U. S. Fish & Wildlife Service
Nevada Fish and Wildlife Office

Conserving the biological diversity of the Great Basin, Eastern Sierra & Mojave Desert

Summer 2009

Inside This Issue:

Service Provides Assistance To Summit Lake Paiute Tribe	2
Shared Personnel Resources	2
Lake Mead Serves As Outdoor Classroom	3
Let's Go Outside!	4
Devils Hole Pupfish Population On The Rise	5
Devils Hole Pupfish Team Receives Conservation Award	6
Wings and Wildlife Festival Of Southern Nevada	6
Surveying For Rare Plants	7
A Message From The State Supervisor	8

New Technology Used To Monitor Frogs

Chad Mellison (right) and Allen Taylor install an antenna to track the movement of spotted frogs in the upper Reese River Basin.

Columbia spotted frog *(Rana luteiventris)*

To gain a better understanding of a population of Columbia spotted frogs, a team of Nevada Fish and Wildlife Office (Service) biologists began using a tracking method traditionally used to track movements of fish. Using passive integrated transponders, commonly referred to as PIT tags, biologists are now able to track movements of tagged frogs year-around in a remote area in the upper Reese River Basin.

PIT tags are tiny internal electronic markers. Each PIT tag contains a unique alphanumeric code that transmits its information when it is activated by a reader or antenna, similar to scanning a bar code in a grocery store. As tagged spotted frogs pass through specially designed antennas, biologists can track their movement through stream channels.

By using this technology, biologists will soon have a better understanding of when and where the frogs move, growth rates, population estimates and survival. They will now be able to answer questions such as: are frogs only moving in spring during high water to get to breeding grounds; do they move over the course of the summer as certain habitats dry and become unsuitable; what sex is most likely to move; and is a certain age group more likely to move than another?

Service Provides Assistance To Summit Lake Paiute Tribe

Mahogany Creek before (above) and after (right) restoration.

An irrigation control structure was constructed in the mid 1930's on Mahogany Creek near the east boundary of the Summit Lake Paiute Tribe Reservation. However, lack of use and maintenance caused the structure to deteriorate. Turnout gates broke or rusted closed, willows and wild rose surrounded the structure with their roots and branches growing between foundation and stem walls, and the structure eventually filled with silt causing floor boards to rot.

In 2007, the Service provided technical assistance as well as funding to remove the structure and enhance fish passage for the threatened Lahontan cutthroat trout. The project required an archeological clearance and environmental analysis to ensure the project would not compromise cultural or historic resources or promote extensive erosion. With these factors in mind, a team of experts representing several federal agencies and a private ecologic restoration consulting firm designed and engineered a plan to remove the structure and restore stream connectivity for migrating fish and stream organisms.

In November 2008, the structure was removed and the site restored. With the assistance of the Tribe's resource staff, restoration work was completed within two days and with less than 18 hours of on-the-ground disturbance time. There was minimal siltation of the stream, and no observed fish mortalities. Willow and wild rose root mass in the project area will allow for speedy colonization of native riparian vegetation returning this stream back to a more natural environment, allowing fish passage and restoring important Lahontan cutthroat trout habitat.

Shared Personnel Resources

In March 2007, the Service and the Summit Lake Paiute Tribe entered into an agreement which allows a Service employee to serve as the Natural Resource Director for the Tribe. The appointment of William Cowan to that position benefits the Tribe, the Service, Bureau of Indian Affairs, Bureau of Reclamation, and the Environmental Protection Agency in helping to ensure continuity of federal contract and grant services. It enhances governmental partnerships that fulfill the Service's mission of working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats.

As the Director, William provides oversight of the fisheries, wildlife, range, and water management programs. He supervises a full time staff as well as seasonal employees. William, who is himself, a member of the Tribe, was successful in securing one of this year's Tribal Wildlife Grants in the amount of $198,000 to be used for invasive weed eradication on the Reservation.

William Cowan, Service employee and Director of Natural Resources for the Summit Lake Paiute Tribe

Lake Mead, An Outdoor Classroom

Photo courtesy of Biowest

Ryan Ward, student (left), Ron Rogers, Biowest (center) and Erik Orsak, Service biologist, hold a razorback sucker *(Xyrauchen texanus)* from Lake Mead.

This spring, Erik Orsak, an environmental contaminants biologist for the Service, was contacted by Foothill High School in Henderson, Nevada. The school had a high school senior, Ryan Ward, who was interested in shadowing a wildlife biologist in the field so that he could complete a class assignment.

Erik offered to take Ryan into the field on a project that involved collection of endangered razorback suckers in Lake Mead. "Remembering how much I disliked getting up early when I was a teenager, I was worried about Ryan's reaction when I told him that I would need to pick him up at his house at 6 a.m. so we could meet the Biowest boat crew at the dock at 6:30. Ryan didn't seem to mind and he was ready to go on time," Erik said.

