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Desert Museum

# Discovery

Summer 2023

## The Life, Death, and Rebirth of the Santa Cruz River

By Michael Bogan, Associate Professor, University of Arizona

Generations of Tucsonans have grown up thinking the Santa Cruz River is a dry wash. But prior to the early 1900's, several parts of the river flowed year-round, and that water was used sustainably for agriculture by the O'odham and their ancestors for thousands of years.

In the river and adjacent irrigation canals, you would have found 6 native fish species, including the endemic, silvery blue Santa Cruz pupfish. Each spring and summer, choruses of leopard frogs and several species of toads called from the banks of the river. You even could have dug in the riverbed and found large freshwater mussels similar to ones you might see in the ocean!

However, the growing population of Tucson used up all the river's water in 1913. This overuse of water destroyed the river's ecosystem and caused all aquatic species to go locally extinct. And then, for most of the 20th Century, the dry bed of the Santa Cruz was mined for sand and gravel, filled with trash, channelized, and ignored. Thankfully, the Santa Cruz

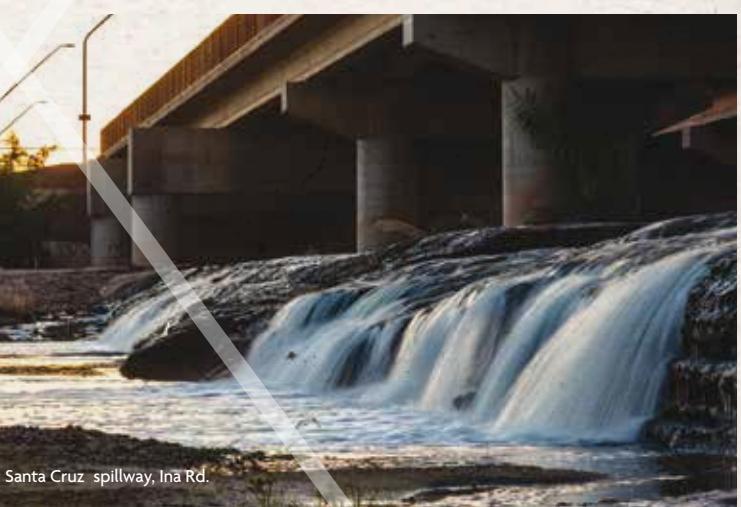
has been reborn in recent years, and several parts of the river once again thrive with swimming fish, hopping toads, and dazzling dragonflies.

Ironically, the rebirth of the river is due to the same issue that caused the river to dry up: human water use. Flow in the reborn Santa Cruz comes from Pima County's Water Reclamation Facilities, which treat Tucson's municipal wastewater. When water goes down the drain at your house, it flows to these facilities and is treated to a very high quality before being released into the dry riverbed, creating green oases in our desert city. Releases from Pima County support two long-flowing sections of the river in north Tucson and Marana, and Tucson Water's Santa Cruz River Heritage Project has created a new ribbon of green in downtown

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A wrecked bridge along the Santa Cruz during the flood of 1915.  
"A" Mountain is in the background.



Santa Cruz spillway, Ina Rd.



Santa Cruz in the morning light.



Santa Cruz during a flood, c.1903.

Tucson. And thankfully, both the county and the city have promised to keep water in the river long into the future as part of the Conservation Effluent Pool program.

Researchers from the University of Arizona, the Sonoran Institute, and other organizations have been monitoring the return of fish and wildlife in recent years, and the news is good! Numerous fish,

toad, and turtle species, and nearly 200 species of aquatic invertebrates, have returned to the river. By visiting the Santa Cruz and using community science apps, such as iNaturalist, you can contribute to our growing knowledge of the river's biodiversity. So, if you haven't gotten to know the reborn Santa Cruz yet, please visit soon and help reconnect our community to the river! 



