



New Mexico Fish and Wildlife Conservation Office Gila River Basin Native Fish Conservation Program Accomplishments FY2017



West Fork Gila River Non-native Removal
Photo Credit: Angela James NMFWCO

Gila River Basin Native Fish Conservation Program (GRBNFCP) Accomplishments FY2017

The Bureau of Reclamation (BOR) provides Central Arizona Project (CAP) funding to collaborative projects for conservation of endangered Spikedace (*Meda fulgida*), Loach Minnow (*Tiaroga cobitis*) (Figure 1), Gila Topminnow (*Poeciliopsis occidentalis occidentalis*), Gila Chub (*Gila intermedia*), Desert Pupfish (*Cyprindon macularius*), and a species of concern, the Roundtail Chub (*Gila robusta*) in the Gila River Basin. New Mexico Fish and Wildlife Conservation Office (NMFWCO) collaborates with New Mexico Department of Game and Fish (NMDGF) and the U.S. Forest Service (USFS) on three GRBNFCP projects.

FY2017 activities included Spikedace and Loach Minnow augmentation, Middle Fork Gila River surveys to determine extent of listed species in remote sites, and non-native removal efforts in the West Fork Gila River. FY2017 activities were continuations of collaborative projects between NMFWCO, NMDGF, and USFS established by the GRBNFCP technical committee.

West Fork Gila Non-native Removal at Heart Bar Wildlife Area

A 2.5 km reach of the West Fork Gila River at Heart Bar (Figure 2) supports a largely intact native fish assemblage. Roundtail Chub, Loach Minnow, and one of two stable New Mexico Spikedace populations persist at this location. Competition and predation by non-native fish pose the biggest threat to the native fish community. Crews use backpack electrofishers and seines to remove non-native fish from the reach.

Efforts in 2017 confirmed that there have been reductions in non-native fish populations since the inception of the project. This year was the 11th year of non-native removal in this reach and we noted drastic reductions of Brown Trout (*Salmo trutta*) and Smallmouth Bass (*Micropterus dolomieu*). Reductions are likely linked to a combination of our removal efforts and large disturbances. In addition, Spikedace and Loach Minnow were found in densities higher than in previous years within this reach.



**Figure 1: Loach Minnow (Left) and Spikedace (Right) collected during Heart Bar non-native removal.
Photo Credit: Angela James, NMFWCO**

Heart Bar Non-native Removal



Figure 2: Heart Bar non-native removal map

Middle Fork Gila River Surveys

NMFWCO, in collaboration with NMDGF and USFS, initiated a survey of the Middle Fork Gila River drainage (Figure 3). Middle Fork Gila River surveys had not been performed since 2008. The need for a thorough inventory comes after the 2012 Whitewater-Baldy fire, which had significant impacts on fish communities within the drainage. Data collected during the survey will help determine post-fire fish assemblages and species distribution throughout the Middle Fork Gila River. We describe below the distribution of Spikedace, Roundtail Chub and Loach Minnow throughout the Middle Fork Gila River.

We surveyed nine sites in 2017. The goal is to sample at least 14 sites for the entire inventory. The remainder of the Middle Fork survey will be completed in 2018. Moving from downstream to upstream, Spikedace were detected in the first three sites, and Loach Minnow were detected in the first four sites. Roundtail Chub were detected at the most upstream site of these three species (Figure 4). Additionally, Roundtail Chub were detected in Gilita Creek above the Snow Creek confluence during August surveys of Willow Creek and other Middle Fork Gila River tributaries. The Middle Fork Gila River forms after the confluence of Snow Creek and Gilita Creek, which is further upstream than the most upstream extent of Roundtail Chub detection of this year's survey. The expectation is to detect Roundtail Chub at least this high up during next year's continuation of the Middle Fork surveys.



