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# CONSERVANCY CONNECTION

Bigelow's Monkey Flower

SPRING 2023





### OUR MISSION

**Working toward a sustainable future for the Amargosa River and Basin through science, stewardship and advocacy.**

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**Taylor Patterson • Tribal Affairs Consultant**

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### SINCERE THANKS

**Welcome to our new supporters and long time friends.** We greet and invite you to explore these pages of our bi-annual printed Newsletter. We could not do this work without your support. Please continue to follow us on Facebook, Instagram, Twitter; or subscribe to our monthly e-news blast and stay up to date on all of the events and project we are working on. Feel inspired to help and be apart of our work or making a bigger impact? We now have an Legacy Gift Program for our planned gift Champions. Please contact us at [info@amargosaconservancy.org](mailto:info@amargosaconservancy.org)

*Ashley Lee*

## With a little help from our friends

**The story of conservation in the Amargosa Basin has been largely written with the ink of collaboration.**

Looking back over the 19 year history of our organization, virtually every success we can claim has come from investments in partnerships. When the Amargosa vole faced long and dire odds of avoiding extinction, it took partnerships with researchers, land management agencies, nonprofits, volunteers, and especially private landowners to claw the vole back from the brink. When Susan Sorrells identified a last bastion of living Shoshone pupfish once believed to be extinct, it took a literal village in Shoshone to create suitable habitat for multiple endangered species to resurrect them. Trail building, land designation changes, furthering our understanding of this immensely complex groundwater flow system: all of these lofty goals and projects were only made possible by a collaborative effort organized around shared vision and values.

On March 7th, our organization took the first small step towards renewing a commitment to collaborative conservation in the Amargosa Basin. We convened representatives from regional tribal nations, state and federal agencies, nonprofit organizations, researchers and private landowners at Ash Meadows National Wildlife Refuge for a few days to collectively identify some of the Amargosa Basin's key features, resources, and values. A focus of this initial summit was to help facilitate new connections between partners working on conservation issues in the basin, and to restrengthen ties that were atrophied by the isolation of the pandemic. There is an indescribable magic that fills the room when people are brought together in person around shared purposes, a magic that is only scarcely conjured in phone calls, emails, and Zoom meetings. For a few days at least, the magic that comes from real conversations between real people was a palpable and welcome presence.

**This convening is just the beginning, the first lines scrawled in a new chapter of collaborative conservation.** Many of the challenges and opportunities present in the region are big and complicated, such as how to effectively manage groundwater as the foundational natural resource that makes life in the desert possible, or how best to encourage responsible recreation in fragile wetland habitats. While the convening on March 7th was successful in bringing together many partners to jumpstart these conversations, in reality there are hundreds or perhaps thousands of individuals, user groups, communities, organizations, local governments, and stakeholders that have a vested interest in continued conservation in the Amargosa Basin whose voices will be crucial to informing ongoing partnerships. Over the coming months and years, the Amargosa Conservancy will work to bring these conversations to the doorsteps, kitchen tables, offices, conference rooms, and town halls where durable and diverse collaborative efforts are born.

The work our organization is taking on catalyzing collaboration in the basin is only made possible by the generous support of our donors. **Without the support of people like you who know and love the Amargosa Basin for the wonderland it is and who want to see it flourish, there is no story of collaborative conservation to be told.** Join us in writing this new chapter today with a donation to the Amargosa Conservancy. We can do more than get by with a little help from our friends: we can do wonders. ♡



**Onward,**

**Mason Voehl, executive director**



Snow in the Nopah Range





Desert Star Flower

## CAN SUPERBLOOMS BRING HOPE IN AN ERA OF CHANGING CLIMATE?

BY: NAOMI FRAGA

The **Amargosa Basin** is renowned for its beautiful landscapes and natural wonders, including stunning spring wildflower displays. These extraordinary blooms usually coincide with a particular set of weather conditions, including above average winter rainfall and relatively cool temperatures in the spring, often resulting in what has been coined a "superbloom."