#### How to enjoy the Santa Cruz River:

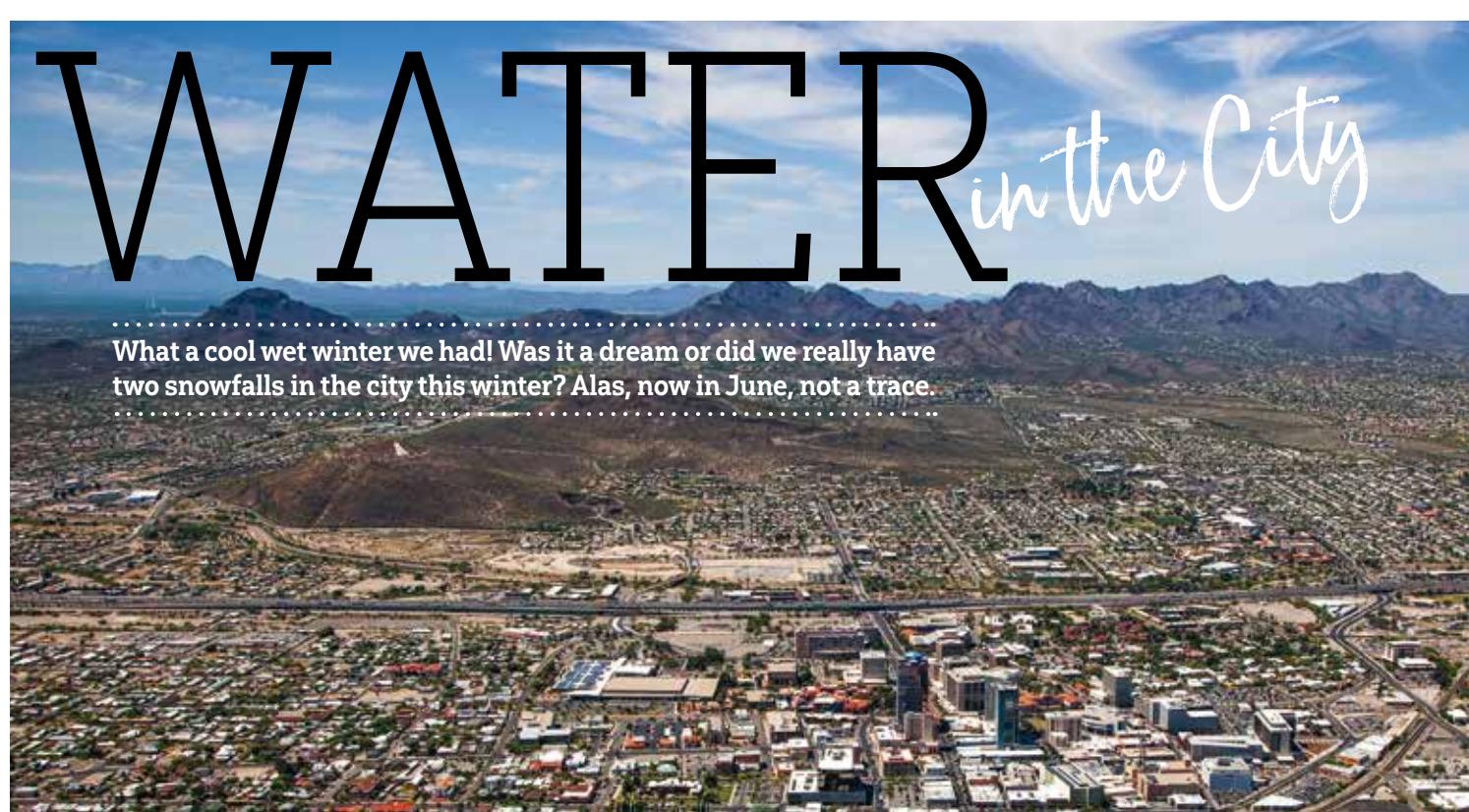
Gather your friends or family, wear closed-toed shoes and a sun shirt, and head to Starr Pass Road where it crosses the Santa Cruz River. Park at Pima County's Santa Cruz River Park and walk south along the Pima County's Loop trail toward 25th Street. Along your walk you might see coyotes, bobcats, or javelina walking through the river! And don't forget your binoculars to catch views of killdeer, red-tailed hawks, and roadrunners. In the river channel, look for colorful dragonflies, hopping toads, and swimming Gila topminnow. Finally, stop by any of the numerous local restaurants and shops downtown to enjoy a bite or beverage while looking through your photos!



