ARIZONA-SONORA DESERT MUSEUM



By Craig Ivanyi, Executive Director

AN UNTOLD STORY

When residents and visitors visualize the Sonoran Desert it's unlikely that images of massive rivers with sixfoot long minnows, or oceans teeming with whales, stingrays, eels, and thousands of invertebrates come to mind. Yet, a full understanding of the Sonoran Desert Region isn't possible without recognizing the importance of the freshwater rivers that flow through it and a sea critical to its status as the lushest desert on earth. Without rivers such as the mighty Colorado, Sonoran Desert biodiversity would be but a fraction of what it is and we would be without water in our homes. Without the Sea of Cortez (a.k.a. Gulf of California) and the summer monsoon that brings moisture from it, the lush Sonoran Desert of today would be a very different—and inhospitable—place. The reality is that this incredible ocean represents a full half of the Sonoran Desert Region—literally 100,000 square miles of desert-ocean and an astounding 900+ islands!

The Museum has always longed to tell this story in grand fashion. Now, thanks primarily to the generosity of the Bert W. Martin Foundation and the Warden family, it has become a reality. In December 2012, the Arizona-Sonora Desert Museum will open the Warden Aquarium—Rivers to the Sea. This exciting new exhibit will explore rivers of the Southwest and take you on a journey down the Colorado River into the Sea of Cortez, terminating at

the rocky reef of Cabo Pulmo, which is just off the southeastern tip of Baja California Sur, Mexico. Visitors will meander along fourteen aquaria, some of which will house rare fishes of the Colorado and Yaqui Rivers, while others will be home to sea horses, angelfish, eels, and other sea creatures - all of which help tell the story of this unique and extremely diverse region.

of the sea. Along the way, you will learn that in its original state, it was forceful (carved the Grand Canyon), variable (with low, slow waters in summer, high floods in winter and spring), and murky (thus the name, Colorado which refers to the reddish color coming from red silt). You may encounter the largest minnow in North America (pikeminnow), bonytail chub, and other fishes

> with humps, lumps, and bumps, that are extremely well-adapted to these riverine conditions—highly specialized for an environment that is all but gone today.

Directly across from the Colorado River, visitors will experience other Sonoran Desert Rivers, including the Rio Yaqui and Rio Sonora, along with freshwater fish species that Museum staff are working to save in the wild, including Rio Sonoyta pupfish, beautiful shiner, and others. Visitors will discover that trout are, indeed, native, but now only occur in isolated, cold-water mountain streams.

SPECIES SPOTLIGHT:

FRESHWATER FISHES

OF THE COLORADO RIVER

COLORADO PIKEMINNOW

(Ptychocheilus lucius)

Proving that all minnows are not small, this one can grow to 6' (2m) and 100 pounds (40 kg). A top carnivore in the river, it can eat mammals and birds, but tends to prefer other fish. Its torpedo shape gives it speed for the chase. Once an important food (known as "white

AQUARIUM OVERVIEW

The journey begins with an overview of the watershed of the Colorado River, which traverses 1700 miles, drops 2 miles in elevation, and drains about 12% of the U.S. as it winds its way through nine states seven in the US & two in Mexico) and seeks the mouth

salmon") and so abundant it was used as fertilizer, it is now rarely seen. Note: Due to its extreme size, it may only periodically be in the aquarium (when it gets too large, you'll find it in the Museum's beaver pond).

RAZORBACK SUCKER

(Xyrauchen texanus)

At up to 3' (1m) in length and 10-14 pounds (4-6kg) in weight, this is one of the largest suckers in North America. Before the existence of dams, it made long spawning migrations in the spring when water temperatures were right. In addition to disruption of breeding, it is threatened by predatory non-natives and by hybridization.

FISHES OF OTHER SONORAN DESERT STREAMS

APACHE TROUT

(Oncorhynchus gilae apache)
The Apache trout is native to Arizona.
Five other trout species have been brought to Arizona since the early 1900s, and their introduction has been a disaster for the Apache trout. They took its food and space, ate its young, and hybridized with it. As a result, the Apache trout has disappeared from 95% of its range. Today it lives in the colder

and smallest streams high in the White Mountains. Efforts are underway to restore it in waters free of non-natives.

