



Photo FWS/Ben Jurand

New Visitor Center Opens to Great Success!

After several years of planning and construction, the new visitor center at Ash Meadows opened to an enthusiastic public on December 27, 2014. Among the most significant steps toward the future preservation of Ash Meadows, the new visitor center has increased visitation more than twofold in its first six months, reaching a wider range of locals and travelers than ever before.

The state-of-the-art \$10 million facility was funded entirely through public land sales in the Las Vegas Valley rather than federal tax dollars and offers a breadth of interactive exhibits for people of all ages. Topics covered include: the history of the Amargosa Valley, the region's geology and topography, the abundant plant and

animal species that call the refuge home, and much more.

An accessible boardwalk to Crystal Spring—a prime spot for viewing the endangered Ash Meadows Amargosa pupfish—juts off the rear of the building and is just short of one mile round trip.

Besides the exhibits, the visitor center also features screenings of the Ash Meadows movie, conference rooms, and an outdoor classroom. An updated bookstore, administered by the Death Valley Natural History Association, offers many exciting new products. You're sure to find something that surprises and excites at our new facility, whether you're a first-time visitor or a seasoned veteran.

The official Open House celebration took place on March 7th of this year



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Volunteer Teresa Skye welcomes visitors at the official Open House celebration on March 7, 2015.

and was attended by more than 400 visitors. Guests enjoyed games and activities ranging from educational demonstrations on local wildlife to face painting and arts and crafts for kids.

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All articles written by Tim Griffith



Photo FWS/Dan Balduini

A new section of Crystal Boardwalk has been added, giving visitors direct access to Crystal Spring from the Visitor Center. The boardwalk is now a loop, just shy of one mile.

Members of the Nuwuvi Working Group also attended, as the group was instrumental in the design process of interpretive exhibits and provided valuable Nuwuvi (Southern Paiute) and Newe (Western Shoshone) perspectives on the area. But if you weren't able to make it to the Open House, don't despair: we welcome visitors daily from 9:00 am to 4:30 pm, and will host many great events in the future as well. We hope to see you soon! ✦



Photo FWS/Dan Balduini

Members of the Nuwuvi Working Group enjoying the Open House festivities.



Photos FWS

Clockwise from top left: visitors browse the bookstore, watch the Ash Meadows movie, relax at the picnic area at the new visitor center, and enjoy interactive exhibits.



Local Students Discover Ash Meadows

In addition to increasing the number of daily visitors to Ash Meadows National Wildlife Refuge, the new visitor center offers a great many educational opportunities for student groups of all levels. Through our partnership with Nye County Water District—which covered the transportation costs of recent field trips—students were able to explore the new visitor center, walk the Crystal Boardwalk and participate in water conservation and wildlife themed activities. We believe that educating our youth on the importance of wildlife and water conservation is extremely important for the future of the Southwest, especially in light of the recent drought affecting much of the region.

Over 300 students enjoyed our

various programs, coming from towns all over Southern Nevada including Pahrump, Beatty, Amargosa, and Henderson, along with multiple homeschool groups.

Ash Meadows also provides programs for higher education groups and has hosted environmental science classes from California State Long Beach and University of Nevada Las Vegas this spring, highlighting the importance of Ash Meadows to our national legacy of protecting landscapes and the species that inhabit them. Graduate and undergraduate students have also had the chance to conduct original research, helping the refuge as they gain valuable experience for their future careers.

We'd be thrilled to accommodate your school group any time of the year. If

you have any queries about educational opportunities at Ash Meadows, please refer your calls to the visitor center at 775-372-5435. ✦



Photo FWS

Students explore the interactive exhibits in the visitor center.



Photo FWS

State of the Pupfish

The Devils Hole pupfish (*Cyprinodon diabolis*) is one of the most critically endangered fish in the world. In fact, these tiny fish often considered to be the rarest fish on earth! They live out the entirety of their lives in the top 65 feet of the Devils Hole—a water-filled chasm extending more than five hundred feet deep—and are entirely cut-off from nearby fish communities. Unlike the various springs of Ash Meadows, Devils Hole is not a flowing source of water, but is a narrow passageway that pierces deep into the limestone bedrock, forming a rare connection between the earth’s surface and an immense aquifer beneath. Undoubtedly, the fact that this aquatic ecosystem is stranded in a desert, comparatively as isolated as an island in the middle of the ocean, ensures the Devils Hole pupfish a rocky existence—but what is being done to help them?

With the Devils Hole pupfish living under constant threat of extinction due to their miniscule population size and restricted habitat, it is vital that we take their protection seriously. After all, Ash Meadows—along with all its beautiful plants, animals and broad vistas—has been preserved from agriculture and urban development due in large part to these small, iridescent fish. In response to the plight of these cave dwellers, biologists working with the US Fish & Wildlife Service and the National Park Service have sprung into action, maintaining a state-of-the-art fish conservation facility that will act as a lifeboat for the dwindling population, should anything drastic occur in Devils Hole.