The Santa Cruz River is about 184 miles long. It begins in the high grasslands of the San Rafael Valley east of Patagonia, AZ. It runs south into Sonora Mexico for several miles before it changes its mind and heads north back into Arizona where it passes the early Spanish missions of Tumacácori and San Xavier del Bac ending up eventually into the Gila River.

# WATER in the City

What a cool wet winter we had! Was it a dream or did we really have two snowfalls in the city this winter? Alas, now in June, not a trace.



By Sonya Norman, Public Programs Coordinator



## What happened to all the rain and snow months after it landed in Tucson?

If you take a hike in the Catalina or Rincon Mountains, you will see that all the places marked as a "spring" on the map are indeed issuing clear water. You can likely drink this water if you capture it right as it is pouring out of the ground. It is the melted snow or cold rain that has spent the last months slowly seeping downhill through soil that filters it. Springs are fickle. They only flow when the ground is saturated.

mean that air conditioners run longer, consuming more water at the power plant; hotter temperatures stress vegetation, requiring that it be watered more often; and hotter temperatures evaporate more water from pools, requiring more frequent refilling. The most effective ways to cool the city are through increasing plant cover, especially trees, and decreasing hardscapes, such as rock yards, pavements, and masonry patio walls.

Yes, plants drink water. But the payback is three-fold. A plant shades the ground (cooling it), it transpires (cooling the air), and it consumes the sun's radiant energy in the process of photosynthesis. Plants eat the heat. That is why it is always cooler next to vegetation. So, where shall we look for water to make our city greener, which thereby can lessen our use of pumped water? The answer is the sky. More water falls on the city of Tucson than is used by Tucson Water customers in one year. Some of it recharges, but most of it evaporates. It goes right back to the atmosphere because we have created a hot city.

#### Not even a tank is required!

However, it does require observing where water is being shed from (driveways, rooftops, roads), considering where it would be most useful (for growing shade on the west, northwest or northeast sides of a building), and altering the topography to direct it into useful places and away from walkways and foundations. A local example of greenery that can be coaxed from a former dirt lot can be seen at 2525 N. Treat Ave. This wee park, after getting a little help with the neighbor's hose the first 2 years, is now supported solely by rain. Watch where your rain falls this monsoon season and plan to channel, divert, or harvest it!

For 100 years we had been pumping this water back out of the ground for our sundry uses. We then realized that we were removing far more water than was naturally being replenished, so 30 years ago we shifted to importing Colorado River water. Now that is becoming scarce. How should we as individuals and as a community address this shortage?

What we should do is obvious: use less water. But just as importantly, but not so obviously, we need to cool our city. Hotter temperatures

 JOIN US for a rainwater harvesting class this November. For further details visit: [desertmuseum.org/adultclasses](http://desertmuseum.org/adultclasses).

# Take a class! Take a trip!

For more details and to register for classes and trips: 520-883-3025 or [desertmuseum.org/adultclasses](http://desertmuseum.org/adultclasses).

## • PRICKLY PEAR HARVEST AUGUST 13 OR 19

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 pads for "nopalitos". **\$60**



## MESA VERDE, DURANGO, HISTORIC SILVERTON TRAIN AUGUST 21 - 26

Our expedition through southwest Colorado features some of the most significant archeological geography in the U.S. We spend a full day exploring Mesa Verde - the largest archaeological preserve in the U.S. and spend time at the seldom visited sites of Hovenweep and Lowry house ruins along with Canyons of the Ancients and Aztec Ruins National Monument. Our tour culminates with two nights in Durango, featuring a day-long first-class steam train excursion on the Silverton Narrow Gauge Railroad! **\$2975**