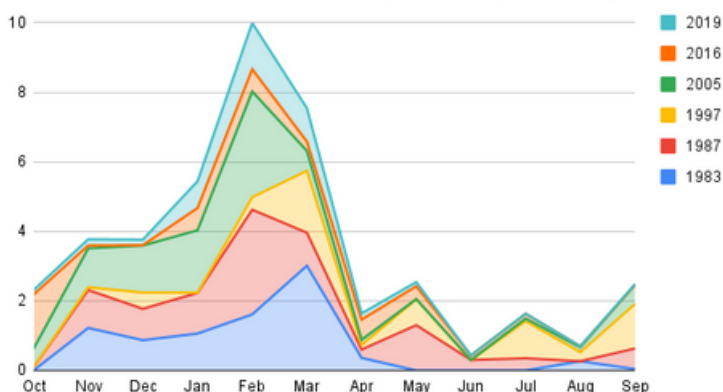
Superblooms are an extraordinary sight to see, with vast expanses of vibrant wildflowers carpeting hillsides, bajadas and desert washes, creating stunning and unforgettable visual displays of nature's abundance. The Amargosa basin is home to a diverse array of wildflowers, including desert gold (*Geraea canescens*), notch leaved phacelia (*Phacelia crenulata*), brown-eyed evening-primrose (*Chylismia claviformis*), golden desert snapdragon (*Antirrhinum mohavea*), gravel ghost (*Atrichoseris platyphylla*), Bigelow's monkeyflower (*Diplacus bigelovii*), and many more. Up to 50% of the plant species occurring in the Amargosa basin are these ephemeral and fleeting wildflowers.

Wildflowers that comprise superblooms are typically winter annuals, meaning they germinate in winter, bloom in spring and complete their life cycle before the onset of summer drought. It's a drought evasion strategy that is common in areas influenced by the Mediterranean climate where the majority of the precipitation falls in the winter. Superblooms are not only a spectacle to behold, but they also signify an event of great ecological importance.

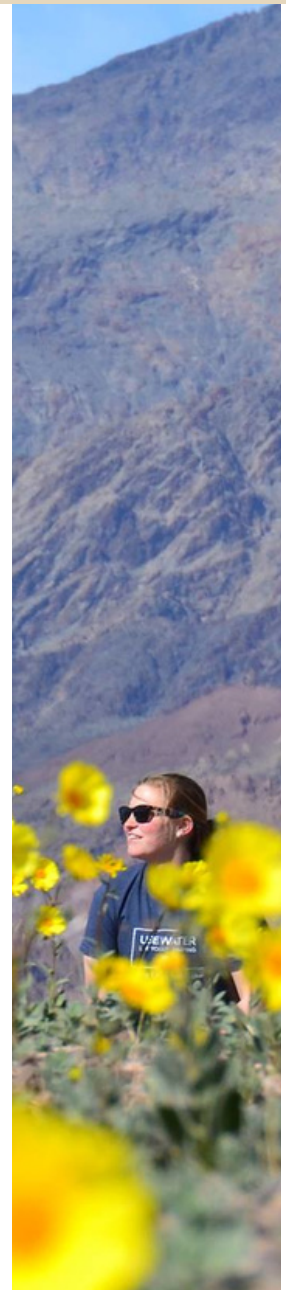
Mass blooms of wildflowers sustain pollinators and desert tortoises, and when the blooms turn to fruit they replenish a vast soil seed bank. Unfortunately, under changing climate conditions, including rising temperatures and prolonged drought, the frequency, intensity, and duration of these extraordinary wildflower displays are threatened.

Over the past 40 years we have seen at least seven "superbloom" events in the Amargosa Basin. During this timeframe, they appear to have occurred every 5-10 years (see below). Under changing climate conditions we can expect that these events will become even more rare due to the increased likelihood of multiple and successive

Timeframe of precip for the water year in superbloom years



(continued on next page)



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## CAN SUPERBLOOMS BRING HOPE IN AN ERA OF CHANGING CLIMATE? (cont.)

Yellow Cups Flower

(continued from page 3)

years of drought and warmer temperatures in the spring. The last superbloom event that occurred in the Amargosa basin was in 2016, although 2019 also resulted in many localized displays.

A scientific paper by Jan Bowers (2005) tracked the occurrence of superblooms across the Mojave and Sonoran deserts and found that they were more likely to occur in the Mojave Desert when precipitation was 30% above than the long term average. In Shoshone, the 30-year precipitation average is 4.38 inches, and 30% would require nearly 6 inches of rain to trigger a mass germination event and superbloom status. Past data indicates that the majority of precipitation in superbloom years has occurred between October and March, with February frequently having the most rainfall.

