

Wildfires Increase Risks to Threatened and Endangered Fish Populations

Submitted by Nicole Haskett, in collaboration with R2 Fisheries



Mules assist fire crews rescue threatened and endangered fish. Photo credit: USFWS

Two lightning-caused wildfires increased the risks to endangered and threatened fish populations in southwestern New Mexico. The Baldy Wildfire, ignited on May 9, within the Gila Wilderness Area and the Whitewater Wildfire, which began to burn on May 16, merged into one on May 24, burning nearly 300,000 acres in less than a month.

Strong winds occurred at critical points in the wildfire's lifespan, pushing the fire through stands of mixed conifer, ponderosa pine, and pinon/juniper together with heavy concentrations of down and dead fuels. In early June, at about midpoint in the fire's life, there was an opportunity for biologists from the New Mexico Fish and Wildlife Service's Conservation Office (FWS) to conduct an aerial survey of the threats posed by the wildfire to native and highly threatened fish species caught within its perimeter.

Unique lineages of the threatened Gila trout were surrounded by the active fire. Populations of the endangered spikedace and loach minnow were immediately downstream and vulnerable to ash flows that were certain to come as the summer monsoonal storms began. Gila and headwater chubs occupied streams that were also directly threatened by ash flow. The risk assessment conducted by the FWS set in motion a multi-agency rescue effort that would bring high priority at-risk populations into captivity and move wild specimens from streams in totally destroyed watersheds to streams that escaped the wildfire.

The Whitewater Baldy Wildfire Complex was fought by 35 engines, 27 water tenders, four bulldozers, 10 helicopters, and 900 people. The on-the-ground rescue of the imperiled fish was accomplished by three distribution trucks (one of truck died on the mountain), one helicopter, one chain saw, 12 very dedicated people from the Forest Service (FS), FWS, and the state game and fish agencies from both Arizona and New Mexico, and 12 mules.

Starting on Thursday, June 14, 2012, a team of FWS and Gila National Forest FS biologists entered the burn zone, packing equipment and supplies on horses and mules. The crews successfully caught 261 trout in Langstroth Creek on Friday and 81 trout in Whiskey Creek on Saturday. After capture from each stream, the fish were taken by helicopter to safety. The helicopter was waiting outside the wilderness boundaries until contacted. It arrived carrying a specially constructed tank, complete with oxygen bottles. The tank was lowered to the ground at the end of a 150-foot cable, where the fish were loaded and then, suspended from the cable, carried out of the wilderness to waiting trucks.

At the same time, biologists from FWS, the New Mexico Department of Game and Fish, and the FS were working to reach populations of spikedace, loach minnow, and Gila chub before New Mexico's summer monsoons hit. There was concern that these intense rains in areas denuded by fire would wash ash and debris into the last remaining habitats of these species.

From the Forks area of the Gila River where the West Fork, which was extensively burned, meets the Middle and East Forks, biologists were able to rescue spikedace and loach minnow. They got to the San Francisco River in time to capture loach minnow, and then reached Turkey Creek to retrieve Gila chub.

Two major facilities, the Mora National Fish Hatchery and the Dexter Center, both of which are managed solely for the recovery of aquatic species, scrambled to get transport vehicles on the road to receive any fish that were captured, and started up emergency refugium systems that could keep the wild fish safe, yet isolated from the populations already cared for at the hatcheries.

After the fish were airlifted out of the wilderness or captured in lower elevation habitats, they were sent to the Mora National Fish Hatchery, the New Mexico Fish and Wildlife Conservation Office (those two facilities taking Gila trout), and Dexter National Fish Hatchery (the refugium site for spikedace, loach minnow, Gila chub). The facilities for the Gila trout have been specifically designed to mimic the natural habitat of the species as closely as possible. Water flows through tanks that have gravel and cobble substrate, woody cover, natural lighting and no disturbance. The behavior and condition of the trout are monitored via submersed cameras.

The spikedace, loach minnow, and Gila chub taken to Dexter were placed in a facility that comes complete with not only a fully functional fish culture branch, but also the Molecular Ecology Laboratory and Fish Health Center that have been mobilized to support the fish at Dexter, in addition to trout at Mora and New Mexico Fish and Wildlife Service's Conservation Office.

Some Gila trout were moved to intact habitats outside the reach of the wildfire. Spruce Creek Gila trout were transferred to Ash Creek on the Coronado National Forest in southeastern Arizona. These latter fish made the last leg of their journey to safety in five-gallon pails attached to the backpacks of volunteers from the Arizona Fish and Wildlife Conservation Office, the Coronado National Forest and the Youth Conservation Corps enrollees on the Coronado. Meanwhile back in the West Fork Gila River drainage, July efforts resulted in the collection of an additional 67 Gila trout and those fish were transplanted to McKenna Creek. Langstroth Canyon had already experienced the effects of post-wildfire flooding with severe scouring and fine sediment deposition since initial efforts to remove Gila trout in June and far fewer Gila trout remained.

The Whitewater-Baldy Wildfire affected eight out of the 14 populations of Gila trout, two core populations of spike dace and loach minnow, and the two largest populations of Gila and headwater

chubs. Two lineages of Gila trout brought into Mora NFH and NMFWCO refugia facilities had not been in active culture before. After the weeks of work, multi agency teams from the Fish and Wildlife Service, Forest Service, New Mexico Department of Game and Fish, and Arizona Game and Fish Department brought 438 Gila trout to safety, moved 277 out of the path of the fire to intact habitats, rescued 167 loach minnow, 267 spokedace, and 323 chubs. These numbers may appear low when considered within the context of the magnitude of effort that went into their rescue, but they are indicative of just how few there are in the wild and how imperiled these species are.

This was a monumental effort, but thanks to the quick and cooperative efforts of dedicated individuals from the FWS, FS (including a group of 10 Youth Conservation Corps volunteers from the Coronado National Forest), and the Arizona and New Mexico Game and Fish Departments, and many more, fish that would have been lost in this fire were safely removed from imminent danger. All of these individuals excelled in their ability to handle unanticipated situations with competence and skill, while working long hours and, at times, in precarious situations to bring about rescues that were as valuable as they were strenuous.