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Desert Museum Discovery

Fall 2021

The Bighorn Fire *in the* Catalina Mountains

*Jim Malusa, Research Scientist, School of Natural
Resources and the Environment, University of Arizona*

If you thought the Bighorn wildfire of 2020 was frightening, imagine if you were a plant. No legs, no running away. First smoke, then flames - and then what? What happens after the fire is out? It depends on the plant and its evolutionary history.

Most of the plants in the Catalina Mountains evolved with fire and have adaptations to prove it. Oaks, the most common trees in the Catalinas, can be burned to a crisp and yet resprout. So can grasses. Their roots don't burn, and new stems soon emerge and reach for the sky. Even where the Bighorn Fire was most severe - on the north side of Mt. Lemmon - the resprouting silverleaf oaks were over three feet tall in May of 2021, less than a year after the fire.

Higher up the mountain are the pines and firs. Most species can't resprout like an oak, and their ability to cope with fire depends on their protective armor. Douglas fir, Ponderosa pine, and Arizona pine have thick bark that protects the cambium, the sensitive tissues that carry nutrients and water within the tree. Still, if these species are severely burned, they die. New recruits must come from the seeds of nearby survivors, seeds with papery wings that typically fall not more than a hundred yards from the tree. Most

of the Bighorn Fire left a scatter of surviving trees as seed sources, especially in places like the Wilderness of Rocks, because rocks don't burn. But on the north slopes of Mt. Lemmon, the Bighorn Fire wiped out large swaths of pine and fir. Lacking a seed source, and with a hotter climate increasingly hostile to pine and fir seedlings, these slopes will likely come back as an oak shrubland.

Along the base of the mountain is Sonoran Desert scrubland, comprised of plants that are adapted to survive drought, not fire. They conserve water in all sorts of ways, including the trick of having few leaves or none. The palo verde tree and the saguaro make their food from the sun with photosynthetic bark or skin - that's why they're green. But if this thin green tissue is scorched by fire, it can't grow back. With the recent spread of exotic fire-adapted species like buffelgrass and fountain grass comes the threat of losing the palo verde and saguaro. In 2019 the Mercer

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Close-up of Ponderosa Pine's thick, layered bark.



Douglas fir, Ponderosa pine, and Arizona pine have thick bark that protects the cambium, the sensitive tissues that carry nutrients and water within the tree.

fire in the Catalinas was ignited with a lightning strike and dense patches of buffelgrass fueled the deaths of dozens of saguaros and palo verde trees before being extinguished by the monsoon. The buffelgrass soon resprouted, ready to deliver the final blow with the next bolt of lightning.

The lightning that ignited the Bighorn Fire struck in desert grassland, above the Sonoran Desert scrub.

Heat rises, and the fire raced uphill into oak woodland and beyond, but crept downhill into the scrub, where a combination of wind, rock, and fire lines created by hardworking crews kept it from reaching the thickest stands of buffelgrass. The Desert Museum is leading efforts to control buffelgrass and fountain grass, and to preserve the keystone species of the Sonoran Desert, the saguaro, for generations to come.



WE HOPE OUR STAFF, VOLUNTEERS, DONORS, MEMBERS, AND VISITORS RECOGNIZE THAT FOR THE MUSEUM TO PROTECT BIODIVERSITY REQUIRES WE EMBRACE HUMAN DIVERSITY.



By Craig Juany, Executive Director

DIVERSITY and the DESERT MUSEUM

AS the Executive Director of the Arizona-Sonora Desert Museum, I spend a lot of time reflecting on how to better execute our mission and increase our relevancy within our community. Today, I write directly to you, with great humility and a confession because we are not fully meeting these goals. The truth is, there is no way we can, if we do not center the knowledge that harmony in the natural world depends on people, as we are both the largest threat to and the greatest resource in ensuring the conservation of the Sonoran Desert. When I think about people, internal and external to the Museum, I know that we have not done enough to ensure that we are fostering love and appreciation, and honoring everyone's connection to the Sonoran Desert. For far too long, we have shied away from conversations about race, ability, environmental justice, and all of the complicated realities affecting the people of this region.