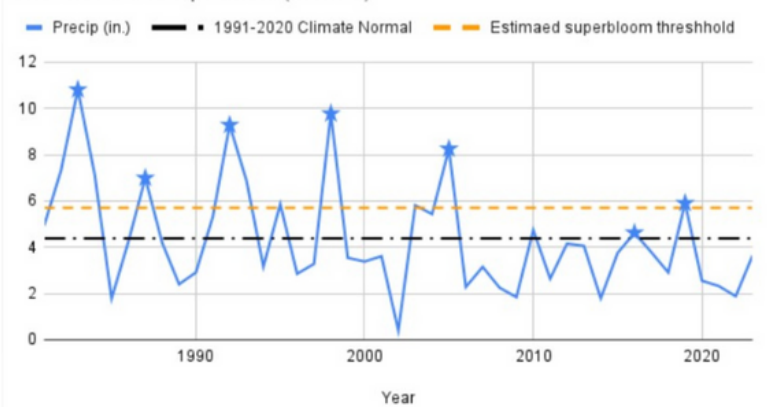
In between superbloom years the annual wildflowers remain dormant as seeds in a soil seed bank.

Many of these wildflower species have relatively long-lived seeds, living decades or even hundreds of years in their dormant phase. This is an important adaptation in an arid environment that is subject to highly variable and unpredictable rainfall. It is a strategy that can allow these species to persist during prolonged megadroughts, bringing hope in those years with sufficient precipitation.

So far in 2023 the Amargosa Basin has only received about 3 to 4 inches of rainfall or near the 30-year average. While any precipitation is welcome, the Amargosa basin has largely been left out of the bounty of the atmospheric rivers California received in 2023. In fact, the drought status for the Amargosa basin remains severe according to the drought monitor (<https://droughtmonitor.unl.edu/>).

The winter of 2023 is yet another reminder that the Amargosa basin is a land of extremes. It is among the driest locations in North America, yet it supports a bounty of life, some of it in the form of a dormant seed, waiting for the next burst of winter rain. ♀

Shoshone Precipitation (inches)



Right: Precipitation data (inches) for Shoshone, CA downloaded from PRISM Climate Group Explorer. \* 30-year climate averages (1991-2020) are indicated with a black dashed line and threshold of 30% above the 30 year average are displayed with an orange dashed line. Superbloom years are indicated with a blue star. So while we may not see wildflowers at their fullest in the Amargosa basin this spring, we will see patches of wildflowers and perennial shrubs such as desert holly (*Atriplex hymenelytra*), creosote bush (*Larrea tridentata*), and brittle bush (*Encelia farinosa*) put on new growth and flower as they receive some reprieve from the ongoing megadrought.

[\\*prism.oregonstate.edu/explorer/](https://prism.oregonstate.edu/explorer/)





## AN INTERVIEW WITH ASH MEADOWS NATIONAL WILDLIFE REFUGE MANAGER, MICHAEL BOWER

King's Pool

### **AC: For those that might not be familiar with the area, where is Ash Meadows National Wildlife Refuge located and what are its key features and values?**

MB: Ash Meadows National Wildlife Refuge (NWR) is a desert oasis located in the Amargosa Valley, approximately 30 miles west of Pahrump, Nevada. It is an ancestral homeland and important gathering place for the Newe and Nuwvi Nations. The refuge is a biodiversity hotspot, supporting the greatest concentration of endemic species in the United States. Over 50 springs and seeps support unique fish, wildlife, and rare plants including 12 species listed as threatened or endangered and 26 species found nowhere else on Earth. In recognition of its unique significance, Ash Meadows NWR is designated a wetland of international importance.