MOVING RIGHT ALONG...

As you transition to a marine environment, you get a glimpse of mangroves in brackish water, in which you'll watch barred flagtails and fantail pipefish maneuver among the long, exposed roots of these fabulous trees.

As you immerse yourself in the sea, you are presented with a group of fossorial garden eels that will fascinate you as they rise up from and disappear into a deep bed of sand while competing for meals with each other and other fish species, such as hawkfish and king angelfish. As you round the corner into the Sea Gallery, you'll be amazed to find a group of seahorses majestically grasping vegetation or hovering and gently propelling themselves from one spot to another. From here you discover a plethora of marine fishes, including frogfish, lionfish, and moray eels. A massive, life-size model of a manta ray hovers above you as you marvel at the diversity of fishes found in the rocky Cabo Pulmo coral reef. In this tank you will find almost a dozen species of fishes, including the stunning Cortez angelfish and the beautiful horned shark.

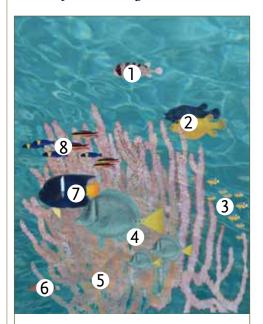


SPECIES SPOTLIGHT: SEA OF CORTEZ

PACIFIC SEAHORSE

(Hippocampus ingens)

The Pacific seahorse is the only type of seahorse found in the Gulf of California. It is one of the largest species, growing up to a foot in length. Dwelling among corals, sea fans, sea whips, and sea grasses, they can live up to 4 - 6 years. They don't swim very well and may die from exhaustion in high currents, which can result from severe weather. They swim upright, which is very different from other aquatic life. Even though it may look like they do, they lack scales. Seahorses have a small crown called a coral net, which varies from individual to individual. Seahorses have neither teeth nor stomach. Thus, they swallow food whole and have to eat constantly due to the fast process of digestion.



COVER ILLUSTRATION

- 1. Balloonfish (Diodon holocanthus)
- 2. Guineafowl Puffer (Arothron meleagris)
- 3. Beaubrummel (Stegastes flavilatus)
- 4. Yellowtail Surgeonfish (Prionurus punctatus)
- 5. Arbolito del Mar (Muricea californica)
- 6. Blue Spotted Jawfish (Opistognathus rosenblatti)
- 7. King Angelfish (Holacanthus passer)
- 8. Cortez Rainbow Wrasse (Thalassoma lucasanum)

HORN SHARK

(Heterodontus francisci)

Horn sharks are a species of bullhead shark endemic to the coastal waters off the western coast of North America, from California to the Gulf of California. They are a small, slowmoving, benthic species. Their common name refers to a sharp spine in front of both dorsal fins (which is great protection, like injuring the roof of your mouth when you bite down on the corner of a tortilla chip!) Typically they are nocturnal, when they forage for benthic invertebrates like hardshelled crustaceans, echinoderms, and crustaceans, which they crush between their powerful jaws and molar-like teeth. To crack shells, they generate the highest known bite force relative to its size of any shark. They have been known to "pounce" on anemones biting off tentacles before they are retracted. They capture prey by using forcible suction created by expanding the buccal cavity. They will also use a levering motion of the body with the pectoral fins for support.

California Sea Hare

(Aplysia californica)

Like our seahorses, these herbivorous marine mollusks are produced through aquaculture. In the wild they are part of the marine coastal community in the Pacific Ocean from northern California to Baja California. Individuals can often be found on their algal food, and aggregate in large numbers near food in the summer months (June – August) when they breed. The name "sea hare" comes from the sensory tentacles on the top of their head, called rhinophores, which are

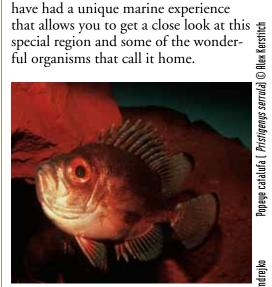


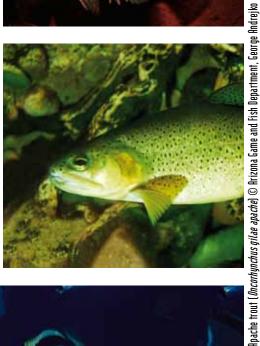
somewhat reminiscent of rabbit's ears. Unlike other gastropods, sea hares don't have a large external shell in which to retreat. Instead, they have a small, flat, vestigial shell, the consistency of cardboard, covering the viscera and nominally protecting the heart and other internal organs.

