

# Nevada Desert Adventure NANFA Convention 2010

Casper Cox

Acknowledgments to Fritz Rhode, Peter Unmack, and Susan Binkley

## Wednesday, October 13, 2010 ~ The Arrival

**A**rriving in Las Vegas, Ranger Bob and Betsy Culler, Scott Schlueter and I gathered and then rendezvoused with our host Peter Unmack and Ed Scott for a lunch at a backstreet eatery featuring enormous gourmet burgers.

Being plump full we loaded up for our northward drive and made several stops along the way to purchase meats, vegetables, fruits, breads, snacks, drinks, water and other provisions. Our last stop was in Pahrump, so named for “Bubbling Water from beneath the Stones”, where we topped off the gas tanks.

Arriving at dusk at the Ash Meadows Wildlife Refuge, we organized ourselves and setup camp though Peter had access to the guest workers house and Ranger Bob and Betsy had chosen to stay at Longstreets. Introductions were made with fellow campers and after a bit of socializing we were soon sleeping under the Milky Way.

Fritz Rohde and Rudy Arndt also stayed at the Longstreet Inn and Casino along with most of the attendees. The inn is located seemingly in the middle of nowhere, yet is conveniently only four miles from Ash Meadows. Behind the inn is an RV campground and a large pool filled with ducks and other waterfowl. According to Fritz, nearby was a pen containing a cow, burro, and a noisy animal that our president can't recall. The “town” of Amargosa Valley, is but a series of isolated roads with a scattering of houses, buildings and sheds.

## Thursday ~ Ash Meadows & Desert Springs

Three propane stoves were going at the improvised outdoor kitchen. Scott, Ed, fellow campers Bruce Bernard, Doug Habersaat and I were busy flipping pancakes and scrambling eggs. Peter cooked bacon and sausage while coffee brewed. A table full of breads, cereals, fruits, milk and juice were offered and the now arriving folks sat at the various picnic tables and enjoyed the early morning outdoor buffet. We are all here! The adventure begins, now!

After cleaning up and organizing the supplies we broke into groups. Peter drove, Ed sat on a cooler in the back, Scott was in the third seat, and I up front as we rode to various springs. The first was Big Spring, and we walked in about a mile through flat scrubland. It was beautiful, crystal clear and so very inviting. To have plunged in

would have been bliss. The sky was blue and the smooth surface mirrored the few clouds above. The water was deep and we could see the boil of sand dancing at the bottom. Ash Meadows Pupfish raced out of the shadows, the males reflecting metallic blue and chasing females, then dashing and hiding briefly in the lush vegetation. It was enchanting, near mesmerizing, this life giving pool set in the vast dry desert plain. This is why I came. We gathered our senses and started the hike out, with Peter pointing out a fossil outcropping of freshwater micro snails. The stones were bleached white but even whiter were the tiny shells held within the confines of the tight mineral deposits.

We drove to another location, parking next to an old structure built from railroad ties. We walked and ducked through a bit of wooded scrub to an elevated spring, which was hemmed in by dense and reedy vegetation. Volunteer personnel were critter trapping and sorting native from introduced fish along with the red pincered crayfish. In our wet hands we held our first Ash Meadows Speckled Dace, photographing it quickly before returning it to the cluttered bucket. While the others either worked or watched the trapping activity I took a slow walk through the scrub land hoping to see a snake, more lizards or desert creatures before the others called me back to the van.



Fig. 1.

Ed, Scott and Peter at Big Spring reflecting the sky above.



Fig. 2.

Pulling another red pincer agitated Mudbug from a trap.

© Scott Schlueter

Back for lunch at Ash Meadows, we had the first round of MREs, US Military “Meals Ready to Eat”. Initially folks were having difficulty with all the packets and heaters but most managed and seemed to enjoy the variety they offered.

With everyone relaxed and satisfied, we organized a small caravan to Devils Hole and arrived at the parking area below the site. Devils Hole is razor wire capped with all manner of chain link fencing, and posted with monitors, cameras, satellite links and solar panels. Devils Hole is actually part of Death Valley National Park and was established long before Ash Meadows. Located within is the Devils Hole Pupfish arguably the vertebrate with the smallest range in the world since its total range is this singular tiny pool. It is not a spring like the other water bodies on the refuge, but is groundwater exposed by a fissure in the ground. Interestingly when earthquakes occur far away the level in the pool rises and falls. Population estimates are conducted twice a year and the most recent estimate was 130 individuals. There is an algaed shelf about four feet below the surface where most of the Pupfish activity takes place and various monitoring devices are focused upon.

We returned to Ash Meadows where a number of options were offered. Many volunteers were soon wading in the stream’s silty outflow using shears to cut back invasive cattails. Others chose to visit Crystal Spring located upstream where a member of the staff placed minnow traps and let us photograph the captured pupfish. Since they are federally protected, none of us could legally touch these fish and the springs are closed to swimming.

However, having been given special permission, I and a few others were able to snorkel the origin of Crystal Spring, a 20’ deep



Fig. 3.

Nick’s California Kingsnake, proud in black and white.

© Nick Zarlinga

pool, ringed by vegetation and overlooked by a boardwalk with railings posting habitat signs. Awesome and crystal clear, appropriately named, the water possessed a beautiful prismatic shimmer reflecting the sky above, with the gently oscillating vegetation below and hundreds of Pupfish working the fine sand substrate rippled into a delicate pattern of subtle ridges. I nearly filled my camera’s first card with video and stills while watching the parading views of Pupfish, foraging Crayfish and multicolored Mollies swimming midstream. Introduced *Gambusia* patrolled the surface, always eager to harass others, nibbling at their fins and eating eggs, they being an unwelcome addition to the Pupfish’s ancient home. I decided to dive down and grasp the overhang at the springs source, my ears popped and held my breath tight as I peered into the darkened crevasse that the water flowed up from. Ed, Scott and others arrived and gently entered the



Fig. 4.

Scott looking in through the barrier fencing down to Devils Hole.

© Scott Schlueter



outflow and were soon snorkeling the reedy perimeter where both of them caught sight of a Green Sunfish, an introduced predator, a glutton of Pupfish and now marked for death.

