desert People).