More than just an ocean oddity, sea hares have the potential of benefitting humankind. In 2000, Dr. Eric Kandel won the Nobel Prize in Physiology or Medicine for research into how neurons form and store memories. For this research, he used neurons from sea hares and mice. Other studies of sea hares have led to drugs now in clinical trials aimed at reversing memory loss in patients with degenerative mental diseases. In other words, drugs currently being tested to reverse Parkinson's disease and Alzheimer's have been developed thanks to the humble California sea hare!



Add to this the periodic availability of a "touch tank" with invertebrates, such as the sea hare described above and sea stars, along with nonliving and interpretive elements that explore biodiversity and shrimp fisheries. You will have had a unique marine experience







Sperm whale fluke, Sea of Cortez.© 2012 Linda Klipp,

THE SONORAN DESERT'S SPECTACULAR SEA

By Rick Brusca, Ph.D., ASDM Research Associate



The Sea of Cortez. The name alone evokes romance, murmurs like a siren, promises glimpses of Shangri La. It is a magical place, there's no doubting it. And it's a biological wonder as well; one that has held the fascination of naturalists and adventurers since the Spanish sea captain Hernando Alarcón first sailed to the head of the Gulf in 1540.

Also known as the Gulf of California (both names are equally valid, and both derived from Sixteenth Century Spanish maps), this great sea is over 700 miles long and spans 9 degrees of latitude, crossing the Tropic of Cancer near the city of La Paz. It was created 5.6 million years ago, when tectonic forces ripped the Baja California Peninsula away from mainland Mexico, allowing the waters of the tropical Pacific to rush into the newly formed basin. The great East Pacific Spreading Center runs right through the middle of the Sea of Cortez, and continues to push Baja (and much of California) away from the mainland at a rate of several inches per year. The sea divides the Sonoran Desert into two halves, on the mainland and on the Baja Peninsula, with southern Arizona being the capstone that connects the two parts of this desert.

Its warm subtropical waters, and abundant upwellings that bring deepsea nutrients and oxygen to the surface, have created one of the most productive and diverse seas on the planet. The Gulf's 6000 recorded animal species are estimated to represent only about 70 percent of the actual (total) fauna lurking in its rich waters. So productive is this sea that about half of Mexico's total fisheries production comes from the region. So rich in plankton is the Sea of Cortez, that populations of two (possibly three) species of migratory great whales have forsaken their ancestral migratory instinct and taken up permanent residence there (sperm whales and finback whales). And with nearly 1000 islands and islets, the Sea of Cortez is home to one of the world's largest island archipelagos.

The "long arm" of the Sea of Cortez even reaches Tucson, and much of the southwest, in the form of summer monsoons. Once thought to originate in the Gulf of Mexico, we now know



that almost all of our summer rain comes from the Gulf of California/ Tropical Eastern Pacific, often in masses of water-laden air called "Gulf Surges" that rush right up the middle of the Sea of Cortez to dump their harvested moisture in southeastern Arizona and adjacent areas. The oceanic waters of the Pacific also rush up the length of the Gulf, in twice-daily tidal surges, and as they funnel into the shallow, narrow uppermost Gulf, they create some of the world's largest tides—up to 24 vertical feet at Puerto Peñasco ("Rocky Point") and over 30 feet at the very head of the Gulf. On shallow tidal flats in the northern Gulf, a 20 – 30 ft vertical fall can expose several miles of once-submerged seabed, with the sea rushing back in just a few hours later. Many a naive tourist has watched the sea swallow their off-road vehicle with these rapidly returning tidal waters.