We know a thorough self-examination of our policies, practices, and programs is necessary for us to build a more equitable future. Therefore, we hired Justice Outside to lead us through the exploration, analysis, planning, and initial steps of this process. Justice Outside believes that people of all ages and backgrounds should enjoy, explore, and find meaningful work in the outdoors. From healing to exploration, from community building to self-discovery, they know that the environment provides important physical and mental health benefits. Well versed as mentors for people and organizations who are committed to greater awareness and weaving social justice into the fabric of organizational culture, they are working with us to identify specific steps so that we may become a more diverse organization.

With this in mind, we have been taking a hard look at ourselves and our programs, practices, and policies. Staff are committed to using what we learn to transition to a more diverse, equitable, accessible, and inclusive organization. To succeed will require that we understand and accept our strengths and weaknesses as well as learn what steps we need to take to ensure our mission is more than words on our website, but a living, breathing commitment to the desert and the people who love it.

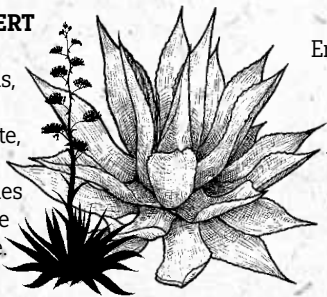
We believe this initiative will bring about positive change that will help us recruit and retain a more diverse workforce as well as engage a broader base of members and visitors. This work won't be easy or happen overnight. However, we hope our staff, volunteers, donors, members, and visitors recognize that for the Museum to protect biodiversity requires we embrace human diversity. We need to identify and eliminate systemic barriers so that we create an inclusive environment wherein people feel comfortable, welcomed, and respected.



Take a class! Take a trip!

Adult Classes & Trips with the Desert Museum!

NATURAL HISTORY OF THE SONORAN DESERT
October 30 & 31; 8:00 a.m. - 4:30 p.m.
Become more knowledgeable about the animals, plants and landscape of the Sonoran Desert! This two-day class covers desert ecology, climate, mammals, birds, reptiles, botany, and geology. We will take a plant hike, get a behind-the-scenes tour through the herpetology building, and have the opportunity to meet some animals up-close. **Members \$140; Non-Members \$155.**



RANCHO DE LA OSA • DECEMBER 3 - 5
Enjoy the ambiance of this exceptionally historic ranch. It rests in the desert grasslands along Arizona's southern border with the dramatic backdrop of Baboquivari Peak always in view. We will visit the Buenos Aires National Wildlife Refuge, which offers birding for the masked bobwhite quail, take a geology hike, and tour the border town of Sasabe. Come nighttime, we are treated to cowboy poetry, ranch stories, and a star-studded sky. **\$850.**

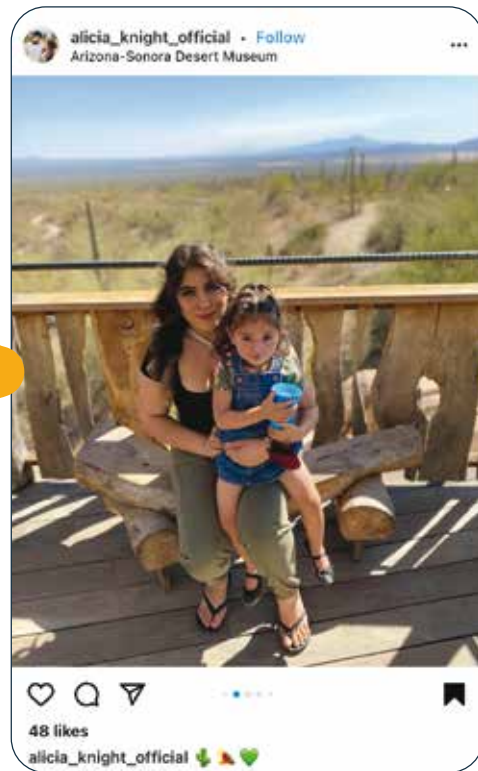
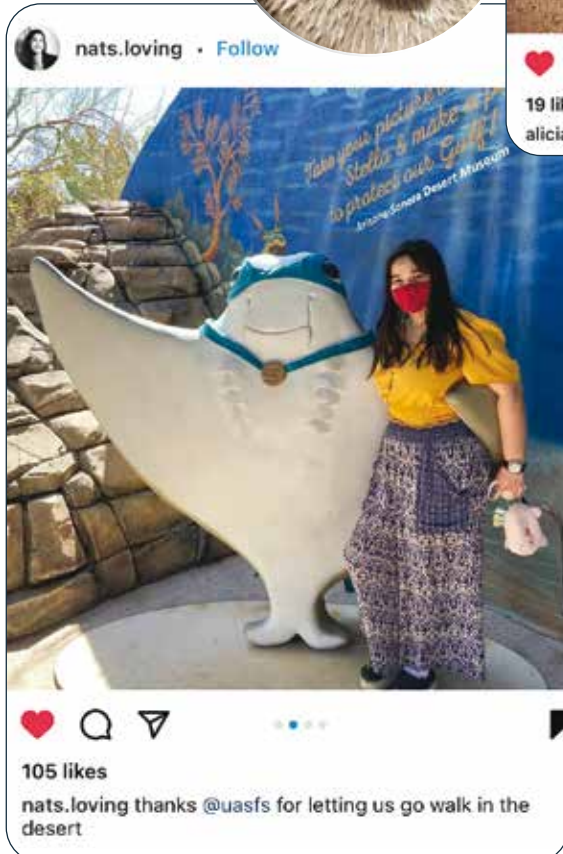