Rather than capturing adult pupfish and attempting to breed them in captivity, biologists have opted to harvest eggs and raise them to

adulthood in a controlled location. Recently, Devils Hole pupfish have begun to breed in their captive environment, the first signs of a potentially self-sustaining stock for years to come. Additionally, scientists at the conservation facility are raising the many aquatic invertebrates that call the Devils Hole home—an important food source for the pupfish—in order to preserve other pieces of the unique ecosystem.

At Devils Hole itself, new measures are underway to help the pupfish survive as the system continues to rebound from the widespread water pumping of the 60s and 70s. The water level of the habitat is kept under close watch, as the pupfish tend to feed and breed primarily on a shallow rock shelf at the surface of the cave. Biannual pupfish

counts are conducted, as are studies to determine the amount of foreign debris that falls into the water at various times of the year. Spring counts of the Devils Hole pupfish in Devils Hole itself were estimated to be approximately 87 individual fish, an increase from an all-time low of 35 in 2013. To provide the pupfish with the best chance of survival, biologists have also begun to disperse a specially made fish feed throughout the surface waters. There are far too many efforts being made to highlight all of them, but there is evidence that they are helping the population. Though still below historic levels, the Devils Hole pupfish is doing better in recent years—we hope this trend will continue, and with the efforts of many biologists and researchers, these resilient fish have a fighting chance. ✨



Photo FWS/Ben Jurand

A view of Devils Hole, home of the rarest fish on earth. Eggs are gathered from Devils Hole and brought to the controlled environment of the Fish Conservation Facility.

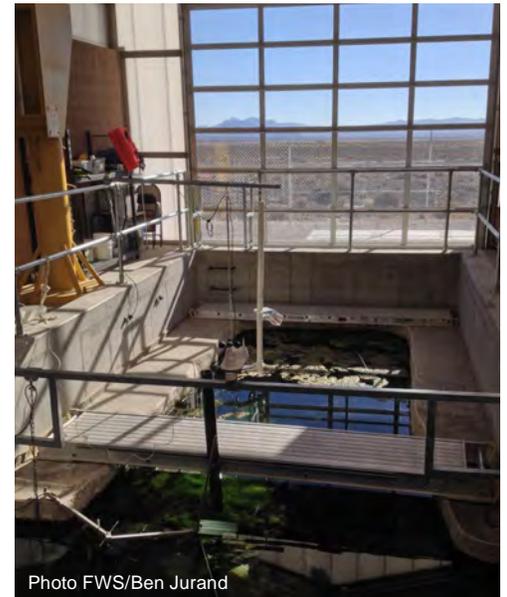


Photo FWS/Ben Jurand

Inside the Fish Conservation Facility, where a “lifeboat” population of Devils Hole pupfish live in a tank that mimics their natural habitat, featuring a replica of the shelf on which the pupfish feed and spawn.

Volunteer Spotlight!

Hal Fairfield began volunteering at Ash Meadows more than five years ago and has since become an integral part of the refuge as our volunteer fish biologist. At first, Hal worked on group plant restoration projects, cutting cattails and removing invasive species, but soon enough he was taking part in fish salvage operations and other high-skill tasks. He then applied for the “adoption” of Rogers Spring, placing him in a direct stewardship role of this unique ecosystem. At Rogers Spring and nearby Longstreet Spring, Hal devoted countless hours to vegetation monitoring, fish monitoring, and invasive species removal; it is largely thanks to Hal that these springs are as pristine and healthy as they are today.

With the Rogers Spring adoption permit expiring, Hal moved on to various projects throughout the refuge. He took part in a large effort to remove crayfish and mosquito fish from Scruggs Spring, which turned out to be a huge success.

The endangered Warm Springs pupfish (*Cyprinodon nevadensis pectoralis*) of Warm Springs were relocated to holding tanks while water was diverted in order to encourage crayfish to leave the area. After two years, weekly monitoring had yielded sufficient data to declare the springs crayfish and mosquito fish free. The pupfish were moved back to their renovated home. Hal and others working on the project were able to sit back and let nature take its course, and so far, the project appears to have helped the pupfish immensely!

When Hal moved from Felton, California to Pahrump, Nevada in 2009, he had no definite plans to volunteer his time at Ash Meadows. He was a newly retired mechanical inspector with 30 years experience, but he had always been fascinated with biology and the natural world. Hal’s dedication is a great inspiration to us here at Ash Meadows. Summing up his feelings on volunteering, working for the natural world, and his hopes for more

volunteers in the future, he says, “There seem to be opportunities for many other people here. My career was in mechanical engineering, but I’ve always been interested in biology. I think there are lots of people in the public that this could relate to. There is a whole world of animals here to take care of. We are stewards of the land, and to promote that, we need to be an active part of it.”

Thanks so much to Hal for his devotion! We don’t know where Ash Meadows would be without him! ✨



Volunteer Hal Fairfield in his office at the new Ash Meadows visitor center.



Photo courtesy of Connie Gale



Photo courtesy of Connie Gale



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