Trammel netting razorback suckers, an fish native to the Colorado River, is not glamorous. The fishing nets consist of a small mesh with overlying trammel lines positioned in a diagonal pattern making the nets very effective at catching fish. The problem is, for every one razorback sucker you might catch, you typically untangle and remove dozens of non-native fish, such as striped bass, channel catfish, and common carp. It can take a three-person crew over six hours to remove upwards of 200 fish from three nets; and even then you may come up empty-handed without a single razorback to show for all the work. "Ryan, however, jumped right in, got his hands dirty, asked lots of questions, and really seemed to be engaged," said Erik.

This particular day, Ryan and the crew hauled in 14 razorbacks from Las Vegas Bay, a record catch for the year. Ryan even got to release a juvenile razorback sucker back into the water once it had been measured and weighed. At the end of the day, Ryan seemed to enjoy the whole experience. "I would venture to guess that Ryan is the only high school student in the Las Vegas Valley that has seen a living razorback sucker," Erik added. "Who knows, Ryan may even become a wildlife biologist himself some day."

Research Partners

Biowest, a private consulting firm from Utah, has been conducting population studies on Lake Mead razorback suckers since the late 1990's. These studies are funded by both the Bureau of Reclamation and the Southern Nevada Water Authority.

The Service has been working with the U. S. Geological Survey for over 10 years to assess the impacts of pollution on fish health in Lake Mead. Recently these two efforts combined into a partnership to assess the reproductive health of razorback suckers.

Let's Go Outside!

Looking for activities to work with people and children outside is a high priority for the Service. This spring, staff from the Las Vegas and Reno Offices and Lahontan National Fish Hatchery Complex took advantage of opportunities to do just that.

From festivals to formal environmental education activities, the Service participated in over 15 organized events this spring. The size of the groups participating in these events ranged from a classroom of students to thousands of people.

Devils Hole Pupfish Population On The Rise

By Paul Barrett

Divers prepare to descend in Devils Hole (far left), Devils Hole pupfish *(Cyprinodon diabolis)* (left) and a diver counts pupfish in Devils Hole (below).

After a decade of declining numbers, the Devils Hole pupfish appears to have turned the corner and its population is headed in the right direction. This amazing species only occurs in Devils Hole, a water-filled chasm in a detached portion of Death Valley National Park within Ash Meadows National Wildlife Refuge in Nye County, Nevada. The entire species exists in a pool approximately 30 by 100 feet at the surface. Although the cavern is over 400 feet deep, the pupfish are believed to spawn exclusively on a shallow rock shelf just under the waters surface. This iridescent blue, inch-long fish is short lived (approximately one year) and was listed as endangered in 1967.

Since population surveys began, its numbers have not exceed 553 individuals. For reasons that are still unclear, the population of Devils Hole pupfish began to decline in the mid 1990's. By the fall of 2006, an estimated 38 fish remained in the wild and two refuge populations were lost. Past research demonstrated that the population naturally cycles in Devils Hole with the largest number of pupfish occurring in the fall and declining over the winter. Although they spawn year round in the constant 93°F water, the adults that survive the winter produce most of the next generation of pupfish in the spring.

In 2006, the Service, National Park Service, and Nevada Department of Wildlife launched an emergency effort to reverse the decline of the species. Working with partners as diverse as Shark Reef Aquarium at Mandalay Bay in Las Vegas, they struggled to find innovative ways to reverse the population decline.

Suspecting that the food source may be a limiting factor, an artificial food was developed and an automatic feeder installed in Devils Hole. Originally a stop gap measure, this has proven to be so successful that it has remained in operation. Another critical decision was to limit access into Devils Hole and not remove pupfish for experimental or captive propagation until the fall population exceedes 200 fish and an increasing population trend is demonstrated for three years.

Biannual adult population surveys in April and in October continue. In addition to a surface count, cave divers enter Devils Hole and descend approximately 100 feet to count the number of adult pupfish. The average of these dives is used to determine the spring and fall population estimates.

Since 2007, the population estimates have started to swing upward. The fall 2008 count was 127 fish; the first time triple digits have been estimated since 2004, and the first three year upward trend since 1996. The average number of pupfish estimated this April was 70. This represents a 56% increase over the April 2008, estimate of 45 fish.

Devils Hole Pupfish Team Receives Conservation Achievement Award

"These professionals represent the highest ideals of our profession and should be recognized by the American Fisheries Society..."