After a brisk walk back, Konrad Schmidt and I rode into Longstreet's for a dinner of chicken enchiladas and the company of fellow NANFAns. We relaxed and chatted, catching up on our adventures, sharing stories. I was glad to see so many folks attending and some that I generally only get to see once a year. Being satisfied with the relaxing meal and fellowship we returned to the shed, where our fellow campers were drinking Nevada beer and mixing tomato Marys, chattering and watching *Yellow Sky*, a black and white movie featuring handsome Gregory Peck and beautiful Anne Baxter. The western film was shot in this desert and the surrounding region. Ed prepared and gifted us with crackers spread with cream cheese, a dollop of jalapeno jelly and all topped with smoked salmon fresh from his Alaskan travels...delicious. After watching Ed's Tennessee minnow parade and other fishy videos we called it a night and my fellow campers retired to their critter-exposed lair, while I to my sheltered sloping concrete pad. Konrad, Ed, Scott and Travis Haas made up the

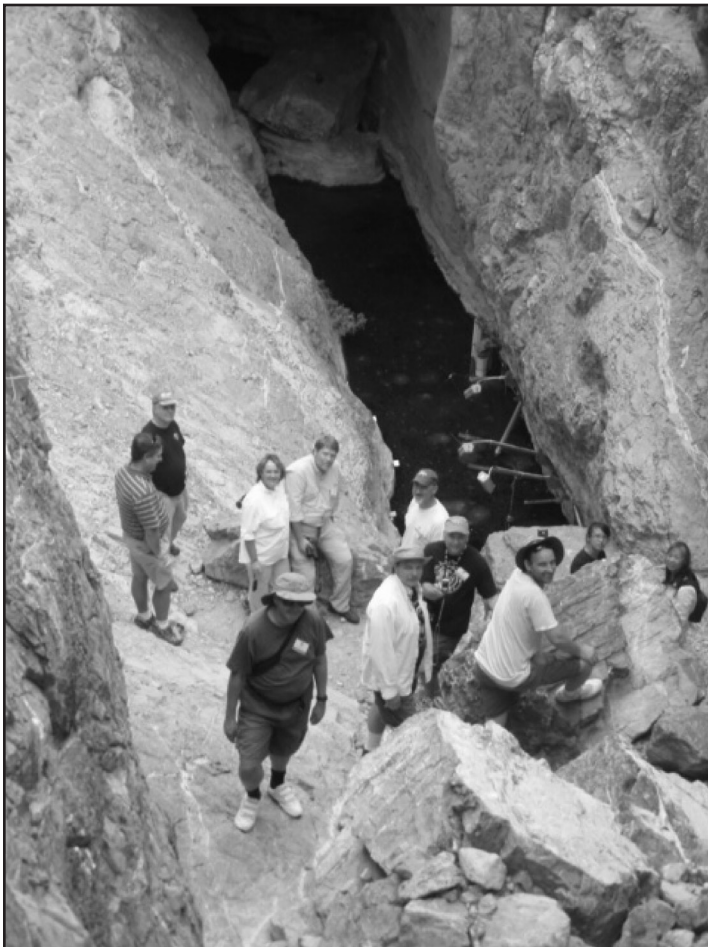
group of exposed ground sleepers along with the long time Ash Meadows volunteers, Doug, Bruce and Steve Hulse.

### Friday ~ Devils Hole, Refuge, Grill & Auction

Another good breakfast. Our cooks and egg-crackers were getting very skilled at their work. Onions and cheese were added to the scrambled eggs along with extra spices and seasonings. Afterwards I cleaned up the dishes, pots, pans and griddle gear in the dorm kitchen while the others organized for the day. The entire group of 40 or so headed back to Devils Hole where this morning we would be provided a guided access and could descend down to nearly touching the water's surface. Kevin Wilson, of the National Parks Service, provided a mini lecture to small groups of seven or ten that could traverse the stairs into the tight crevasse and answered our various questions with enthusiasm. While outside of the enclosed area, Jeff Riebe found and handed me an owl pellet he picked up along the fence. It was bleached near white by the sun and I could clearly make out a skull and several bones within it. Owls cough up these indigestible clumps after feeding and my youngest daughter had recently dissected one at school. It was the perfect souvenir to bring her from the desert, well, either that or a t-shirt. Everyone enjoyed the surroundings, some even climbing the ridge for an overview of the valley beyond. We could see the thin, reflective surface of the reservoir in the far distance, fed by the outflows of Ash Meadows' many springs. It was a beautiful place to stand and ponder.

Peter took a small group of us over to Jackrabbit Spring, another clear, lush spring in the lowlands of Ash Meadows. The perimeter was bordered on the far edge with tall reeds, and then counterclockwise to the outflow and low rise. To the right of our stance was a marshy area where we could kneel and immerse our cameras for a fish-eye view. Immediately several Pupfish and Speckled Dace raced to our cameras, inquisitive of the new objects descending into their pristine world. This spring had been pumped dry years ago by farmers' unquenchable thirst, desiccating all life in the tiny pool. Fortunately the native desert species have been recently reintroduced into this spring.

We broke into groups and I was among those who headed to Kings Pool, a very pretty, lush spring that has been enhanced with boardwalks, sculptured markers, signs and placards. The spring outflows were bridged over with patterned grates of pupfish, dace and water bugs designs. Betsy was able to get some nice video reaching from the water's edge. These new underwater cameras have really opened up bonus opportunities for fish happy folks. We hiked off the end of the boardwalk and gained advantage of several beautiful views to the expansive valley beyond. Just below us was another refuge, a manmade concrete pool sheltered by covers and a security fence to provide a back up population of the Devils Hole Pupfish. It was fed



© Casper Cox

Fig. 5.

A group of NANFAns gathered in Devils Hole while listening to Kevin Wilson.



© Lewis H. Myers

Fig. 6.

Dessicated Jackrabbit Spring in 1969.

by another spring but this population had been compromised several years earlier, as they had been genetically altered by the inadvertent introduction of an Ash Meadows Pupfish. Climbing the hard and sharp hillside was pleasant in the cool temps and we were all grateful for the fine weather.

Back to the facility for a lunch of self made sandwiches and then a presentation in the shed offered by the Ash Meadows personnel. While we ate, refuge biologist Cristi Baldino of the Fish and Wildlife Service provided us a historical overview of the refuge, the struggles to get it established, and recalled the bumper stickers that said "Kill the Pupfish". The 23,000 acre Ash Meadows refuge was established in 1984 and provides habitat for 24 plants and animals that are found nowhere else in the world, yet is only staffed with three full-time individuals. Her talk was quite an eye opener in terms of just how complicated seemingly simple restoration projects can be. For example, Crystal Reservoir is a major problem due to a bass infestation. They would really like to remove the invasives from the reservoir. However, one of the best stands of an endangered plant live below the reservoir, and likely depends upon the reservoir for survival. Many of these restoration efforts require multiple alterations and enhancements before the stream systems flow and respond in the desired manner and it often becomes a very complicated task.

After the presentation, folks fragmented into groups. I overheard that some of the staff had attempted to spear the Green Sunfish. Being certified with spear, I volunteered and was handed a Hawaiian Sling to eliminate the Pupfish eater. The long spear soon proved unwieldy as I pulled myself into every crevasse, dark shadow and dense stand of cattails available. The lucky Sunfish avoided my peering and probably headed downstream, so I soon became content to relax, observe and

click a bit more video in the calm flow. Others arrived, some gawked and teased from above while those immersed enjoyed the cool water while gently paddling with the Pupfish.