### **Tell us about some of the current major projects in the works at the refuge.**

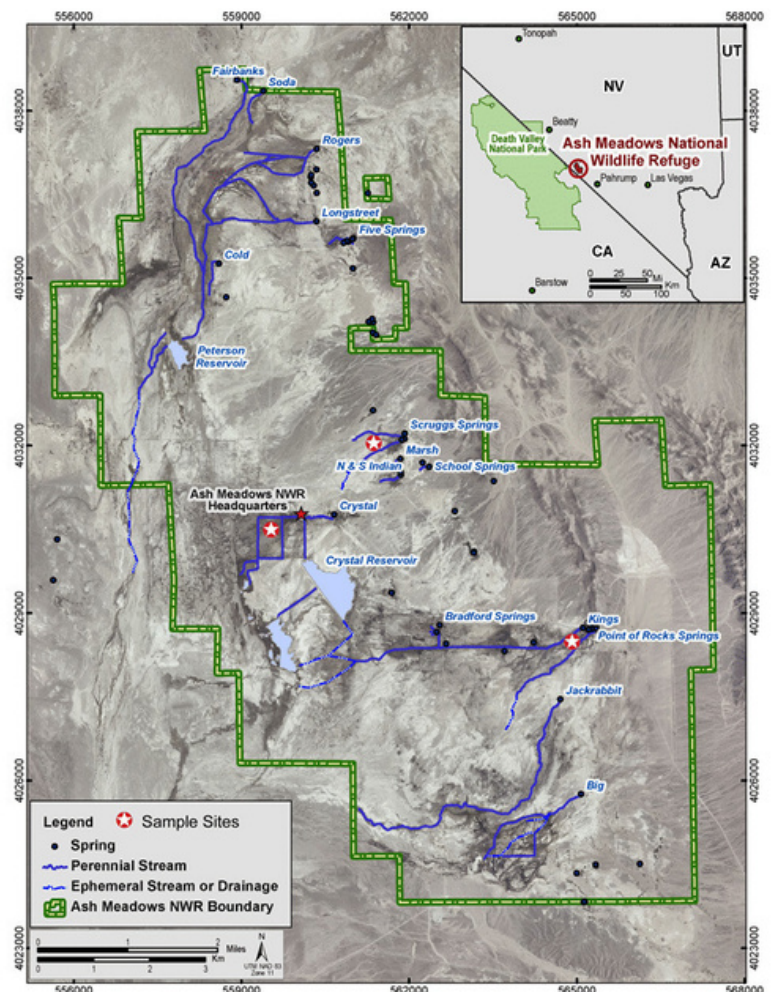
At one point or another, most of the springs of Ash Meadows NWR were developed for irrigation and agriculture. We continue to focus on reclaiming irrigation infrastructure and restoring the functionality of our spring and wetland habitats for the benefit of native fish, wildlife, and plants. Two recent examples include the restoration of Tubbs Spring and Five Springs, both of which continue to be the focus of ongoing invasive plant management and revegetation efforts. The next restoration target is Cold Spring, in the Upper Carson Slough, which is scheduled to be restored this spring. As a part of this restoration project, we are also planning a new backcountry trail system to provide additional opportunities for nature exploration on the refuge.

### **We understand there are some plans in the works for removing and restoring Crystal Reservoir. What challenges are presented by that effort, and what benefits will be derived if it is successfully implemented?**

A primary challenge of restoring habitats at Ash Meadows NWR is balancing the needs of so many unique native species. We have a stewardship responsibility to each of these species.

We also need to restore ecosystem drivers such as hydrology that are ultimately responsible for sustaining natural habitats over time. This requires a great deal of humility. For me, this means incorporating effective science collaborations to target key design uncertainties and long-term ecological monitoring to ensure active learning and adaptation following implementation. Reclamation of Crystal Reservoir would eliminate a primary source of invasive plants such as tamarisk and nonnative predatory fishes such as green sunfish and largemouth bass.

*(continues)*







Spring-loving Centaury

Invasive species continue to pose one of the most pressing threats to our native biodiversity at Ash Meadows NWR, commanding much of the focus of our scarce staff and funding resources. In terms of efficiency, eliminating primary sources of invasive species is among the best investments we can make in conservation of our unique biodiversity.

***What are your personal favorite places and experiences at Ash Meadows?***

I am captivated by the serenity of King's Pool along the Point-of-Rocks interpretive boardwalk. This is a great viewing opportunity for Ash Meadows Amargosa pupfish, one of the stars of the refuge. I could stare into the water watching the pupfish chase each other for hours!

I have grown to love the many unique native plants that bloom in restored habitats along the Crystal Spring boardwalk in the summer.

These habitats were once little more than dirt drainage ditches. Now, species such as spring-loving centaury with their delicate pink flowers serve reminders of the resilience of nature.