The Desert Museum has been involved in the Sea of Cortez since its earliest days. In fact, the Museum was responsible for the very first protected natural area in Mexico, Isla Rasa, a one-square kilometer island in the Gulf that is home to 95 percent of the breeding population of elegant terns and Heerman's gulls. A "Gulf Hall" exhibit has been on the planning boards since the 1960s. Thanks to a generous gift from the Bert W. Martin Foundation, this exhibit, The Warden Aquarium—Rivers to the Sea, has finally become a reality!





PLEASE NOTE

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

EXHIBIT FIESTA SONORA: SOUTHERN ARIZONA WATERCOLOR GUILD through October 28 Monday – Friday 9 a.m. – 4 p.m. Ironwood Gallery

The Southern Arizona Watercolor Guild is back for another exciting and popular show. This group always puts the emphasis on skill and creativity while showing you their latest and greatest works, all painted in a variety of water media.

MEMBERS' PREVIEW RAPTOR FREE FLIGHT Friday, October 19, 10 a.m. Arizona Uplands

Come meet the birds of the RFF and enjoy an insider's look at new birds and new behaviors for the 2012 – 2013 season.

RAPTOR FREE FLIGHT DEMONSTRATIONS— THE SEASON BEGINS Saturday, October 20 10 a.m. and 2 p.m. daily Desert Loop Trail

Morning demonstrations will highlight multiple species of hawks, ravens, owls, and roadrunners. Afternoon demonstrations will be devoted to the spectacular behaviors of a family group of Harris's hawks.

EXHIBIT

AMERICAN WOMEN ARTISTS: VISIONS OF THE SOUTHWEST November 3– January 6, 2013 Monday – Friday 9 a.m. – 4 p.m. Opening Reception, November 3, 2 – 4 p.m.

Ironwood Gallery

American Women Artists is dedicated to the inspiration, celebration, and encouragement of Women in the Arts. This group has created a dazzling array of imagery that is sure to ignite inspiration in their Visions of the Southwest.

AMERICAN WOMEN ARTISTS PLEIN AIR PAINT-OUT & SALE November 3

Paint-out, 9 - 11 a.m. Wet Paint Sale, 1 - 4 p.m.

Baldwin Education Building Lobby Watch the artists work, then stick around to buy your favorite paintings.

DIRECTORS' BREAKFAST Saturday, November 10, 9:30 a.m. Baldwin Education Building

Meet the Desert Museum's Executive Directors, visit with the Board of Trustees and senior staff at this annual breakfast for Silver, Gold, and Life members. By invitation.



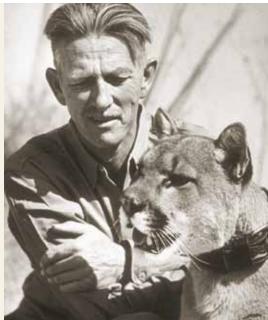
ANNUAL MEMBERS' MEETING Saturday, November 10, 10:30 a.m. Warden Oasis Theater

This annual meeting is the Desert Museum's "State of the Union" address and features the presentation of the Luminaria Award. Open to all members.

SONORAN DESERT CONSERVATION AWARDS DINNER

Sunday, November 11, 5 p.m. Warden Oasis Theater & Baldwin Education Building

This special evening will celebrate the Museum's Sonoran Desert conservation efforts, and will benefit the Museum's research and conservation programs. \$____ per person. For reservations call 520/883-3022.







My Museum Memories-1953

By Peggy Pickering Larson, ASDM Archivist

Sixty years ago my husband and I lived at the Arizona-Sonora Desert Museum.

Well, truthfully, it was more like 59½ years ago when Merv was hired there. In January 1953 we moved into the small house up by the stables. Merv's Museum tasks included feeding the animals, cleaning the cages, fixing whatever needed to be fixed, designing and constructing exhibits, or driving to Tucson over the dirt and wash-board road on Gates Pass to pick up needed items. I recall one item he picked up was a mountain lion.

The understanding was that part of his job included me cooking dinner each evening for Bill Carr, Founder and Director of the Museum, who was living in the Old Mountain House. Additionally, Bill made it clear that daily I was expected to visit the exhibits, admire the work being done there, which was easy, and sometimes to write a weekly column for the Arizona Daily Star, the byline of which soon reverted to George L. Mountainlion, the Museum's literate lion. By default I was the resident animal rehabber, privileged to raise two bobcats and other needy animals.

