

When loss of habitat, severely reduced species population, and limited gene pool are the critical issues facing an endangered species, what options are at hand to create a positive outcome?

What tools can the Desert Museum's team of experts use to circumvent these serious problems? Well, for starters – collaborations. The Arizona-Sonora Desert Museum's on-site animal care staff has access to many types of highly specialized assistance through their network of global partnerships with other zoos and a variety of diverse wildlife conservation groups. By making use of such partnerships the Museum has achieved a gratifying success for the ocelot (*Felis pardalis*).

A recent result of the Museum's global collaboration is a small, tawny fur ball – a kitten born to Arieta, the Museum's resident adult female ocelot. This kitten is an impressive example of how the Museum

collaborated with an assembled team of experts who were all committed to one goal – ensuring that Arieta would conceive and give birth.

#### The Ocelot in Arizona

Ocelots are among our region's rarest mammals. Long thought to have vanished from Arizona somewhere in the 1960's, local conservationists were thrilled in 2011 when a wildlife camera spotted an ocelot in the wild.

In addition to the small number of ocelots in Arizona, wildlife experts know that small populations live in both northern Sonora,

Mexico and in Texas but these independent groups are not large enough (or genetically diverse enough) to assure their long-term stability in the wild.

Indeed, long-term survival of a healthy ocelot population in the Sonoran Desert faces very long odds. One of the most serious concerns that threatens these small cats is the ongoing loss of habitat. Elusive and solitary, ocelots prefer habitats that offer dense cover (thorn scrub, live oak, and riparian areas) and the relentless expansion of construction related to human habitat and commerce is quickly eliminating such areas. This expansion also creates habitat fragmentation where populations are further isolated and migration patterns are interrupted preventing intermingling and reducing the chance for genetically diverse reproduction further compromising the ability of these animals to thrive.

The ocelot was declared "endangered" in 1982 under the U.S. Endangered Species Act and is one of 25 endangered animal and plants species that are represented in the Museum's living collection.

#### **Collaboration & Cooperation**

With the global ocelot population declining, the Desert Museum has collaborated with some of the world's foremost breeding experts and has employed the most sophisticated of modern methods available to combat extinction of this small cat.



The Museum supports the Species Survival Plan (SSP) program which is coordinated by the Association of Zoos and Aquariums (AZA).

The SSP was developed in 1981 as an ambitious global blueprint to help ensure the survival of species that are threatened or endangered in the wild. To fulfill its mission the program maintains a vast database of geographic and genetic information to aid in the

recommendation of assigning appropriate breeding pairs and animal transfers among zoos. Promoting and maximizing genetic diversity among targeted animal populations as well as managing demographic distribution, long-term sustainability, and the overall health of the species are all key factors in the process.

#### **Ocelot Species Survival Plan**

The AZA's established Ocelot Species Survival Plan makes breeding, management, and conservation of the endangered ocelot a priority. The Ocelot SSP oversees approximately 95 ocelots cared for at 52 North American zoos and the Desert Museum was identified as a desirable partner. Specifically, Arieta, the Museum's resident adult female ocelot (or "queen") was selected as an ideal candidate for the SSP's innovative AI (artificial insemination) program because of her Brazilian lineage. Currently, AZA-accredited institutions are collaborating to establish a robust Brazilian ocelot population whose gene pool will be managed in conjunction with ocelots already in Brazilian zoos.

A previous attempt to breed Arieta with the Museum's resident male ocelot was not successful. Another attempt was not feasible due to the male's observed aggressive behavior. Because of this noted behavioral incompatibility the Museum did not want to put either animal at risk during another attempt at breeding the pair.

In an extraordinary combination of technique, skill, and patience the ASDM team collaborated with the Cincinnati Zoo's Center for Conservation and Research of Endangered Wildlife (CREW) to impregnate Arieta through an innovative, fixed-time AI method.

#### **Precision Timing**

CREW's Director of Animal Research (and Coordinator of the Ocelot Species Survival Plan for the AZA), Dr. Bill Swanson, performed the procedure at the Desert Museum. Each step of the delicate procedure was orchestrated masterfully.

The first step was to suppress natural ovarian activity so the queen received daily doses of progesterone mixed into her food. Hormone injections were then carefully timed and precisely administered to induce ovulation (a process that is normally triggered by the presence of a male). The ovulation had to be perfectly synchronized with the insemination process. The insemination itself was performed using a new laparoscopic oviductal method that had been developed by the CREW team.

Unlike traditional AI methods in which the sperm sample is deposited into the uterus, the procedure performed on Arieta injected the sperm directly into the oviducts. This technique's advantage is overall better precision. This is particularly important when there is a small sample or a sample of poor quality – neither of which is uncommon in small, wild male cats.