After climbing out of the water the dry desert air would flash the moisture off your body and cool it to a bone-shivering chill. Brrr! Briskly walking back, and trying to warm in the low sun, I suggested a visit and snorkel at the reservoir. Though only introduced species such as Bass and Sunfish were said to be there, I thought it might be an interesting experience viewing the vast mountainous distance from a crisp water line, chin deep. Travis offered a ride but once there the water was unappealing with its low sloping shallowness, probable dense siltation and multitude of birds floating in the distance. Some had spoken of concerns of a parasitical itchy rash that could take weeks to recover from, and in my inquires several victims spoke directly of the experience and pronounced distinct knowledge of the discomfort. After mulling over the potential unsavory consequences we headed to Longstreet Inn so Travis could check his email while I relaxed and watched the locals gathering for their Friday evening's activities.

Back at the camp the grills were blazing with Mesquite and charcoal. Chilled rib eye steaks had been pulled from the iced coolers. They were well seasoned by three grill masters wielding tongs and knives, working by fire, head and lantern light. Scott, with watch at hand, was calling out the time, seven minutes per side. Orders of rare to medium rare were requested, and baked potatoes, grilled vegetables, beans, bread, and salad were presented. It was all mighty fine in the Nevadan tradition.

The auction items and accountings were organized by our treasurer Tom Watson with assistance from Jim Forshey. Phil Nixon

...cont. on p. 20



**Nevada Desert Adventure...cont. from p. 15**

again stepped up as auctioneer and motivated attendees into opening their wallets for the offerings presented, all in the name of NANFA's good works--research and conservation grants. Even though there were only 35 or so of us, we raised over \$1200. Bob Wright had worked diligently to acquire donations and the attendees had plenty to pick from: Books, prints and photos, much ichthyological plunder, and a plethora of fish food and gear. I was the high bidder for Leo Long's lure, a hogsucker, while someone else acquired the Stoneroller. Sea monkeys and mermaids were rabidly bid over but the highest bids were for the books, signed copies of the desert wonders such as *Battle Against Extinction: Native Fish Management in the American West*, the high bidder being Scott.

**Saturday ~ Death Valley, Presentations & Dante's View**

Another fine breakfast with a no clean up til that evening as Death Valley National Park awaited. It was an awesome drive north with Peter and Scott, very scenic, unusual rock formations and strata layers exposed. Great flood washes created vast, endless plains of sediment. Gullies torn through rocky walls creating new torrential routes and ravines.

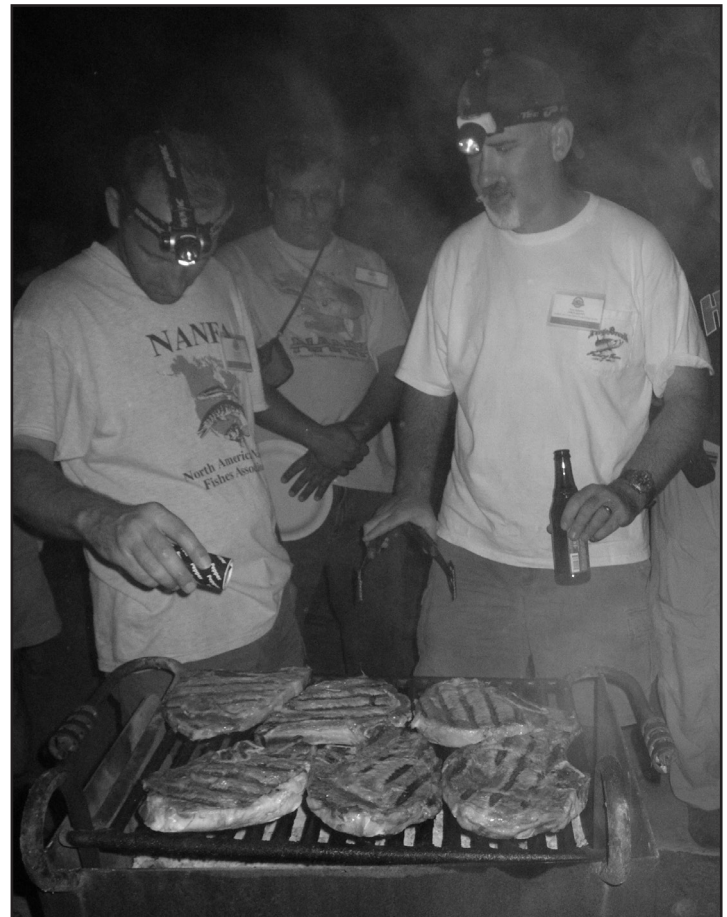
After unloading our gear, we heard introductions and announcements followed by our first round of speakers, and thus started the conference. All the speakers were entertaining and brought much enlightenment to the perils of desert fish. Jon Sjoberg of the Nevada Division of Wildlife spoke mostly about Razorback Suckers and their successful spawning in new locations and the annual monitoring of them doing so. Razorbacks are a unique shaped fish and is one of many featured on the Fishes of Nevada posters that were passed out, each species illustrated by the amazing Joe Tomelleri. Steve Parmenter of California Fish and Game spoke of the Owens Valley pupfish. Kevin Wilson, who had talked to us the day before at Devils Hole, provided some additional historical information and various accounts. He stated that motion detection cameras were installed a few years ago and they caught someone trying to lower a basket over the razor wired fence and dip up some of the Devils Hole Pupfish. Shame, shame. Diabolical, but ingenious.

A lunch break was called for and MREs were provided outside of the speaker hall in the canopied shade and patio garden. Most of the folks seemed to grasp the heater packet routine much better on this go-around but a few were still discombobulated. After my unheated but hassle free "Meatballs in Italian Tomato Sauce", someone spoke of a Roadrunner being seen on the other side of the auditorium. Quickly walking to the grassy area I was able to watch the Roadrunner and even able to crawl very close to Wile E's demise. I snapped several

pictures of him standing proud and erect with his crest held high, intense in his hunt mode of stalking, rushing low, then springing up to snatch red dragonflies from the air, a very fascinating and successful behavior.

Back at the conference center, the raffle drawing was underway, awarding two books to attending members and another one far away. Scott had done a fine job of organizing and promoting the raffle. Most of us had taken a chance to win one or all of the fine books offered, and my hope was the Mexico book which Nick Zarlinga won with a single pluck from the basket.

The talks resumed with Alex Schubert, a Fish and Wildlife Service employee from Wyoming, speaking on the Kendall Warm Springs Dace, its habitat and its history. David Ward, of Arizona Game and Fish, spoke a bit about his work at the Bubbling Springs research facility as well as some experiments and techniques he has developed relating to the various native fish breeding. We were impressed with his ingenuity, and creative and frugal use of materials such as fiberglass rocket canisters gleaned from government surplus sites. Bob Muller shared in a fine and articulate discussion on the



© Ed Scott

*Fig. 7.*

Grill Masters Peter & Scott refining their technique...more pepper, please.

merits of NANFA participation in government funded breeding programs. Much advice was offered from our membership, some of which enlightened the speakers to unbeknownst techniques.