We had been living near San Francisco; the desert around the Museum was beautiful but in sharp contrast. This necessitated some personal adjustment. The Museum was isolated. Neither Gates Pass nor Kinney Road was paved. The only telephone service consisted of an ineffective mobile radiophone. Merv had only one day a week off and that was usually devoted to a trip to a grocery store in town and related errands.

And then there was the matter of my cooking. Bill Carr hadn't inquired about my cooking capability when he hired Merv, and despite my mother's best efforts, my skill had mostly developed around Kraft Macaroni and Cheese and frozen pot pies. But Bill had no choice. There was no food concession at the Museum, and he was not inclined to cook. So each night we shared our food (such as it was) and kitchen table with Merv's boss.

Occasionally there were also out of town late afternoon guests at the Museum, whom Bill would daringly invite to partake of my cooking. The most memorable of these was Lew Walker, an old friend of Bill's, who appeared one afternoon, and would later have a long career at the Museum. "You need to invite him to dinner," Bill told me, then added, "but he only eats steak!" My refrigerator predated Coronado, was about the size of a shoe-

box, and certainly contained no steak. There was a fast trip to town.

When the guests arrived, Lew, the ultimate outdoorsman, announced he would cook the steaks, and added, "The best fuel for cooking steaks is javelina dung!" There was plenty of that at the Museum. Dinner was dungsmoked steak and whatever pathetic accompaniments I could concoct. As I recall, at least the steak was delicious.

There are so many good memories from that 1953 interlude. After dinner Bill Carr often lingered and talked to us about Museum visions and books. Some evenings Merv and I watched colorful sunsets, then walked down to the old large animal line. Alone with just the animals we talked to George lion. He replied with excited purrs and yaps. Inside the bobcat enclosure we'd pet Tommy, the aloof patriarch. Returning up the incline to home the night silence was profound and the darkness complete. No lights showed in the broad sweep of Avra Valley below the Museum veranda.

This year as the Museum celebrates its 60th Anniversary, I am reminded how very privileged Merv and I were to be a part of the Museum's first year in the spring of 1953.





Major Gifts, Grants, Bequests, & Donor Recognition

We thank the following donors for their generous support of our stewardship, interpretive, and conservation efforts.

MAJOR GIFTS

Priscilla and Michael Baldwin Foundation, Inc. Mr. and Mrs. Mickey Feeney Estate of Elizabeth Mayer National Aeronautics and Space Administration

GRANTS

Arizona Ecological Services National Aeronautics and Space Administration

MEMORIAL TREES **PROJECT**

Ironwood Tree in honor of The Tuesday Docents

MEMORIAL GIFTS

In memory of Mr. David S. DeYoung Dr. Lynn Helseth & Mr. Greg Helseth

In memory of Mademoiselle Dhu Mr. and Mrs. John R. Smith

In memory of Mr. Gary W. Hillman Mr. and Mrs. John N. Hillman

In memory of Mr. Arnold Hollander Mr. and Mrs. Charles J. Erickson

In memory of Dr. Philip Knorr Ms. Doris E. Manning

In memory of Kerry Lutz Mr .and Mrs. Marlyn Lutz In memory of Mrs. Susan Martin Bob and Carol Mead

In memory of Ms. Kay McConnell Mr. and Mrs. John N. Hillman

In memory of Mr. Casey McNerney Dr. Abraham Blattstein & Dr. Deborah Blattstein

In memory of Mr. Lewis C. Miller Ms. Anna Domitrovic

In memory of Mr. Roy Lee Roberts Mr. Greg L. Roberts & Mrs. Dolores A. Roberts

In memory of Mr. Joseph F. Stadelman Mr. and Mrs. Keith Graham

In memory of Mr. Donald M. Walters Miss Cuava Atwood & Mrs. Alma A. Owen Mr. and Mrs. Jay Barkey Ms. Mary Boulton