RÍO SONORA HERITAGE TOUR
January 14 - 17, 2022
Travel to tiny Banámichi and become immersed in rich Mexican culture. We'll explore towns along the Río Sonora, experiencing the local way of life. Highlights include: talented musicians, a performance by Cecytes Folklorico dance troupe, and an afternoon in a mesquite bosque watching Mezcaleros work an active Bacanora still. **\$1150**



BAJA PENINSULA • NORTH TO SOUTH
APRIL 2 - 13, 2022
Led by Jesús García and geologist Bob Scarborough, we motorcoach down the entire length of Baja, from chaparral through fertile coastal habitat, into a bizarre desert featuring forests of cirio (boojum) and cardón. We get off the grid for a two-day gray whale "glamping" experience. Southern coastlines boast white sand beaches, marine life and iconic Baja landscapes. **Price TBD.**

SOCIAL MEDIA SPOTLIGHT



WE LOVE SEEING THE MUSEUM THROUGH YOUR EYES!
Tag @desertmuseum and use #desertmuseum for a chance to be featured!

Sonoran Desert Crossword

Hey Kids!
Fill out the crossword puzzle to learn more about your desert backyard!



ACROSS

- 3. Home for foxes
- 4. Desert rodent that collects shiny items
- 5. Bird that creates holes in saguaros to make a nest
- 8. An animal with eight legs, a stinger, and pincers
- 10. Common name for the iconic *Carnegie gigantia*
- 11. Animals active at night
- 15. Gray foxes are great at climbing _____

DOWN

- 1. Animals that must hunt other animals for food
- 2. A snake that eats rattlesnakes
- 6. Animals with a plant rich diet
- 7. Arizona's State Mammal
- 9. A female deer is called a _____
- 12. Another name for the red fruit on prickly pear
- 13. Colorful name for a baby javelina
- 14. The only mammals that can fly

Wordbank:

BATS
PREDATORS
TREES
NOCTURNAL
TUNA
KINGSNAKE
SCORPION
PACKRAI
HERBIVORES
SAGUARO
RINGTAIL
SAGUARO
DOE
WOODPECKER
DEN

PLANTING WITH A PURPOSE



Discover and purchase plants that attract pollinators!

PLANT WITH A PURPOSE!

Fall is the perfect time to refresh your landscape (especially after all of this rain!)

OCTOBER 16 & 17
ANNUAL PLANT SALE
7:00 a.m. - 2:00 p.m.

More info:
desertmuseum.org/plantsale

EVER WONDERED WHAT IT'S LIKE TO FEEL THE BRUSH OF VARIOUS BIRDS-OF-PREY? OUR POPULAR PROGRAM, RAPTOR FREE FLIGHT, STARTS ON OCTOBER 30! THERE IS NO BETTER TIME TO WATCH THESE AMAZING AERIALISTS THAN IN EARLY NOVEMBER. **PRO TIP: PLEASE ARRIVE AT LEAST 20 MINUTES EARLY TO PARK AND WALK TO THE VIEWING AREAS.**



READY SET FLY!