The talks were completed and the 2010 Nevada Convention banner, featuring Dave Neely's outstanding image of the world from a Pupfish's perspective, was signed by nearly all, 42 signatures. It was gifted to Peter for his office wall back at his new home in NC. We began the reloading of jangling chairs, leftover MREs and assorted convention paraphernalia, packing everything carefully into Peter's van. Time was running tight, so we bypassed the Badwater descent and instead drove to Dante's View, with its overlook of Death Valley. We were at 5,500 ft, and you look down into the flats of Badwater, the lowest spot in North America at 282 feet below sea level. You can then look up and beyond, across the valley to Telescope Peak at 11,331 feet. From our current vantage and with the sun darkened low behind the mountainous ridge we could see tiny pin lights far below, distant cars returning to the tourist and service community in Death Valley.

We drove back to Ash Meadows in the dark, watching the far glows of lights and finally stopped at Longstreets so Peter could talk to Tom regarding a bit of NANFA business. We decided to stay for dinner and I had another round of chicken enchiladas and Black Russian iced coffee with a small group of fellow NANFans. Some of the Nevada locals were taking their turn at the microphone singing cringing karaoke, but rolly pupfish! there was our very own Wyoming Alex crooning one of those western desert tunes, and impressively I might add.

Back at camp I packed gear, the few remaining NANFA shirts, my auction booty, family gifts and assorted oddities and even washed a load of dirty desert clothes. Content and mostly organized for the Sunday departure, I walked outside and sat with our remaining camping group. A cloudy night, cooler, and then a gentle misting of rain toward the morning.

### **Sunday ~ Rogers Spring, Valley of Fire & Rain**

Fewer diners attended our last outdoor breakfast, as most were checking out of Longstreets. This was the end of the regular convention but Peter had planned an extended version for those of us who wished to see more. Our small group cleaned the facilities, shed, bathroom, and organized the supplies and gear, leaving our former residence neat and clean in appreciation.

We packed Peter's van tight leaving just enough room for Scott to sit behind the driver and myself in the passenger seat. The caravan of ten or so vehicles headed to Rogers Spring, an exotic-filled, warm spring pool, set just above Lake Mead. The water looked inviting but as we walked to the spring I read a sign that stated, "Warning: Do not allow water to enter your nose. *Naegleria fowleri*. An amoeba common to thermal pools may enter causing a rare infection and death." The

danger sign cautioned me away. Our leader showed up and said that all the thermal springs had this amoeba and responded "no concern, mates". At this point about six or eight folks promptly jumped in. While others wonder of this Snorkelmiester's true dedication, I knew better full-immersal options lay ahead, and though curly-headed Travis, the one without comb, became our first plunger, has yet to provide an accounting of any numerous skin rashes. We did catch a sighting of a floating green Triceratops, commandeered by Rich Bireley's daughter Anjuli, which was noted and accurately identified by current zoologist Nick.

We detoured into and through the fantastic Valley of Fire State Park. It was awesome, delivering incredible views, gigantic boulders, and unique rock formations, all pigmented with a bright, rich, brick red mineral. I took plenty of pictures and at every turn another perfect composition presented itself. We drove to different vantages and made short hikes into the towering structures down and along winding paths. A bit delayed at one, I struggled after the group in deep soft sand and was met with approaching winds of stinging grit and relented back. The others had already descended into the steep ravine where ancient petroglyphs adorned rocks and old movie sets faded away. A number of movies had been filmed here, including *1,000,000 Years B.C.*, *Beast Master* and *Star Trek Generations*. I read the display noting the movies and remembering young Raquel Welch wearing her fur bikini, then photo documented the list to fill my Netflix queue, agreeing the Valley of Fire was an ideal setting for many genres of film. While awaiting the others' return, I photographed the tower of red stone from several angles in the gathering winds.

Storms approached with lightning stabbing the horizon, whipping hair into my eyes and blowing sand past us. We expressed concerns from atop the high ridge, alert for our skin to tingle and swarming electrons to raise our hair, as we watched the storm. Incredibly beautiful, this place is mesmerizing and enchanting, and I would embrace a stay here. I'd love to explore for days while camping and wandering amongst the many formations, watching for dinosaurs to peer from behind dark red-bouldered walls, and mysterious lights to flash in the sky above.

Once again night had come and we exited the valley in the dark and rain. It fell steadily all the way to our next destination, Overton, a small town in eastern Nevada. There were about 25 of us at this point and we all managed to find the single open restaurant in town. I moved to Fritz and Rudy's table, and was soon caught up in a discussion of proper dietary concerns with Rudy. Good food and companionship, but tonight's "special" not quite as appealing considering the fattening consequences. When we walked outside rain was falling gently and I asked a local couple peering out from under the awning how often it occurs? They responded, "Rain? Is that what this is?"



© Scott Schlueter

*Fig. 8.*

Self portrait of Scott feeding the Springfish a crushed invasive.

The local motel was nice and my roommates and I enjoyed a comfortable night's rest. I was too tired for evening socializing and in the morning was told that the fishhead gathering in the lobby was soon dispersed because of our president's loud laughter. Being falsely accused, Fritz pointed out the true culprit, our auctioneer Phil, and I do know his boisterous laugh and I would support the motel management in their decision!

### **Monday ~ Moapa, Alamo & Crystal Springs**

Beautiful, star-filled Valley of Fire postcards and prints were available at the checkout desk. I selected a couple and then sat down for a breakfast of a single boiled egg and big pastry while Peter hovered above and rushed us along. The morning skies were clear and we were heading out to the Moapa National Wildlife Refuge through Logandale and towards Alamo. These drives, though long, were scenic and Peter continued to provide Scott and me with geography and historical lessons of what passed before us. We enjoyed Peter's narration as harsh desert scrub land stretched before us and soon distant water sources brought soft green flushes of Cottonwood, foliated scrubbery, irrigated fields of alfalfa with cattle grazing, damp, reedy flats and finally, open water reservoirs, formed by a series of levees.

Our first stop was at the Moapa River visitor center. It is a beautiful site and populated by human-planted and fire-burned black

trunks of towering palms capped with a flush of waving green fronds. At one time it was a Las Vegas style mini resort owned by Howard Hughes but had been purchased in 1989 by the Fish and Wildlife Service, the first national wildlife refuge created specifically for fish. The highlight was a stream that had been routed behind acrylic so that one could view the endemic Moapa White River Springfish and Moapa Dace from a standing position. We were able to take many pictures, some reaching over and into the warm water while others walked and enjoyed the lush vegetation surrounding us. Several climbed to a ridge overlooking the oasis below, and I continued higher and then along a descending ridge where I met up with Nick and Ed who had just observed a covey of crested Gambel's Quail.