Ms. Patricia R. Brown Mr. Theo Houghton Mr. and Mrs. Ken Seidel

In memory of Ms. Lauray Yule Ms. Anna Domitrovic

HONORARIUMS

In honor of Mr. and Mrs. Richard B. Baer Ms. Jo Baer

In honor of Mrs. Leslie Barrett Madrid Ms. Sheila Reeves

In honor of Ms. Sharon Foltz Ms. Jennifer Lohse

In honor of Caelan Koch Ms. Eliza Holland

In honor of Kennedy Koch Ms. Eliza Holland

In honor of the 90th birthday of Mrs. Marcille Lynn Ms. Doris E. Manning

In honor of the graduations of Catherine and Daniel Morton Mr. and Mrs. Harold Blatter

In honor of Ms. Sue Scheff Dr. and Mrs. Nathanial Bloomfield

For information about supporting the Museum with your gift or bequest in honor of a loved one, please contact Brian Bateman, Executive Philanthropy Director, at 520/883-3039.



Your gifts allow the Arizona-Sonora Desert Museum to thrive. You ensure that this regional treasure has global impact by inspiring people to live in harmony with the natural world.

Generous charitable support fuels the people, programs, and projects that foster love, appreciation, and understanding of the Sonoran Desert. Since 1952 the Desert Museum has grown dynamically as a zoo, aviary, natural history museum, botanical garden, and now—thanks to you—an aquarium!

For donor information, call the Development Office 520/883-3039, and to volunteer, call 520/883-3071.

A Family Tradition Continues

By Brian Bateman, Executive Philanthropy Director

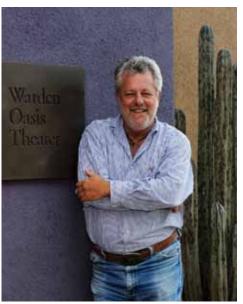
Chandler Warden has fond and vivid memories of visiting the Desert Museum

when he was eight years old. That was about the same time he often puzzled his family at the dinner table by expressing his strong convictions about conservation and the environment.

"Maybe those early beliefs stem from my grandfather who was one of the first environmentalists in the country," says Chandler. "He invented Diamond Strike Anywhere matches and when he harvested timber to make the matches, he replanted those forests. Other timber companies could not figure out why he would do that when there were millions of acres of trees. Those stands are now 80 years old and he would be extremely proud," says Chandler.

That sense of family pride will likely surface again this winter as the Warden Aquarium—Rivers to the Sea opens at the Desert Museum. Through his grandfather's Bert W. Martin Foundation, Chandler and his mother Wynee provided the major gift to fund the new aquarium.

This latest gift is one in a series from the family foundation motivated



by their passion for the mission of the Museum. The Warden Oasis Theatre was created through the vision of Wynee Warden who wanted a cool gathering place, an oasis in the desert on the Museum grounds for education and entertainment. Ten years ago the family also made the initial gift to resurrect the Desert Ark educational program. This allowed educators to travel to classrooms and community groups for animal demonstrations and natural

history lessons. Since that time they have made annual gifts to sustain this historic Desert Museum program. They also contributed to the restoration of the popular black bear habitat.

"Wynee and Chandler, have helped transform this place through the Martin Foundation," according to Bob Edison, Executive Director Emeritus and Campaign Director for the Museum. "They have both been willing to participate actively in the next step and support the growth of the Museum. As friends, supporters and volunteers, they are first and foremost interested in the institutional needs of the Desert Museum."

"This aquarium brings the whole story together by interpreting the rest of the Sonoran Desert region. Our family is thrilled that after 60 years this exciting exhibit will offer the other half of the story," says Chandler. Those in the Desert Museum family who know the Warden family also understand that this is a fine tribute to grandfather, Bert W. Martin. The millions of miles of ocean are just as precious and at environmental risk as those forests he replanted decades ago.

