

NANFA Convention 2010: Part 2: North Beyond Las Vegas

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In the previous issue, I highlighted the fishes and habitats in Ash Meadows that we will visit during the first half of the 2010 NANFA convention. After the “regular” portion of the convention is over, we will have an extended field trip of over one to three days visiting a number of places east and north of Las Vegas. For the most part, we will be no more than four hours away from Vegas, so folks can tag along for as long as they like before heading home. This area has historically been associated with the Colorado River Basin, but due to its arid nature most of it is now highly isolated and nearly all of the fishes there are endemic to the region. Many of the aquatic habitats have been altered due to human use of the region’s water supply. Not surprisingly, most of the area’s fishes are either threatened or endangered.

One of the first places we will visit is Rogers Spring in the Lake Mead National Recreation Area. This is one of the strangest fish habitats around, not because of the environment, but because of what you might see there. In its original state, the spring likely didn’t have any fishes whatsoever. At some point in time the spring was backed up with a small berm which created a large pool of warm water (86° F). Since at least the 1960s this spring has been a dumping ground for aquarium fish. I visited this site every four to six weeks in the late 1990s and on every trip we found new species that had not previously been recorded! Typically, the spring contains large numbers of Shortfin Molly (*Poecilia mexicana*), Convict Cichlid (*Amatitlania nigrofasciata*) and Rio Grande Cichlid (*Herichthys cyanoguttatus*), all of which can easily be observed from the shore or while snorkeling. It is anyone’s guess what other species might be present.

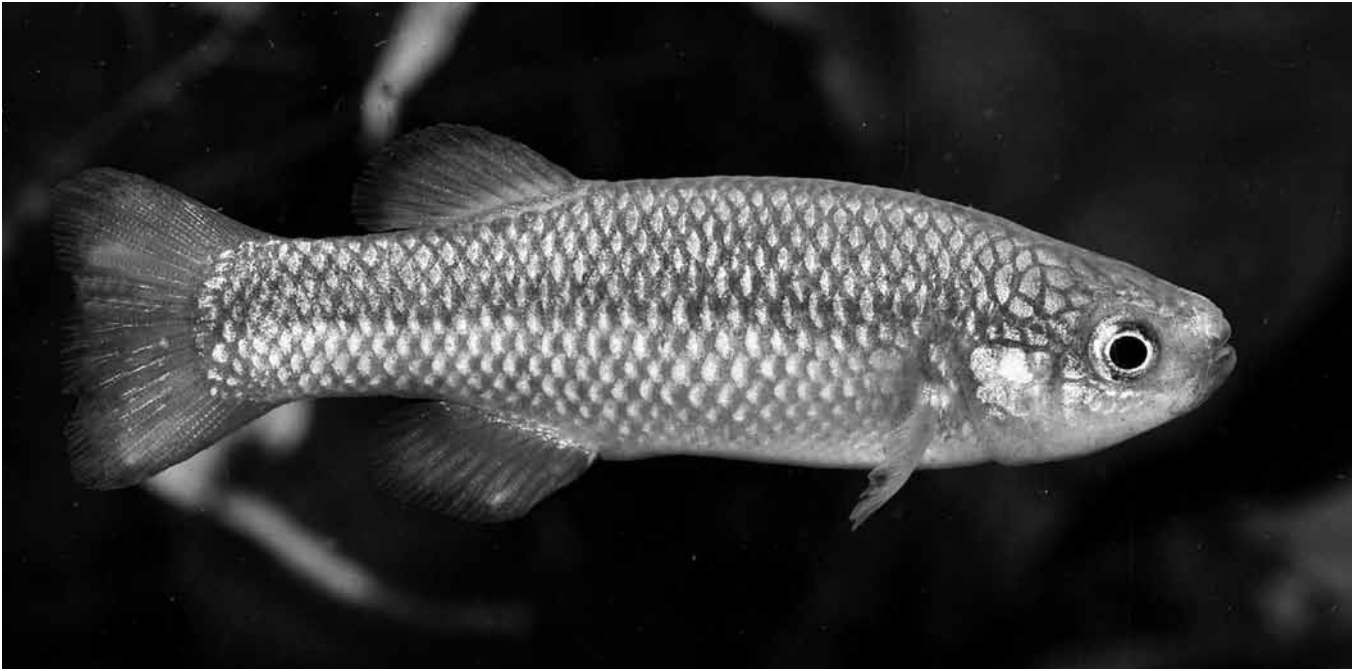
Springfishes are the main group of fishes whose habitats

we’ll be visiting. Springfishes inhabit many spring-fed environments along the Pluvial White River Valley, a currently dry river that, during wetter time periods, likely formed a continuous stream from north of Preston until it reached the Moapa River (which drains into the Colorado River via the Virgin River). It’s amazing to drive along the river valley and picture the river with water in it and how different the valley must have appeared. Some portions are wide open, while in a couple of areas the river passes through narrow canyons where I usually picture myself seining against the canyon walls thousands of years ago when the river flowed with both water and life!