#### Planning, Patience, & Pay Off...Yes? No?

According to the Museum's Curator of Mammalogy and Ornithology, Shawnee Riplog-Peterson, gestation was predicted to be between 79 and 85 days. The countdown began and that meant close monitoring of Arieta through daily analysis of her fecal material. The chemistry displayed therein would support whether or not the AI procedure "took." The initial chemistry analysis "looked very promising," according to Riplog-Peterson but things inexplicably changed. In fact, there was a moment when the chemistry seemed to point to a disappointing, failed attempt. But that, too, changed and 82 days later the Museum was delighted to welcome a healthy, female ocelot kitten, as its newest resident.

This collaboration between ASDM and CREW confirms that AI can be a valuable tool to assist in the efforts to combat species population decline when conventional methods of natural breeding are not possible. When she is a bit older the kitten will likely be moved to another zoo to further diversify the ocelot population within the AZA member organizations.

#### Range of Methods

The procedure that was successful with Arieta is just one of several options that CREW scientists employ to enhance the reproductive success of the ocelot in human care. These methods include performing in vitro fertilization, cryopreservation of sperm and embryo specimens, and embryo transfer. All of these procedures have produced healthy ocelot offspring as part of the AZA's cooperative genetic management of the cat's global population.

## Global Importance of these Efforts

To ensure effective population management in threatened and endangered species worldwide, many considerations are weighed. In addition to reproductive planning (and its counterpart, contraception), genetic diversity, age distribution, and general life enrichment of the animals are also assessed.

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**Other Similar Successes** 

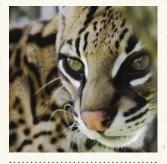
The Ocelot Species Survival Plan is one of nearly 500 such programs available to assist with the management of threatened animal populations. The Museum has previously collaborated with SSP for other resident species. In particular, the Museum's Bighorn Sheep have benefitted from the SSP program with the birth of two lambs in 2016 and two more in 2017. With the deep reservoir of genetic information maintained by the SSP database, the Museum can aim to achieve a Bighorn Sheep herd population that is self-sustaining. That outcome would be heralded as a considerable success for this species.

Other species in residence at the Museum that have participated in captive breeding programs with the SSP include the Mexican Grey Wolf and the Thick-billed Parrot.

# Each step of the delicate procedure was orchestrated masterfully.







The ocelot
was declared
"endangered" in
1982 under the
U.S. Endangered
Species Act
and is one of
25 endangered
animal and
plants species
that are
represented in
the Museum's
living collection.

#### The Museum's Mission

An integral component of the Arizona-Sonora Desert Museum's mission statement is to act as a wildlife steward in the Sonoran Desert by promoting biodiversity, public education, and conservation of animals in the wild. This includes creating suitable habitats for endangered species like the ocelot and promoting awareness of the importance of this species.

Thanks to its large, supportive, and engaged membership base the Museum can continue this important work and expand its initiatives to promote the sustainability of the ocelot and other species that are threatened in the wild.

# OCELOT NAME to be AUCTIONED at GALA!



The winning bidder at our April 28th Desert Gala live auction gets to name the ocelot kitten!

Visit: facebook.com/ desertmuseumgala, for details.







In 1993, former Trustee Margot Denny had a vision - a lovely dinner held on the grounds of the Arizona-Sonora Desert Museum. Over 25 years later, the Desert Gala has grown exponentially and continues to provide a one-of-a-kind experience for some of our most valued supporters. This annual fundraising event helps to raise much-needed support for the nonprofit Desert Museum, and serves as a forum to raise awareness about the Sonoran Desert and the Museum's mission.

This year the Desert Museum will host its 26th annual Gala on Sunday, April 28, 2019 from 5-9pm. The theme for the upcoming event will highlight the sights, sounds, tastes, and magic of the nighttime in the Sonoran Desert.

From the adventures of the packrat to the pollination of the saguaro, many stories of the Sonoran Desert take place after sunset. Illuminated by the incredible night sky, the desert floor transforms into a stage of action, adventure, drama, and beauty. The yipping of coyotes, hooting of owls, and the chirping of bats provides the soundtrack for each act, as night-blooming botanicals come to life in the dark. The Desert Museum is excited to showcase these stories at the 2019 Gala.

You are encouraged to Like and Follow the new "Arizona-Sonora Desert Museum Gala" Facebook page. There, you can preview

auction items and get details on the evening's menu, entertainment, and other festivities. The Museum is proud to host this spectacular event for the community, and is excited for a memorable evening of desert lovers supporting the Museum.

We would like to acknowledge the hours of Gala planning and preparation by ASDM staff, and the 2019 Desert Gala Committee. There are countless community sponsors and donors who contribute greatly; you are each an important partner to the Arizona-Sonora Desert Museum. Thank you for your support!