How You Can Help

- Be a Member. Make an annual gift to keep apprised of the latest events, exhibits and programs at your internationally renowned Desert Museum!
- Be a Volunteer. Join a dedicated core of 500 docents and volunteers who contribute their skill and time.
- Be an Advocate. Tourists and Arizonans both love the Museum. Encourage visitors, fellow members, and supporters to sustain this precious resource.
- Be a Donor. Help meet the vital needs of this non-profit natural preserve. Your tax-deductible gifts care for the flora and fauna of the splendid Sonoran Desert.
- Many members also make a provision for future support of the mission. The bequest language that follows allows your estate planning professional to designate your gift. "I give and devise the sum of _____ dollars (rest and residue, or percentage) to the Arizona-Sonora Desert Museum, Inc., a non-profit Arizona corporation located at 2021 N. Kinney Road, Tucson, Arizona 85743, tax identification number 86-0111675, to be used for the vital needs of the Museum."

Charitable support for the Desert Museum has grown significantly over the past 10 years, and the Board of

Trustees is committed to maintain that trajectory in philanthropy. For that reason, we began a transition on June 1 that ensures coverage, continuity, and most importantly continued success! Executive Director Emeritus, Bob Edison served with distinction as Executive Philanthropy Director achieving unparalleled success in major and planned giving to the Museum since 1999. Bob has been named Campaign Director for the soon-to-be launched \$18 million Treasure the Desert Museum initiative. Veteran Tucson fundraiser Brian Bateman is working in tandem with Bob and Executive Director Craig Ivanyi to maintain a solid base of support for the mission of the Museum. Brian is a longtime member of the Desert Museum and an accomplished major gift professional who served donors to the University of Arizona for more than two decades. His creative donor-centered approach to giving has not only brought significant return, but has become popular in training sessions with colleagues and volunteers across the country. We are excited that Brian has joined the leadership team as the Executive Director of Philanthropy at a time when charitable giving holds greater importance than ever for the Museum.



Jaption. © 2012 Phonda Spence

NEW RELEASES FROM ASDM PRESS!!

Love the Gulf of California, aka Sea of Cortez? Get behind the scenes and into the science with new releases in ASDM's Studies in Natural History Series co-published with the University of Arizona Press.

> Sea Turtles of the Eastern Pacific: Advances in Research and Conservation, edited by Jeffrey A. Seminoff and Bryan P. Wallace. Hardcover, \$75

Discover the story of these venerable and vulnerable creatures—green turtles, leatherbacks, olive ridleys, hawksbills, and loggerheads—their biology, critical role in marine ecosystems, human interactions, research, and conservation, as well as the people who champion their survival.

NEW in paperback!!

The Gulf of California: Biodiversity and Conservation edited by Richard C. Brusca. Cloth \$75/paperback \$40

This popular publication is now available in an affordable paperback edition. Contains fascinating research and savvy commentary by 24 experts from the U.S. and Mexico on the Gulf's awesome inhabitants and dynamic ecosystems.

COMING IN NOVEMBER, just in time for the HOLIDAYS!

Victor, the Reluctant Vulture by Jonathan Hanson, illustrations by Kim Kanoa Duffek, English or Spanish edition,

hardcover, \$16.95

SEA TURTLES OF THE EASTERN PACIFIC

Classic literature, delightfully illustrated, for ages 8 - 11. This story will make you laugh and cry, and it will touch the minds and hearts of growing boys and girls. With natural history to boot!

Mountain Trees of Southern Arizona: A Field Guide by Frank S. Rose, \$19.95 Baffled by trees? Next time you hike, take this easy to use, richly illustrated field guide to common and notable trees of the Sky Islands of Arizona.

ORDER ONLINE AT ASDM PRESS DESERTMUSEUM.ORG/BOOKS/ Free shipping for orders of \$25 or more!



For more information go to desertmuseum.org/adultclasses or call 520/883-3086. Prices are for ASDM members. Add 10% for non-members.

PERFECT PRUNING October 6

Learn the basics of pruning including how trees grow, how they heal, and tree anatomy. \$36

DESERT GRASSES October 13

John Wiens and George Montgomery will lead you through the natural history of grasses discussing their origins, ranges, and structure. You will walk the Desert Grassland exhibit as well as nearby King Canyon for real world practice at field identification. \$36

CHACO CANYON* October 18 – 22

Visit the area that was the center of Anasazi culture 1000 years ago. Only a few spaces left. \$1795

NATURAL HISTORY OF THE **SONORAN DESERT**

October 20 and 21

Would you like to be more knowledgeable about the animals, plants, and landscape of our desert? This two-day course covers desert ecology, climate, mammals, birds, reptiles, venomous animals, botany, geology, and ethnobotany. We also touch on current threats to our desert such as invasive species, water and climate change issues, endangered species, and recovery programs. \$120

Give a Holiday Gift Certificate for one of our educational programs.