I am also in awe of the collaborations showcased in our visitor center and exhibits. I think they did a wonderful job highlighting the significance Ash Meadows holds for the Newe and Nuwuvi Nations and drawing attention to our unique biodiversity. It is such a unique opportunity for folks in our neighboring communities to connect with nature. As is often the case in the desert, if you spend a bit of quiet time here, beauty will reveal itself in unexpected ways. ♡

*Michael Bower, Ash Meadows National Wildlife Refuge Manager  
US Fish and Wildlife Service*

## SILENT ART AUCTION



**LAS VEGAS, NV  
SATURDAY, APRIL 29TH  
5:00PM-8:00PM**

**TICKETS ARE LIMITED.  
SCAN QR CODE FOR MORE  
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## CAN'T ATTEND IN PERSON? BID ONLINE!

If you can't join us in person on the 29th, you can still join in the auction fun! Scan the QR code to participate in the virtual art auction. When you bid on art, 100% of the proceeds benefit the Amargosa Conservancy, a 501(c)(3) organization. Take a part of the Amargosa Basin home with you!







## THE BILL CHRISTIAN TRAILHEAD: A LEGACY PROJECT

BY: CHRIS ROHOLT

After graduation from Harvard law school, Bill Christian worked as a District Attorney in Bethel, Alaska. He continued to work as an attorney in a variety of capacities in Fairbanks, Anchorage, and Pasadena. These provided opportunities to deepen his love of wild places and broaden his ability to work with a wide variety of folks and organizations. However, it was his relationship with The Nature Conservancy where his love for conservation blossomed. Through his work with TNC, he developed a close relationship with Susan Sorrells and her cousin Brian Brown based on a shared love of the Amargosa River. Susan owns the Village of Shoshone and Brian owns China Ranch Date Farm. Together, with others, they formed the Amargosa Conservancy.

The Amargosa Conservancy has supported many diverse initiatives in the Amargosa Basin, one of which is the enhancement of recreation opportunities along the river system. To this end, the Amargosa Conservancy acquired funding and constructed a hiking trail from China Ranch Date Farm down Willow Creek to its confluence with the Amargosa River and continuing along the River itself. Since the trail encompasses magnificent scenery, interesting flora and fauna, and historical features, the trail receives an enormous amount of daily use.

Even prior to the establishment of the Amargosa Conservancy, there have been desires to develop a hiking trail network in this portion of the Amargosa Basin. These trails would better allow folks to experience the Old Spanish National Historic Trail, the Amargosa Wild and Scenic River, the Kingston Range Wilderness Area as well as the multitude of natural and historic features for which the area is known. Bill was a proponent of this expansion of recreational opportunities. One of his last actions was to fund the identification and development of a trail segment that met these goals. As such, the Amargosa Conservancy has and will continue to work with all parties to identify a trail segment that will accomplish Bill's last wishes and recognize his many contributions to the Amargosa region.

Mason Voehl, our Executive Director, and several Board Members have worked tirelessly over the last year to develop and analyze routes for such a trail segment. Challenges include providing legal access, recognizing and reducing environmental concerns, avoiding private property, and providing the scenic and educational rewards of a hiking experience available only in the Amargosa Basin.

We have worked with several adjacent land owners, the Bureau of Land Management that manages the properties traversed by any trail, Inyo County, the National Park Service, the Old Spanish National Historic Trail Association and other organizations to identify a trail segment that properly recognizes Bill Christian's contributions to this landscape.



**We believe we have identified a suitable site and hiking route at the north end of the Amargosa Canyon near Tecopa, CA.** The trailhead would include a parking area, educational kiosks, and a public toilet. The hiking path would proceed southerly and then westerly for less than a mile where it would join the abandoned Tonopah and Tidewater RR grade along the east side of the Amargosa River. If desired, one could then walk downstream approximately four miles to the confluence with Willow Creek before retracing their route to the Bill Christian Trailhead or hike up a mile up the existing Willow Creek Trail and treat themselves to a well-earned date shake at China Ranch.

**While we have made great progress, much work remains. We will need robust support from the local communities and our Amargosa Conservancy members to make this vision a reality. Please support this important legacy project in Bill's memory by donating to the Amargosa Conservancy today.** ♡





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Group photo of the Amargosa Summit at Ash Meadows National Wildlife Refuge



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