Western Division of the American Fisheries Society

Paul Barrett, Service, Jon Sjoberg, Nevada Department of Wildlife, and John Wullschleger, Mike Bower, Kevin Wilson and D. Bailey Gaines from Death Valley National Park were presented a Conservation Achievement Award by the American Fisheries Society, Western Division, in May for their efforts to reverse the decline of the Devils Hole pupfish.

According to a statement issued from the Society, the team was honored for its intense conservation actions which reversed the decline and doubled the population of pupfish, thus far, saving them from eminent extinction. "These professionals represent the highest ideals of our profession and should be recognized by the American Fisheries Society for helping to protect a highly unique species and an important symbol of U. S. conservation efforts," the Society stated.

Wings and Wildlife Festival of Southern Nevada

Christiana Manville (above left) points out birds to participants on a Colorado River pontoon boat ride, Mark Olson (above right) discusses endangered Colorado River fish at Willow Beach National Fish Hatchery and Christiana Manville and Jeri Krueger (lower right) answer questions about migratory birds for participants at the Festival.

The first Wings and Wildlife Festival of Southern Nevada was held in Laughlin, Nevada, on March 13-16, 2009. The festival was organized by the Southern Nevada Birding & Wildlife Trails Partnership, a non-profit group composed of over 20 agencies and organizations, to promote wildlife tourism and environmental education. Over 250 individuals participated in one or more of the festival's field trips and educational seminars. The festival attracted visitors from as far away as Canada, New York, Wisconsin, Montana, and Texas. Over 100 bird species were observed, along with many other kinds of desert animals. The partners were pleased with the turn out and hope to reach more people in upcoming years.

Christiana Manville and Jeri Krueger of the Service along with staff and volunteers from the Desert National Wildlife Refuge Complex and Bill Williams National Wildlife Refuge, participated in all aspects of the festival. These Service employees assisted in planning the events, led field trips, presented a seminar on burrowing owls, and staffed educational booths. The festival also featured field trips to two Service facilities; Havasu National Wildlife Refuge and Willow Beach National Fish Hatchery.

Surveying For Rare Plants

Left, currant milkvetch *(Astragalus uncialis)* and Railroad Valley globemallow *(Sphaeralcea caespitosa var. williamsiae)* below.

In 2005, the Service provided Recovery Land Acquisition funding to assist the Nevada Department of Wildlife in purchasing Lockes Ranch in the Railroad Valley of central Nevada for conservation of the threatened Railroad Valley Springfish *(Crenichthys nevadae)*. As part of a restoration planning effort for the ranch, the Service's botanist, Steve Caicco, conducted a survey in May 2008, to see if any of the rare plants known occur in Railroad Valley occurred there. Steve found populations of the currant milkvetch and Railroad Valley globemallow do occur on a rocky upland adjacent to the wetlands. The milkvetch is a former candidate species and both plants are designated as sensitive species by the Bureau of Land Management.

Currant milkvetch grows as a tight cushion, seldom more than a few inches in diameter, and can bear a dozen or more large, bright-pink pea-like flowers. It is easy to spot when in flower but difficult to find once the flowers have faded. There are only seven known occurrences of the milkvetch in Nevada, all in the Railroad Valley. It is more common within a similarly narrow range in western Utah. Populations in Nevada tend to have fewer than 100 plants and, in some years, only a few plants are seen.

Globemallow has an upright growth form but seldom exceeds 10 inches in height. It bears several reddish-orange flowers. This plant, first identified as a new variety in 2002, is restricted to the Railroad Valley where it is reported in only six occurrences.

Although the two plant species often co-occur, globemallow is typically present in larger numbers at any given site. Both species bloom in spring, the milkvetch in mid-April and the globemallow a few weeks later.

This spring, Steve began a monitoring project for the milkvetch and will incorporate globemallow monitoring in the future. The purpose of the monitoring project is to provide a baseline against which population changes can be evaluated and to provide management recommendations to maintain viable populations of these species on the ranch in the future.

US Fish & Wildlife Service
Nevada Fish & Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502

Phone: 775-861-6300
Fax: 775-861-6301

We're on the web!

http://www.fws.gov/nevada

A Message From The Field Supervisor

Using the best available science and technology to conserve our trust resources is a high priority for us. Our biologists have expanded a technology generally used in monitoring fish to the monitoring of amphibians. This new way of monitoring Columbia spotted frogs will increase our knowledge about the species and aid us in making better informed decisions regarding their conservation.

We are cautiously optimistic that the population of Devils Hole pupfish will continue on an upward trend. This spring, we began implementing improved monitoring techniques and believe it will provide us with more accurate information on the species' population movement. The team that is responsible for implementing the conservation efforts for the pupfish has recently been recognized by the American Fisheries Society for their efforts to reverse the decline of the species. It is an honor to be recognized by this national organization of their peers and I congratulate them.

Sincerely,

Robert D. Williams
Nevada State Supervisor