We stopped for lunch at a garish yellow building stenciled with black "Eat Here" letters and other handmade signs. Being near Area 51 I purchased an Alien driver's license authorizing my use of a K3 29 Starship and several other interstellar vehicles we hoped to encounter.

Up the highway, just a few miles further to Ash Springs. There were at least three springheads flowing into this creek and pool system. Two were natural, while a third was piped into a brick-walled "Hot Tub". This water was nearly uncomfortable, too hot for full immersal and perhaps even dangerous long term. It had beckoned several other travelers and with a quick snorkel check confirming no fish I quickly got out wondering if fish could even survive such temps. Below the





© Scott Schlueter

Fig. 9.

Ed floating in warm bliss among the Mormon Springfish at Hot Creek.

outlet, and in the pool and stream were plenty of mollies, cichlids, and the Ash White River Springfish and many of us were taking advantage of the opportunity to swim with them.

A quick exit and up the road another five miles to another spring, home of a different subspecies, the Hiko White River Springfish and conveniently located just off the extraterrestrial highway and the nearby Alien jerky stand. Aptly named Crystal Spring (as is the one in Ash Meadows) it was lush with red ludwigia populating the immediate margins turning green as it reached the surface. A rubbled waterfall at the spring's source cascaded into the cool refreshing water, forming a wide pool from whose depths boiled dancing sand and gravel, flowing even more clear, cool water to the life filled pool. It was beautiful, full of Springfish, and other species including introduced crawfish with red pincers held wide, black and white Convict Cichlids guarding their fry, Mollies of all variation and coloration and Mosquito fish patrolling the surface. The pool was brimming with life and we estimated just in this pool alone there were probably 1,000 Springfish.

After one of the most intense snorkels of the trip we drove on to the outskirts of Alamo. Alamo is a modest sized town and most of us stayed at the local Windmill Inn. There was a nice restaurant there but Fritz complained they kept running out of his choice of menu items. Both he and Rudy had eaten lunch there and gotten the last of the

onion rings, then at dinner they ran out of calamari and baked potatoes, and the next morning the egg supply was exhausted. I had none of these so cannot be blamed. The Windmill Inn is corralled by several red-roofed, wooden cabins themed in the western style. Very nice and comfortable, but a wee bit on the expensive side for me. Down the road, Peter's \$30 deal for three, was the bargain crash pad, however ours was decorated in the finest of western lore. Scott checked us into our room, oddly named "The Saloon", while Ed and I balanced our wet snorkel gear on the round rails and considered a hike to finish the day.

Several of us caravanned back to Pahrnat and I walked the cobbled levee to the hilly, sparse scrub lands beyond with Dr. Joe Scanlan, his wife Maurite, Nick, Linda, and Jim and family along with Scott. Out sprung a black-tailed Jackrabbit seemingly as big as a small antelope, startling me wide-eyed. That was one big rabbit and the ears and hind legs were even bigger. I urged Nick to flank left, hoping to gently urge the Jackrabbit to the ridge for a fine photo opportunity, but the long eared rabbit was unnerved and though Nick sped up, the rabbit quickly out skipped him, hopping over a low ridge behind us, bouncing high and confident in his evasion. Nick pointed out that during my continual calling for him to move faster, that I did not move nary a hair. All this occurred while Peter sat in his van

reading an issue of *National Geographic* about polygamists and Patagonia, probably a little tired of all the excitement and activity of these eager silly touristy types.

After dinner, and avoiding the wild west dance party and potential shootout at “The Saloon”, I tossed a pebble onto Nick and Linda’s red roof and we gathered for a headlight stroll back at the afternoon hike location, Pahranaagat. Say it fast! Pa RAN a GET ! We entered again at the upper lake levee but saw nothing, except for a stunning bright green meteor, cruising low and slow, though perhaps it was something more, as a spent fuel cell vaporizing from an intergalactic cruiser is always a possible occurrence near Area 51.

### **Tuesday ~ Hot Creek, Spearing of the Bass & Crystal Spring Snorkel**

After a rushed morning with coffee and a free muffin in hand, we drove past Crystal Spring and the Alien Jerky stand through canyons and low, vast scrub lands. Today’s first destination was Hot Creek, home of yet another subspecies, the Mormon White River Springfish. This place is definitely off the well-beaten path and even our two guides were unsure of where the turn off exactly was.

Hot Creek is a warm spring (90 degrees), about 15’ deep, and has a reedy hot creek outflow. Several access points were available and soon Bob Meyer was treading above the deepest spring, then diving down for a better view. Here were Mormon Springfish, visible in the reeds and vegetation along the sides. I was able to video several nice colonies in the clear water and they were eager to approach and parade before my nested camera. Big Bob called out that he had seen a big green fish, nearly a foot long, and I pushed into the reeds along the deep spring perimeter hoping to glimpse it. Finding nothing I explored the boils along the bottom of the run and found several little pockets I could ease into for canopied views. Pods of Mormon Springfish would hide in the reeds then come forward when I would approach and slowly ease back. Heading further upstream I saw the green fish, a Largemouth Bass, distinctly marked in a brassy green pattern. He was lounging against an overhung ledge and I approached him slowly as he eased backwards, a bit nervous. I assured him everything was fine and would return shortly. Getting out of Hot Creek made for another cold flash freeze, but with a determined plan I briskly walked the 1/3 mile back to the parking area where most everyone were gathered and contemplating lunch.

I was trying to find a stout stick a couple feet in length that I could rig with my Swiss army knife and a multitude of rubber bands when Doug offered the weapon of choice, a spear gun, short and with a sharp point, from the trunk of his car. I did not look into Doug’s trunk but am now curious as to what else he carries on his road trips. With a quick detanglement of odd rigid line, a terse lesson, and cocked double bands, I was briskly walking back to the Bass’s lair, hoping to find it still at ease, calmed by my pleasantries. From the bank I gently

rolled into the pool and pulled up into the run and just beyond, and there he lay. Easing forward with soothing thoughts projected, I slowly aimed and squeezed the trigger, yet still locked, with the wonky-designed and ill-marked twisty safety. The bass’ nerves were unsettled with the twitching of a sharp point inches away and in my awkward contorted efforts in twisting the safety to a new position, he tailed downstream. I followed, and finally pulled the trigger at the last 7’ broadside opportunity.


With great swagger and confidence I headed back with the trophy presented high upon the spear. “One look, one shot, one kill!” The NANFans broke out in a round of applause and we set upon the bass with knives and dissected the beast upon the alter stone, exposing three partially digested Mormon Springfish in its belly. Peter was impressed as we composed various desert assassin pictures and earned a favored kiss from Maurita. A lunch of leftovers and peanut butter for me although a 10 minute immersion in a MRE heater pack, with a little salt, may have made the bass palatable.