For information call 520/883-3086.

RAINWATER HARVESTING AND SOLAR DESIGN November 3

See how homeowners like you have reduced utility bills and now live a little lighter on the planet. Learn about harvesting and storing rain and greywater, related ordinances and incentives, shading, windows, and plantings. We'll also visit the Solar Store. \$46



HOLIDAY COOKING WITH **MESQUITE AND TEPARY BEANS** December 1

Learn how to craft recipes using mesquite flour and tepary beans, staples of early desert inhabitants. This class will cover nutritional value of these foods, where to collect/acquire them, and how to prepare them. Concludes with a meal, the fruits of our collective labor. \$60

CHRISTMAS IN THE BARRIO* December 4

Visit barrios, markets, and historic sites for a glimpse of Tucson's rich Mexican history and holiday traditions with noted author/oral historian Patricia Preciado Martin. This uniquely memorable day includes transportation, lunch, and moderate walking. \$99

ZOOKEEPING 101

January 3, 2013

A great gift idea! Go behind the scenes in the ASDM animal departments, talk to a veterinarian, learn about how to train and handle animals. Hang with real zookeepers. \$54 members

THE BEST OF BAJA—WHALE **WATCHING & NATURAL HISTORY***

February 28 – March 8, 2013

Join Baja's Frontier Tours on a comfortably paced, scenic road trip featuring breathtaking forests of Boojum and immense cardon cacti, and, hopefully, brilliant spring flowers. Then, experience the friendly gray whales of Scammon's Lagoon. Boating, birding, and botany. Fabulous fresh seafood! \$2,795

LAND OF THE HOPI AND NAVAJO April 20 – 26, 2013

Explore the stark sandstone geology and the ancient cultures of Arizona's Colorado Plateau. Visit the Hopi Mesas and the homes of Kachina artisans. Picnic under 200-foot high petroglyph panels, step into Jurassic dinosaur tracks, find fossil oysters and learn about the seas and sand dunes that covered this area millions of years ago. \$1690



*For these trips, please contact Mary & Piet Van de Mark at Baja's Frontier Tours, 520/887-2340 or bajasfrontiertours.com for details and registration;

Nembers Notes

Give the Gift of Year-long Fun.

A gift membership provides 365 days of free access to the Museum's animals and gardens, loads of activities, and members-only adventures. Call the Membership office at 520/883-3054 or log on to desertmuseum.org to sign up family, friends, clients, and neighbors. They will be thanking you all year long!

The 2012 Desert Museum Holiday Wish List!

The Desert Museum's Wish List features an amazing array of fantastic gifts that will amaze you and wow everyone on your gift list. October – January, 2013 will feature our special holiday wish list. Notification of your generous gift will arrive just in time for the holidays! See desertmuseum.org for a complete listing of this season's Wish List offerings and the holiday gift delivery schedule.

Opt-In to ASDM digital news and information

Have an email account? Opt-in today at desertmuseum.org to receive Museum news and announcements of special events. It's the easiest way to get news about all the happenings at the Museum on your computer, tablet, or smart phone. And you can also renew your membership online.



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Art Institute UPDATE!— Conservation through Art Education Fall 2012/Spring 2012 Catalog

Check out the Art Institute's updated listing of classes and workshops featuring classes for artists of all skill levels at desertmuseum.org/arts/classes



REGULAR HOURS

We are open every day of the year. October – February 8:30 a.m. – 5:00 p.m. March – September 7:30 a.m. – 5:00 p.m. June – August 7:30 a.m. – 10:00 p.m. on Saturdays

Admission

Museum members free
Adults (13 and older) \$12 June - August
\$14.50 September - May
Children (6 - 12) \$3 June - August
\$4.50 September - May
Children 5 years and younger are free
Ask about special group rates

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