Figure 3: Middle Fork Gila River survey

Furthest Detection During 2017 Middle Fork Gila Surveys

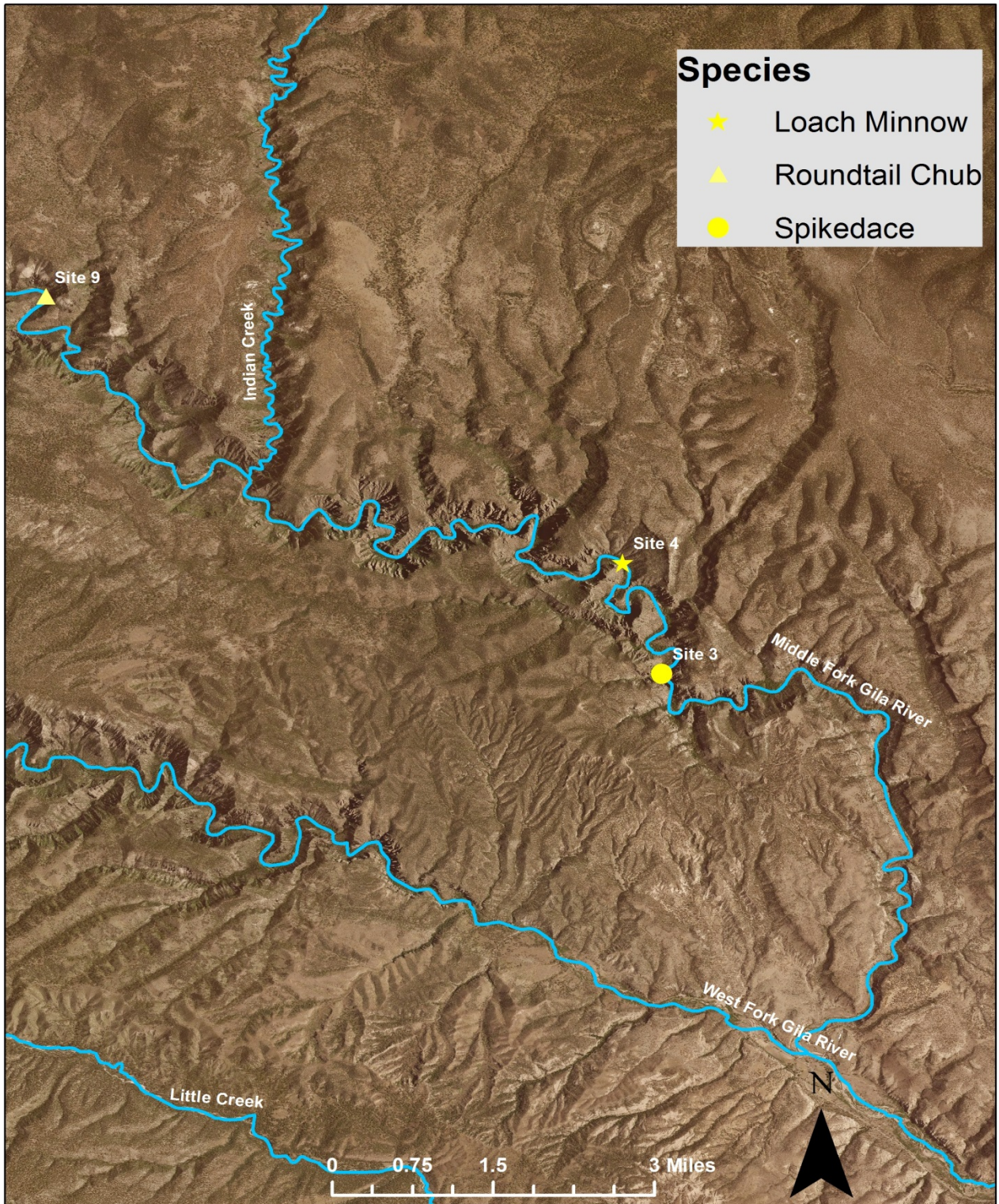


Figure 4: Furthest upstream extent of each species captured during Middle Fork Gila Surveys in 2017.

2017 Spikedace and Loach Minnow Augmentation

On November 29th and 30th, NMFWCO personnel, along with representatives from NMDGF and the Arizona Game and Fish Department (AGFD), stocked Loach Minnow and Spikedace in several locations within the San Francisco and Gila River basins. The Loach Minnow and Spikedace were provided by AGFD's Aquatic Research and Conservation Center (ARCC). On November 29th we stocked approximately 243 Loach Minnow into Saliz Canyon and approximately 1,000 Spikedace into the San Francisco River. This year was the second year of Loach Minnow augmentation in Saliz Canyon and the initial year of Spikedace augmentation in the San Francisco River. We plan to augment Saliz Canyon with Loach Minnow for an additional three years. On November 30th, NMFWCO, NMDGF, and AGFD personnel stocked approximately 100 Loach Minnow from ARCC into Little Creek. The crew also translocated 103 Loach Minnow from the West Fork Gila River to Little Creek. This was the final year of Loach Minnow stockings in Little Creek, monitoring will continue in future years to determine if repatriation efforts were successful. 117 Loach Minnow were collected from the West Fork Gila River for broodstock supplementation at ARCC.



Figure 5: Saliz Canyon Loach Minnow stocking
Photo Credit: Andy Dean NMFWCO