After lunch the group broke up, some went to visit the three springs in Preston and Lund 30 miles to the north hoping to see the Preston White River Springfish. These are not thermal springs, and with temps in the high 60s and low 70s, and only shallow water, snorkeling was not an appealing option to most. Those visiting saw nothing in the first spring except lush aquatic vegetation. Though the trip was winding down, the diehards gamely visited the last spring in Lund. A disappointment, being situated in a horse lot fenced with strands of tangled barbed wire.

The rest of us headed back to Crystal Spring, for a final pristine snorkel. Beautiful boils of sand and fine gravel awaited me and I was again mesmerized by the wonderful view of abundant life. In the crystal clarity I captured the images I had sought after the day before and after several minutes, I was content to share the pool with others as they arrived. Keith and Becca Hudgins, Peter, Scott and I all took turns easing into the waterfall’s outflow where the light streamed in and illuminated the fish, plants and substrate in golden sunshine. I felt as if I was gently suspended among tiny, delicate finned, desert creatures above a golden pebbled field, no water, only air.

Fully content, but shivering, and with a yearning plea for Peter to stop at the hot sauna of Ash Spring for a re-warming, woe, he would not relent and thus we headed south with a long drive back to our next residence, Las Vegas and culture shock.

You can read a more embellished version and with plenty of color photos documenting the truth at <http://blog.prizam.biz/> and visit Fritz’s account at the NANFA website at <http://www.nanfa.org/convention.shtml>

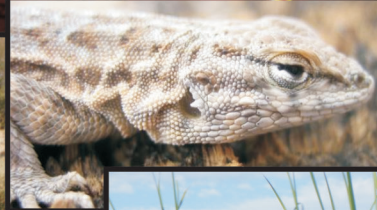
This was a great time and my appreciation is extended to all those who made it happen and enhanced it, especially to my longtime fishy friend and our host Peter Unmack. 



# NANFA 2010 Convention



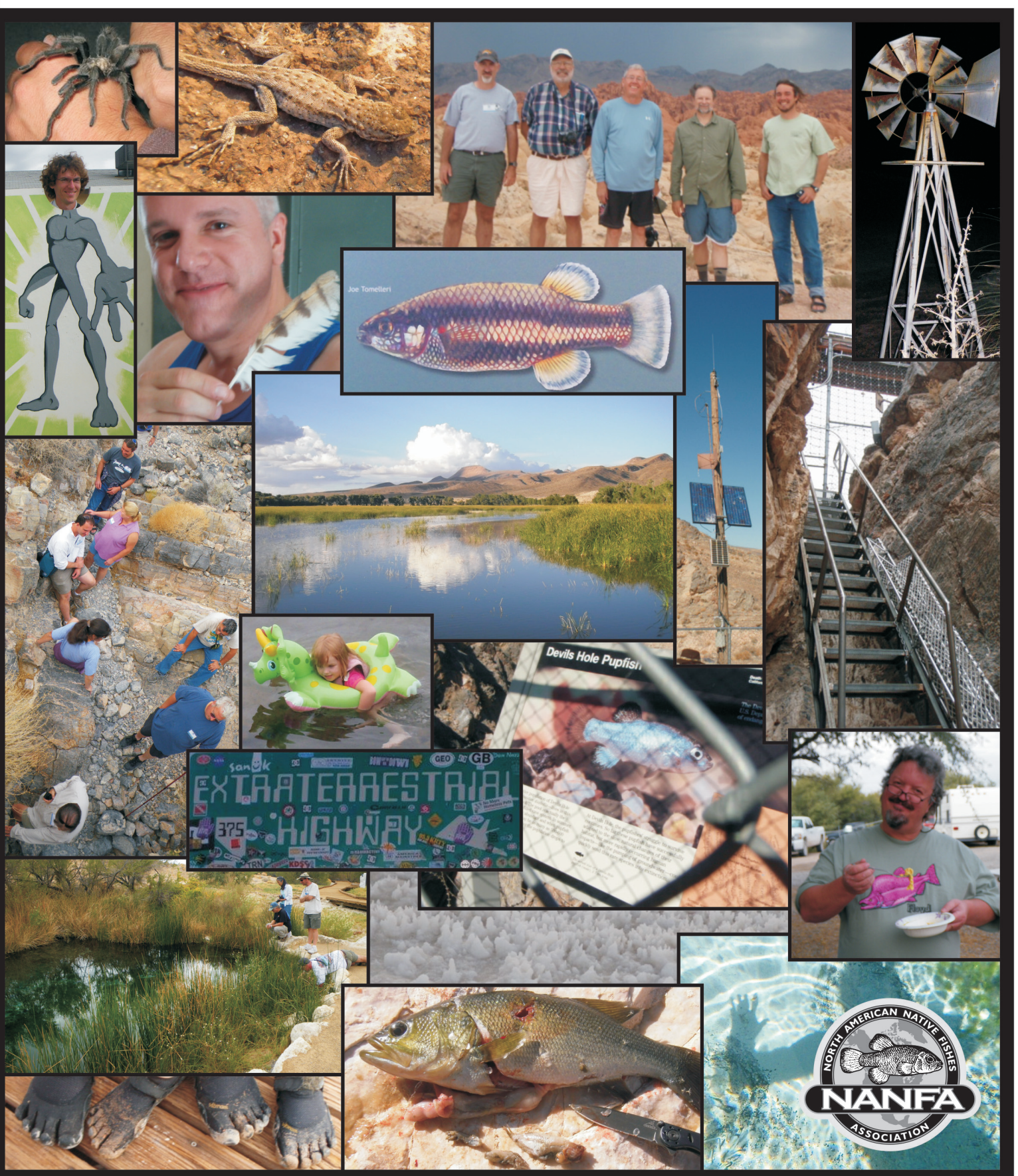
Ash Meadows & Nevadan Desert





# *Nevadan Desert Springs, to thrive where no other fish can.*

Photographs and Images by Casper Cox, Dave Neely, Scott Schlueter, Alex Schubert, Ed Scott & Nick Zarlinga.





# Summary of the 2010 NANFA Convention Presentations

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A sign on the wall of the Death Valley National Park Visitor center auditorium read “190 Feet Below Sea Level”. The stage was aptly set for the arranged speakers to present on native desert fishes from their respective regions. These authorities included – Jon Sjöberg (Nevada Division of Wildlife), Steve Parmenter (California Fish and Game), Kevin Wilson (U.S. National Parks Service), Alex Schubert (U.S. Fish and Wildlife Service), and David Ward (Arizona Game and Fish Department). With NANFA members eager to hear from the invited experts, our convention sponsor Peter Unmack gave a brief introduction and introduced the first speaker.