Select sponsorship and underwriting opportunities are still available. Purchase raffle tickets to win a life-sized bronze desert tortoise sculpture by local artist Mark Rossi. A new Golden Raffle ticket is available this year for live auction attendees - find more details online!

This grand affair always sells out, and as one of the premier events in southern Arizona, is limited to 550 guests. For more information, availability, or to purchase raffle tickets, visit www. desertmuseum.org/galatickets or contact Lynnae Wenker at lwenker@desertmuseum.org | 520/883-3005.

The Gala will feature fine dining by Craft Culinary Concepts and Maynard's Market, wines from Rancho Rossa Vinyards, live music, wildlife demonstrations, docent-led stargazing stations, a paddle raise to support animal and veterinary care at the Museum, and amazing silent and live auction items including:

#### A Lake Tahoe vacation home stay

Locally-inspired art, photography, and botanicals

Overnight packages at the Arabella Hotel Sedona, Loews Ventana Canyon Resort, Letson Loft Hotel,
White Stallion Ranch, the Phoenician, Kimpton Hotel Palomar, JW Marriott Starr Pass, Hacienda del Sol, and more!

A private wine tasting for 8 from Kief-Joshua Vineyards in Elgin, AZ

A 2-hour guided tour at Spencer's Observatory

Premium VIP experiences at the Desert Museum



# CLASSES table THIPS THIPS



Registration Information: call 520/883-3025 or log onto desertmuseum.org/adultclasses. Prices are 10% more for non-members.

#### CLASSES

## Pine Needle Baskets April 20

Create unique baskets using coils of pine needles attached to a ceramic or wooden base. We will use needles from Apache pine of southern Arizona. Several different stiches and decorative finishing touches will be demonstrated. Participants will go home with a basket as well as an instruction manual. **\$70** 

#### Saguaro Fruit Harvest

#### June 21 or 22

High summer is the beginning of the O'odham calendar, as this is the time to harvest saguaro fruit. Spend the morning gathering and preparing fruit in the traditional O'odham manner, using a harvesting pole made from the ribs of the giant cactus, and explore the cultural and ecological significance of the saguaro. Includes lunch. \$65

#### Prickly Pear Harvest August 17 or 25

August is the season that the beautiful red fruit of the prickly pear cactus ripens. This plant is ubiquitous and edible! Learn how to collect and process the fruit, as well as how it can be used in different dishes. You will also prepare the tender green pad for "nopalitos". Includes lunch. \$65

## Natural History of the Sonoran Desert

#### October 26 & 27

Would you like to be more knowledgeable about the animals, plants and landscape of our desert? This two-day survey course 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 maybe even be treated to a personal Raptor Free Flight experience! \$130

#### TRIPS

# Biodiversity & Animal Behavior of the Chiricahua Mountains: a Summer Field Camp

#### **July 7-13**

Cool off in the mountains! Southeastern Arizona contains some of the richest reservoirs of plant and animal life on earth. In addition to our own projects with Mexican jays, lizards and slave-making ants, we will have the opportunity to interact with other scientists, attend their seminars, and accompany them into the field. Our base is The Southwestern Research Station of the American Museum of Natural History. Includes instruction, all meals and lodging for one week. \$1,150

#### Granada: a Fantasy of "Lace in Stone"

#### September 23 - 26

If you are contemplating our Spain tour, perhaps consider a four-day extension to Granada. Its main attraction, the Alhambra, is a mighty fortress that houses an extraordinarily delicate and beautiful Moorish palace begun in the 13th century. This was the palace of the Nasrid Sultans, rulers of the last Spanish Moorish Kingdom. We will finish off with a day trip into the Andalusian countryside to tour an olive oil cooperative and a terrace irrigation system, originally constructed in medieval Arab times. \$1,100

## Spain: Moors & Christians, Olives and Wine

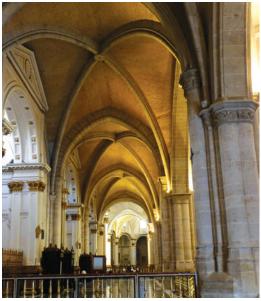
Tracing the Cultural and Agricultural Roots of the Southwest

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#### September 9 – 22

In the Southwest we use the adjective "Spanish" frequently and loosely. Indeed, many elements of our culture originate in Spain. But, the 16th -18th century Christian Spain that colonized the Americas was the sum total of its previous occupants - Arabs, Jews, Visigoths and Romans. Join us in an exploration of the cathedrals, markets, orchards, towns, ancient castles and sunny beaches with an eye for the influencing factors of these peoples. Tour a rural winery during the grape harvest season, sample tapas and wines, learn to prepare paella, sit in the same cathedral where Ferdinand and Isabella received Columbus upon his return from the New World, and see the Holy Grail. Destinations include Barcelona. Valencia. Toledo. Madrid, as well as two small towns. This trip is very personalized with a maximum group size of 20. \$3,990







#### Arizona Gives Day!

#### Tuesday, April 2

April 2nd is Arizona Gives Day, a powerful 24-hour online campaign that inspires you to give generously to Arizona nonprofit organizations – hopefully the Desert Museum is at the top of your list! To donate to the Desert Museum, please visit www.azgives.org/desertmuseum. Thank you for your valuable support!