Two species of springfish are currently recognized: White River Springfish (*Crenichthys baileyi*) (Fig. 1 and color plate 1, p. 20) and Railroad Valley Springfish (*C. nevadae*). The first species occurs along the entire length of the Pluvial White River, while Railroad Valley Springfish is limited to several springs in Railroad Valley, which occurs immediately west of the White River Valley. White River Springfish exist as a number of extremely isolated populations that have been recognized as five subspecies. Several of the springs inhabited by springfishes are quite warm, between 30–37° C (86–99° F). A few other native species also occur in these areas, but they are mostly limited to areas with cooler water.

I will now provide specific details on the habitats from south to north as we move upstream the Pluvial White River.

The lowermost portion of this valley contains the Moapa River, which starts as a large number of springheads just northwest of the town of Moapa. As is common in the western deserts, many aquatic habitats are spring fed and, as a result, often have large numbers of endemic species of both fishes and invertebrates such as snails, amphipods and others.



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Fig. 1.
Adult male *Crenichthys baileyi*.

The Moapa River is no exception as it contains an endemic genus of minnow, the Moapa Dace (*Moapa coriacea*), an endemic subspecies of Moapa White River Springfish (*C. b. moapae*), an endemic subspecies of Moapa Speckled Dace (*Rhinichthys osculus moapae*), and important populations of Virgin River Roundtail Chub (*Gila seminuda*). These fishes all occur with some degree of separation as the first two species are only found near upper spring sources, while the other species are more common downstream in cooler temperatures. In addition, a number of exotic fishes are present including: Red Shiner (*Cyprinella lutrensis*) in the lower sections, *Poecilia mexicana*, Western Mosquitofish (*Gambusia affinis*) and Blue Tilapia (*Oreochromis aureus*). We will visit the Moapa National Wildlife Refuge, which has a number of smaller springheads and lots of opportunities to observe the native fishes including a side-on viewing window.

The next series of springfish habitats occur approximately 60 miles upstream of the Moapa River. Here, three large springs — Ash, Crystal and Hiko — feed a series of aquatic habitats that contain two springfish subspecies, Ash White River Springfish (*C. b. baileyi*) and Hiko White River Springfish (*C. b. grandis*), while the lower reaches contain an endemic Pahrnagat Speckled Dace subspecies (*R. o. velifer*), Pahrnagat Roundtail Chub (*Gila jordani*). The area also was home to the extinct Pahrnagat Spinedace (*Lepidomeda altive-*

lis) and the extirpated White River Desert Sucker (*Catostomus clarkii intermedius*). Several exotic species now occur in the springheads including Shortfin Molly, Western Mosquitofish and Convict Cichlid. These larger springs are delightful to snorkel in as they contain extensive mats of plants and green algae that provide a strong contrast to the orange coloration of the springfish. Ash Spring at the source is around 97° F while Crystal Spring is a cooler 79° F. We should be able to snorkel in both.


Another 60 miles north are a series of warm springs that contain the Mormon White River Springfish (*C. b. thermophilus*). Here we'll be able to visit and snorkel a spring called Hot Creek which has an abundant population of springfish that live at 88° F in crystal clear water. No other native fishes are known from these springs due to the warm water, although Speckled Dace likely once lived in the lower outflows.

The last series of springs occur at Lund and Preston, 35 miles north of Hot Creek. Most of these springs are smaller and usually consist of streams rather than spring pools as they have not been dammed up. The water here is much cooler too, usually between 66-72° F. As a result, these springs historically had a number of co-occurring native fishes including Preston White River Springfish (*C. b. albivallis*), Preston Speckled Dace (undescribed subspecies), and the extirpated White River Desert Sucker and White River Spinedace

(*Lepidomeda albivallis*). Oddly enough, the only introduced species is the Guppy (*Poecilia reticulata*), which is particularly abundant.