The first speaker was Jon Sjöberg, a Nevada Division of Wildlife biologist and the head of their southern region Fisheries and Aquatic Species Program. The title of his talk was “The Razorback Sucker – an interesting fish story.” Jon provided a brief life history overview and described the Razorback Sucker (*Xyrauchen texanus*) as a long-lived species which reaches lengths of greater than 90 cm (3 ft). The species suffered significant declines in abundance and distribution beginning in the 1930s. In addition, the development of impoundments has created habitat that favors non-native fishes. Striped Bass, which have been stocked and have established self sustaining populations, have been documented to consume large numbers of tagged Razorback Suckers. Striped Bass can grow larger than 22 kg (50 pounds) and can consume even the largest adult Razorback Suckers. Jon stated that declining population trends have been observed in most systems, using Lake Mohave (NV/AZ border) as an example. The population in Lake Mohave was estimated at 100,000+ in the mid-1950s, 45,000 in 1989, and less than 500 in 2009 (this doesn’t count stocked fish, only wild born and raised fish). However, as Jon explained, the pattern of population decline does not hold true for Lake Mead. Adult suckers were common in Lake Mead between the 1930s and 1960s. In the 1970s, the Razorback Sucker was thought to be extirpated from the lake. In the 1990s, fishermen began reporting sighting of adult suckers. Nevada Division of Wildlife research documented natural reproduction at numerous sites and more than 100 young suckers have been captured since 1997. The Division utilized ultrasonic telemetry to track tagged hatchery produced suckers as surrogates to locate natural populations. Areas of high use

were identified. Evaluation of these sites identified turbidity as the one variable that was different from the surrounding areas. The muddy waters of the Colorado River that enter Lake Mead result in increased turbidity. This turbidity creates cover for the suckers, which reduces the predation from non-native fishes. The Division will continue to monitor the success and recovery of this population. Lastly, for the benefit of those attending the extended convention trip, Jon provided an expert overview of the sites and the species we would observe.

The second speaker was Steve Parmenter with the California Department of Fish and Game (CDFG). The title of his talk was “Ever Since Species in a Bucket – evolving recovery strategies for the Owens Pupfish.” Steve provided some background on the Owens Pupfish (*Cyprinodon radiatus*), including that under good conditions the species can produce three generations per year and that non-native species remain their most significant threat, specifically largemouth bass and brown trout. He provided a brief history on the species abundance, stating that in 1916 the species was common in 112 km (70 miles) of the Owens River. The species became rare by the late 1930s and was described by R.R. Miller in 1948, at which time the species was believed to be extinct. The species was observed in 1954 and officially rediscovered in 1964. The Owens Pupfish was federally-listed as endangered in 1967 and listed as state endangered in 1971. He described Phil Pister’s (another CDFG Biologist, now retired) rediscovery of the species with Hubbs and Miller and recounted Phil’s heroic rescue of the remaining individuals from a drying pool in August 1969. Phil’s actions are the reason the species survives today and he provides insights to how this experience influenced him in the article titled “Species in a Bucket” (*Natural History Magazine*, Jan 1993, Pister). Steve is working on establishing long-term populations of Owens Pupfish and building on Phil Pister’s previous work. An overview was presented on the Department’s previous conservation efforts which had focused on methods to isolate the pupfish from non-native species and utilizing translocation into artificial refugia to conserve the species. The isolation methods proved ineffective with the current fish-barrier technology as it only takes a few bass to pass a structure and extirpate an entire population of pupfish. The isolated



© Casper Cox

Fig. 1.

David Ward, Bob Muller, Steve Parmenter, Jon Sjöberg at the round table discussion

pond refugia are artificial and populations in each have failed two to three times. The artificial refugia create environmental conditions that favor invasive, non-native vegetation which in turn increases the habitat for non-native fishes and crayfish which compete with pupfish. With few long-term successes, by 2000, only minor populations remained. Steve outlined the Department's comprehensive restoration plan for Fish Slough, which includes restoration of hydrology, dam removals, innovative fish barrier installation, and invasive species removals. A low-head, clog resistant fish barrier was designed and installed at Fish Slough to serve as a more effective barrier to prohibit non-native fish from entering the spring. In addition, as far as pupfish are concerned, not all emergent vegetation is created equal. Cattails were removed and Threesquare Bulrush was restored. Unlike cattails, the Bulrush only colonizes shallow water and does not encroach into deepwater, therefore providing the barren habitat pupfish prefer and reducing habitat for invasive, non-native fish and crayfish. This system-wide approach will result in suitable habitat and will help ensure the long-term survival of the Owens Pupfish. In addition, Steve presented a genetic study they have completed on the five extant populations of Owens Pupfish. The study found that management has modified the gene pool. The findings suggest that to increase gene flow, multiple sources of fish from the extant populations should be used to establish any new populations.

Next to the podium was Kevin Wilson from the U.S. National Park Service. Kevin presented on Devils Hole and the Devils Hole Pupfish. He provided a brief description of the Devils Hole ecosystem, stating that the average water temperature was 33.5 degrees Celsius (92 °F), dissolved oxygen of 2.5-3.0 mg/l, and the resource availability (food) was limited in the winter. The direct sunlight reaching the Hole varies from 0 to 4 hrs per day, with the maximum occurring in June. Kevin described the food resources as a mix of algae during summer months and terrestrial carbon inputs during the winter months. He concluded this portion of his talk stating that the species lives life on the edge of its physiological tolerances and has possibly the most restricted habitat of any vertebrate species. With a good understanding of the harsh habitat these fish endure, focus was turned to the fish itself.

The Devils Hole Pupfish (*Cyprinodon diabolis*) was described as an annual fish with a lifespan of 10-12 months. With the population peaking in autumn (historically 300-500 fish) to a population low in the spring (historically 200-300 fish). The species averages roughly 25 mm (0.98 inches) in size, with the maximum size reaching 40 mm (1.5 inches), and they lay one egg during each of the multiple spawning events. As of September 1, 2010, the population is estimated at 120 individuals.



The recent historical context and timeline of the protection of Devils Hole was next up. Kevin described the taxonomic description of the Devils Hole Pupfish that took place in 1930 by Joseph Wales. In 1952, by Proclamation of President Truman, Devils Hole was added to the then Death Valley National Monument by executive order. In 1969, the species was listed as one of the first endangered species under the newly passed Endangered Species Preservation Act. Threats from water level declines caused by regional groundwater pumping continued to mount. In 1969, a public symposium was held and this diverse group formed the core that would later found the Desert Fishes Council. In 1970, the Secretary of the Interior formed the Desert Pupfish Task Force which was directed to devise a plan and take immediate action to save the species. With water levels continuing to decline, actions were taken to prevent extinction. These included starting multiple off-site populations, installation of an artificial spawning shelf, and the addition of an artificial light array. In 1976, the water rights battle ensued and culminated with a U.S. Supreme Court ruling stating that the National Park Service has “water rights...sufficient to maintain the level of the pool to preserve its scientific value...”. Ash Meadows National Wildlife Refuge was established in 1984 to protect Devils Hole and other endemic aquatic species from groundwater development.