## NATURAL HISTORY OF THE SONORAN DESERT OCTOBER 28 & 29

Dive into the desert and become an expert on the plants, animals, and landscapes of this unique region! This two-day educational experience covers desert ecology, climate, mammals, birds, reptiles, botany, and geology. We will take a plant hike, go behind-the-scenes at the Museum, and have the opportunity to meet live animals! **\$150**



## BLACK LAVA / WHITE SAND NOVEMBER 14 - 17

Come explore the interior landscape of coastal Sonora! We'll spend a full day in the Pinacates for an up-close view of volcanic peaks, cinder cones including huge maar craters, varieties of lava flows, and majestic shifting dunes. Visits include the salt fields in Golfo de Santa Clara, the Center for the Study of Deserts & Oceans (CEDO), and a cultural outing to the sacred lands of the Tohono O'odham community of Quitovac. **\$1250**



## COOL SUMMER NIGHTS HAVE RETURNED!

Experience the desert at night with themed evening events every Saturday from June 10th through August 26th.

OPEN UNTIL 9:00 P.M.

The Desert Museum is lovely during the day, but it's even cooler after dark. This is the perfect way to beat the Tucson heat and still enjoy the outdoors this summer. Join us in the Sonoran Desert for fun activities and the opportunity to learn something new!

Upcoming themes include The Magic of Monsoons (6/24), Insectopia (7/8), and Bat Night (8/19).

Check out the full schedule at [www.desertmuseum.org/csn](http://www.desertmuseum.org/csn)

We love seeing the Museum through your eyes! Tag [desertmuseum](#) and use [#desertmuseum](#) for a chance to be featured!



DESERT MUSEUM

# SOCIAL MEDIA SPOTLIGHT





# DONOR RECOGNITION

December 6, 2022 - April 5, 2023

## MAJOR DONORS +\$10,000

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## IN HONOR OF

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In honor of Tony "Grumpy" Arnaud  
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In honor of Maria Bicknell  
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Dr. John Stuhlmuller

In honor of Annabelle Camp  
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In honor of Kary Cioli  
Dawn Stewart

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Maria Dixon

In honor of Malcom and Frances Duffek  
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In honor of Dottie and Willis Fagg  
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Steven Kover

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Rebecca and Henry LaVoo

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In honor of Kris Underwood  
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In honor of Lane Watson  
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**IN MEMORY OF**  
In memory of Lois Baker  
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In memory of William Bickel  
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In memory of Karen Bright  
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2022-23 Wheelock Kuehl Kids  
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In memory of Dave Nott  
Sharon and George Hawthorne  
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In memory of Clarissa and Luke Smith  
Nancy and Ben Smith

In memory of Lillian Owens  
Edward Jones

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In memory of Kenneth Poppino  
Billy Gordon

In memory of Janet Ruee  
Anna Domitrovic

In memory of Ruth Ronstadt  
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In memory of Bernard Seraphin  
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In memory of Jennifer Solter  
Frank Solter

In memory of Frederick Struble  
Margaret Barnhill

In memory of Richard Thompson  
Jeannette Jackson-Thompson

In memory of James Todd  
Julie Cundiff

In memory of Paul Turner  
Carolyn Carson

In memory of Richard Weissenberger  
Patricia Scully

In memory of Susan Whitney  
Heidi Lytle



## Legacy Giving

Support what's important to you long into the future with a planned charitable gift.

As you are considering your future, you may be looking for a way to make a significant impact on an organization that you love, like the Arizona-Sonora Desert Museum! The long-term support that we receive from generous legacy gifts continues to make it possible for the Desert Museum to fulfill its mission each and every year. There are many benefits from a legacy bequest, like potential estate tax savings, lessening the burden of taxes on family, and leaving a legacy to be remembered.