SHOWS ARE DAILY (EXCEPT WEDNESDAY) AT 10:00 A.M.

Support something you love..

Power your passion for the Arizona-Sonora Desert Museum! Your donation supports the Desert Museum's mission, as well as what matters most to you. Whether it is supporting animals, gardens, education, conservation, or art, your generosity maintains the Museum as a world-class organization, right here in Tucson, Arizona.

THANKS TO YOU we are able to continue our great work in the Sonoran Desert.

There's no museum without "u".



Curious about more ways to support? Contact philanthropy @desertmuseum.org

DONOR recognition

ARIZONA-SONORA
DESERT MUSEUM

The creation of a thousand forests is in one acorn.
- Ralph Waldo Emerson



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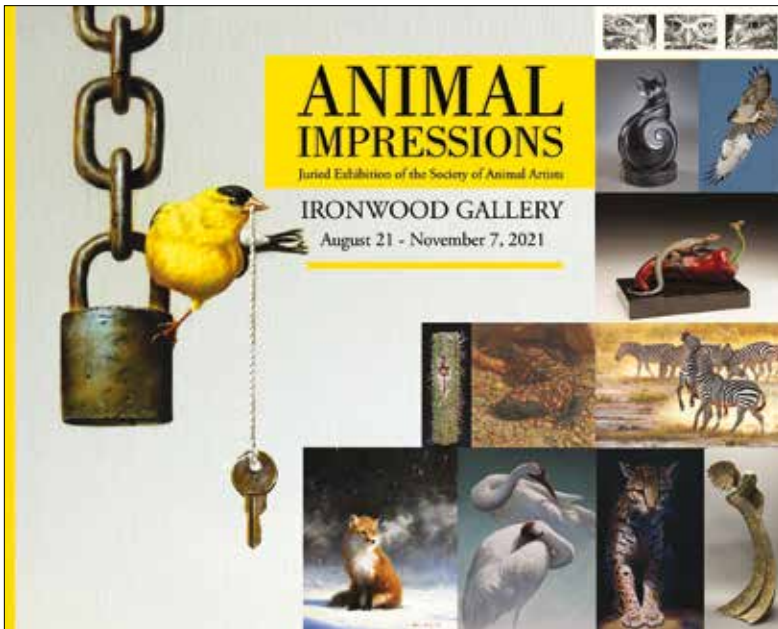
In memory of Virginia Zachariasen
Jane Gastineau

DESERT MUSEUM ARTS UPDATE

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.



ANIMAL IMPRESSIONS August 21 - November 7, 2021

This exhibition in the Ironwood Gallery explores how animals inspire appreciation of the natural world, highlights our connection to the animal kingdom, and to our own humanity. Animal Impressions is a collection of works from members of the Society of Animal Artists that consider and interpret these questions through a variety of mediums.

OCTOBER GALLERY HOURS
9:00 a.m. – 4:00 p.m. Daily

ART STORES Live and online!

Visit our art shop in the Ironwood Gallery!

It is full of works by artists whose pieces appear in the *Vanishing Circles* collection. We also have stickers, books, bronze sculptures and more. Can't decide what to get?

Let Rachel Ivanyi take you on a virtual behind-the-scenes adventure to shop for original art online or at the Museum.

FALL ART CLASSES Discover your talent...

...as an artist while enjoying the Desert Museum. The Art Institute offers individual classes as well as a certificate of completion program in nature art. The unique backdrop of the Museum becomes your classroom, while you draw, paint, or photograph birds, mammals, insects, and desert botanicals. For a full listing of classes visit our website www.desertmuseumarts.com or call 520-883-3024.

Reserve your copy of *Treasured Legacies* today!

This new book from Desert Museum Press will take you through 70 years of education and conservation at the Museum. Delight in the charming scratchboard art of Priscilla Baldwin and her message of *"Conservation: The Gift of Life"*.



Reserve your copy now.
Email: arts@desertmuseum.org



Arizona-Sonora Desert Museum
2021 N Kinney Rd., Tucson, AZ 85743-9719
Phone (520) 883-2702 · Fax (520) 883-2500
www.desertmuseum.org

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