In 2004, a large rain event dislodged a number of stored fish traps and washed them into the pool. By the time this was realized, many pupfish had died in the traps. The Devils Hole Pupfish population continued to decline, in 2006 it reached a historic low of 38 adults and agencies implemented crisis management approaches to stabilize the population. This situation renewed the focus of the stewardship responsibilities of the National Park Service. This shift focused efforts on holistic and long-term ecosystem monitoring, collaborative research, and an investment in in-house capacity to improve the long-term sustainability of the program. In addition, with pupfish recruitment being limited, models were generated for both the pupfish and the ecosystem. This current stewardship strategy involves the collection of various baseline data that will be incorporated into an adaptive management plan.

Recent research conducted includes fine temperature, dissolved oxygen, and total algae measurements. Pupfish surveys are now conducted once a month (day/night surveys) with a stereo-video camera. This method provides data on pupfish recruitment and allows them to determine length of the fish with 1 mm (0.039 in) accuracy. The talk concluded with the exciting news that a new Devils Hole refugium is under construction at Ash Meadows National Wildlife Refuge.

After a lunch of military MREs, enjoyed in the shade of the Park Visitor Center, our next speaker was Alex Schubert from the U.S. Fish and Wildlife Service. Alex’s talk was titled “Kendall Warm Springs

Dace Recovery.” The talk began with some background on biology, habitat, and past events. The species (*Rhinichthys osculus thermalis*) was described as the only federally-listed endangered fish in Wyoming, which was first listed in 1970. This small species (2.2 – 5.3 cm, 0.9 – 2.1 in) is restricted to 300 meters (984 ft) of stream flowing from a springhead at 29.4 degrees Celsius (85°F) and ultimately plunging over a 4.5 m (15 ft) waterfall into the Green River. After several actions taken to protect the species, a recovery plan was approved in 1982. Genetic and morphometric studies followed to determine that in fact that the species was taxonomically distinct. In 1995, a bridge was constructed to remove a culverted-road crossing that bisected the habitat and population of dace. Population monitoring continued and a 5-Year Review was completed in 2007. Alex went on to describe the recovery criteria and the progress that is being made to meet the criteria. Next he described the threats assessment that was completed that quantified each threat to the species. He outlined the potential threats to the species habitat, over-utilization of the species, disease/predation, inadequacy of regulatory mechanisms, and other threats. Other threats included ecosystem changes from introduction of exotic species, vandalism, climate change, lack of scientific knowledge, reduced gene pool, toxins, and other natural events. Alex stated that the next steps are to form a recovery team and continue to update the species recovery plan. The development of objective, measurable criteria to determine when to down-list or delist the species is needed. The talk was concluded with the need to complete a revised recovery plan by December 2010.


Our last speaker to take the podium was David Ward, who manages the Arizona Game and Fish Department’s Bubbling Ponds Research Facility. David provided an insightful talk on the “Role of Fish Hatcheries in Native Fish Conservation.” David gave an overview of some of the rare species that he is charged with. These species have included the Bonytail Chub, Loach Minnow, Spikedace, Woundfin, Gila Topminnow, and multiple species of pupfish. He described dire examples of what is asked of hatcheries, using the Bonytail Chub as an example. The population was down to 11 individuals before the hatchery was asked to get involved. It was stressed that this was not a situation any hatchery manager prefers, being handed the remaining individuals of a species with limited information available on requirements for their captive maintenance and spawning. The message was conveyed that it is imperative that when dealing with species that are not well understood, that hatchery staff should be engaged early to prevent a crisis situation. David went on to state that the role hatcheries play in native fish conservation should be realistic, as hatcheries alone are not the answer. Habitat loss and non-native fish are the primary causes of species declines. These threats should be addressed first and then coupled with hatchery capabilities to enhance fish populations.

NANFA members could relate to the next section of the talk, the universal need to find economical, innovative techniques to maintain fish in captivity. David shared some of his secrets and stated that most native fish hatcheries have budgetary constraints. Parallels were drawn between the ingenuity a NANFA member might demonstrate in operating their private fishroom and the similar ingenuity required to operate a native fish hatchery on a limited budget. He reluctantly shared one of his secrets, a government liquidation website where he had purchased surplus rocket shipping canisters and converted them into large volume tanks to raise native fish. He encouraged NANFA members to contribute to the knowledge base by documenting details on successful spawning of fish in captivity and to share that information.

The talk was wrapped up with the merits of “exercising” hatchery fish prior to their stocking. Many of the species in the Southwest that are in peril are riverine fishes. In hatchery settings, these fish are usually reared in the typical static flow condition common to most hatcheries. David and his team have conducted research finding that exposing fish to flow, or exercise, results in higher growth rates, higher swimming performance, and when stocked the fish remain higher in tributaries. This all translates into the higher survivorship of hatchery produced fish.

After the formal talks concluded, a round table discussion was next on the agenda. The discussion focused on the role aquarists can play in aquatic conservation. Specifically this related to obtaining information on breeding fish in captivity so that if captive reproduction is required as part of a species management, then this information will already be available (many western native fishes have never, or only

rarely been kept in captivity). The discussion panel was comprised of Jon Sjoborg (Nevada Division of Wildlife), Steve Parmenter (California Fish and Game), David Ward (Arizona Game and Fish Department), and NANFA's own Bob Mueller, reflecting the perspective of a advanced aquarist. Each panel member provided some opening remarks and there was great participation from the NANFA audience. We heard the group discuss constraints and opportunities with an effort to focus on common goals. The agencies folks stated some of their concerns relative to regulation and resource constraints, and presented their ideas of where interested aquarists might assist. Bob Mueller did a great job of presenting the aquarist position, highlighting the husbandry knowledge and expertise aquarists can offer coupled with the enthusiasm and eagerness to assist with native fish conservation efforts. The discussion was a great first step and may provide the foundation needed to forge relationships between agencies and aquarists to collectively focus on aquatic species conservation.

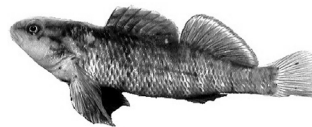
The end of the round table discussion concluded the formal presentations at the 2010 NANFA Convention. With sunlight waning, some of the group lingered to interact with the speakers and learn more about desert fishes, while others quickly departed to explore Death Valley National Park with the precious daylight remaining. Overall, the 2010 NANFA Convention presentations were very informative and provided the attendees with a superb overview of desert fish conservation. A great deal of gratitude is owed to our host, Peter Unmack, for arranging this opportunity for the NANFA organization and its members. Thank you, Peter! 



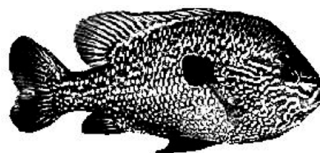
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