A bequest is a gift made through your will or trust, with the help of an advisor. It is one of the most popular and flexible planned gifts that you can create and makes a lasting impact for a 501(c)(3) nonprofit organization. Visit with your financial advisor to learn how to take advantage of the many tax benefits you can receive by making a planned gift! If you have chosen to include the Desert Museum in your planned giving – Thank You! Please let us know, so that we can invite you to join the William H. Carr Circle, a legacy society honoring those whose estate plans include the Desert Museum. **Thank you for being a Desert Hero!** Contact [philanthropy@desertmuseum.org](mailto:philanthropy@desertmuseum.org)

## SUMMER HOURS!



June thru September:  
7:30 a.m. - 2:00 p.m.

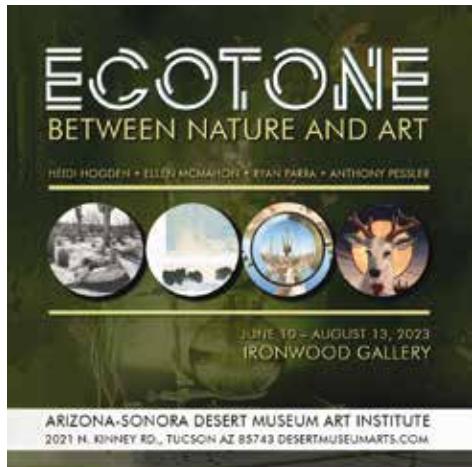
# DESERT MUSEUM ARTS UPDATE

[www.desertmuseumarts.com](http://www.desertmuseumarts.com)

ARIZONA-SONORA  
DESERT MUSEUM



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## ECOTONE: BETWEEN NATURE AND ART

Ironwood Gallery,  
June 10 – August 13, 2023

Just as an ecotone is a space where diverse species interact and compete, an artist's work may be a place where different cultural, historical, or personal influences come together, interact, and combine to create something new and unique. This can result in a work of art that defies easy categorization or classification and can challenge viewers to think in new ways.

This exhibition reflects on the concept of ecotone as a method of examining the intersection of art and ecology. Each piece presented by artists Anthony Pessler, Ryan Parra, Heidi Hogden and Ellen McMahon is a site of transformation.

## SUMMER CLASSES JUNE - AUGUST 2023

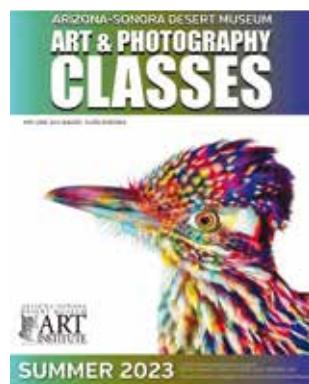
Enjoy the surroundings at the Arizona-Sonora Desert Museum while working on an art project

indoors. We offer individual classes as well as a certificate of completion program in nature art.

The unique backdrop of the Museum becomes your classroom,

while you have the option of drawing birds, mammals, insects, and desert botanicals. You can participate in a wide variety of classes and workshops including oil painting, nature journaling, mixed media, and photography.

Join us!



## GLASS IN FLIGHT

*Congratulations to Hailey Rose Urrea!*

Hailey won the "Glass in Flight" creative contest with her sculpture titled "ButterFLIGHT in Suspension".

Hailey truly took Alex Heueri's giant steel and stained-glass sculptures of winged insects as inspiration - and flew! Thank you to EVERYONE who participated in this contest. There were so many wonderful entries! Search the hashtag #GlassInFlight to see some of them as well as Heueri's originals.



## MORE BEES PLEASE

We are so excited about the opportunity to permanently acquire the large metal and glass honeycomb sculpture from artist Alex Heueri.

*We hope you can rise to the challenge and donate today! Simply make a note with your gift that states "For honeycomb art" to help make this happen.* You can mail in your gift c/o Philanthropy or give online at: [desertmuseum.org/donate](http://desertmuseum.org/donate) with a comment "for honeycomb art".



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Phone (520) 883-2702 · Fax (520) 883-2500  
[www.desertmuseum.org](http://www.desertmuseum.org)

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**Design & Layout:** Nancy Serensky  
**Photo Credits:** Rudy Flores,  
Rhonda Spencer, staff photos

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