#### ART EXHIBIT:

Feathers - A Solo Exhibition by Chris Maynard through February 10, 2019, Thru July 7, 2019 Ironwood Gallery

Chris Maynard carves legally obtained, naturally molted feathers into intricate art. Feathers can represent flight, transformation, and a bridge between our present lives and our dreams, Mr. Maynard is grateful that his art has hit a soft-spot in the hearts of many people and cultures.

#### PLEASE NOTE:

The Ironwood Gallery is open daily from 10 a.m. – 4 p.m. but is occasionally closed for special events. To confirm hours of operation call 520/883-3024.



#### **MOTHER'S DAY BRUNCH**

#### Ocotillo Café • Sunday, May 13 11am-3pm

All members receive a 10% discount and all Moms receive a complimentary rose and Mimosa! Enjoy a special a la carte menu featuring soup, salad, appetizers, entrees and desserts. Make reservations today by calling 520/883-3046. Review the menu: desertmuseum.org/mothersday.



### COOL SUMMER NIGHTS BEGIN ON MAY 18TH!

#### On the grounds of the Desert Museum from 5-10 pm

During hot summer days, we tend to shelter indoors as much as possible and we may become restless and bored from staring at screens all day. The cooler evenings will bring some respite and we hope a visit to the Desert Museum where you can watch nocturnal animals like bats performing aerial acrobatics in pursuit of dinner, beavers splashing around in their pond, scorpions glowing green under black light, and stingrays gliding in to brush human hands. On clear nights enjoy brilliant stars against dark skies, and on stormy nights watch the clouds and lightning roll past... oh, and don't forget the great dining and ice cream that await you as well.

#### Summer Camps 2019 Museum Explorers Camps

On the grounds of the Desert
Museum from 5-10 pm
Fox Camp • Entering grades 1-2
Bobcat Camp • Entering grades 3-4
Sonoran Scientists • Entering grades 5-6

Session 1: June 3-7, 2019 Session 2: July 10-14, 2019

#### To the Desert and Beyond!

Our hands-on, minds-on camps will open your eyes to the wonders of desert plants, animals, geology and people. Campers will explore the Museum as they use science to make their own desert discoveries, observe live animals up close, interpret the desert through art, make tools from desert plants, hike in nature, and go behind the scenes with animal keepers. \$225 Non-members, \$200 Members



**Colors of Nature Camp** (offered in partnership with the National Optical Astronomy Observatory, NOAO)

#### Entering Grades 5-7 July 15-19, 2019

Explore the colors of nature through art and science! Learn about why flowers have the colors they do, how bees see, and make original art using chemistry and optics. This camp is a combination art studio and science lab, where microscopes and paintbrushes work side by side as we investigate and create a colorful world. \$250 Non-members, \$225 Members

#### Laurel Clark Earth Camp

#### Entering Grades 8-9 June 24-28, 2019

Not all science happens in a laboratory. This summer spend some time in the great outdoors exploring what it might be like to become a botanist, zoologist or geologist. This camp includes two overnight camp outs and time at the museum, in the desert, at a lake, on a mountain top and underwater (in a pool as we learn to scuba dive). Hands-on field research will allow students a real world experience in learning about the natural world and developing a passion to preserve and protect it. \$375 Non-members; \$345 Members Find out more here: www.desertmuseum.org/kids/camp\_page.php

ARIZONA-SONORA DESERT MUSEUM

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#### **QUARTERLY MEMBERSHIP** WINNER!

Congratulations new member Daniel Warren you are the Museum's Quarterly Guest Pass Winner!

By filling out the back of the membership guest pass and winning the quarterly drawing you have won a one-year complimentary Individual membership! A big thanks to all Museum members for sharing their Desert Museum experience by giving friends and family guest passes

ARIZONA-SONORA **DESERT MUSEUM** 

NON-PROFIT ORGANIZATION U.S. POSTAGE PAID ARIZONA-SONORA DESERT MUSEUM

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.



#### REGULAR HOURS

Open 365 days a year.

October – February 8:30 a.m. – 5:00 p.m. March - September 7:30 a.m. - 5:00 p.m. May 20-Sept.2 7:30 a.m. - 10:00 p.m. on Saturdays

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