Nearly all of the springs in the region have been modified, typically for irrigation by damming up the springhead and via diversions in the lower spring channels. Other modifications have been made for bathing and the extensive introduction of non-native species (including parasites like anchor worm) has done little to help the native fishes survive. Several species exist as tiny populations. For example, it is estimated that less than 50 adult Paranagat Roundtail Chub have existed in recent times, and at one time the entire known population of White River Spinedace was also less than 50 individuals. Several springfish, sucker and spinedace populations have been eliminated, although some have been reintroduced. Introduced species have been a major problem, especially Largemouth Bass (*Micropterus salmoides*), which can quickly eliminate most native fishes from small habitats. In addition, cichlids and various livebearers depress native fish abundance. All of these factors continue make these environments quite

threatened and many of the species are listed at state or federal level. Current proposals to pipe water to Las Vegas from the aquifers that feed most of these springs further endanger their long term persistence. It is only through the vigilance of many individuals from several state and federal agencies since the 1960s that these species continue to exist.

I hope that you will be able to visit and enjoy these species up close during the NANFA 2010 convention! 

For more information about the convention, please see the ad on the following page, and/or contact Peter Unmack peter.nanfa@unmack.net


Meet the pupfishes of Ash Meadows in this fascinating DVD by Tom Webster



Crystal-clear pools shine like emeralds on a desolate desert valley floor. While pupfishes “play” in these oases, conservationists battle to save their habitat from water-thirsty developers, and biologists and aquarists team up to remove thousands of exotic fishes, crayfishes and frogs.

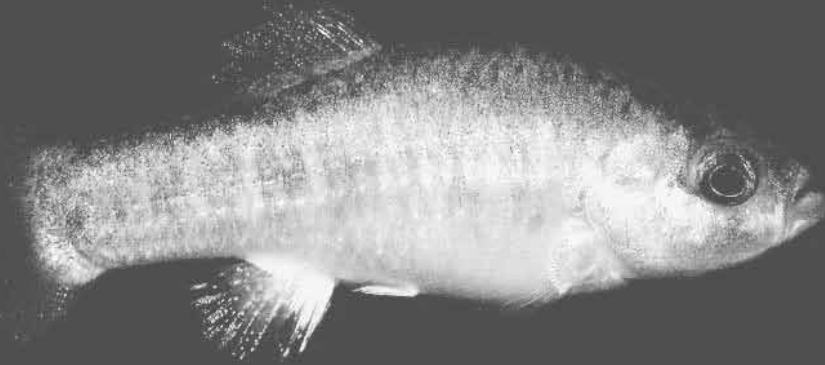
This 30-minute DVD introduces you to the three kinds of pupfishes that live in the desert springs of Ash Meadows, Nevada, and the efforts of native fish enthusiasts to save them. Also included is little-seen footage of divers entering Devils Hole to count the Devils Hole Pupfish (which holds the distinction of living in the most restricted habitat of any vertebrate in the world).

The 23,000 acres of the Ash Meadows National Wildlife Refuge will be the site of the 2010 NANFA Convention, October 14-19. If you can't make it, this DVD will show you some of what you missed. If you do make it, this DVD will be a cherished souvenir.

To order: Pricing is \$10 per disk, shipping included. Make check or money order payable to NANFA and send to: NANFA, P.O. Box 1596, Milton, WA 98354. Thanks! 

Desert Fishes Rule!

To boldly thrive where no other fish can make it.



2010 NANFA Convention Southern Nevada * October 14-19

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rare desert fishes (pupfishes, dace, springfishes) and their amazing jewel-like desert spring habitats

VISIT

the home of the Devils Hole Pupfish, the most range-restricted vertebrate species on Earth!

EXPLORE

Ash Meadows, home to more endemic species for its given area than anywhere else in the USA

HELP

the imperiled fishes of Ash Meadows by removing exotics for their habitat

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fascinating talks on desert fishes at the Death Valley National Park visitors center

LEARN

how hobbyists and management agencies can work together to further our knowledge of the captive needs of desert fishes

SNORKEL

various warm springs (86°F+) during a 2-day convention extension to several unique locations north of Las Vegas



**2010 NANFA Convention
Southern Nevada * October 14-19**

COMPLETE DETAILS AT:
www.nanfa.org/convention/2010.shtml

Photo: *Cyprinodon nevadensis armagosae*. © Tony Terceira.