CONSERVATION AND MANAGEMENT OF GILA TROUT

FW-17-R-36
ANNUAL REPORT

1 JULY 2008 – 30 JUNE 2009

Photo by G. McReynolds

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CONSERVATION SERVICES DIVISION
NEW MEXICO DEPARTMENT OF GAME AND FISH

SANTA FE, NEW MEXICO
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ANNUAL REPORT

STATE: **New Mexico** GRANT NUMBER: **FW-17-R-36**

GRANT TITLE: **Vertebrate Wildlife Studies**

PROJECT: **Conservation and Management of Gila Trout**

PROJECT PERIOD: **1 July 2008** TO: **30 June 2009**

PROJECT STATEMENT

To develop and implement conservation and management strategies to restore Gila trout as a sportfish and unique faunal resource in its native range in New Mexico.

Objectives/Procedures

A. Sample extant populations of Gila trout to assess status and quantify population dynamics.

Iron Creek

Iron Creek was sampled in August 2008 to obtain fin clips from Gila trout for genetic monitoring and to assess status of its population. Habitat within the reach (ca. 150 m) sampled was largely riffle and run; pools were small (<10 m^2) and shallow (<0.5 m). Nonetheless, trout were comparatively common (3.44 fish/minute electrofishing time). Individuals ranged in total length from 36 to 200 mm. Based upon length-frequency of collected fish, reproduction was successful in 2008 and individuals were regularly recruited to the population (Figure 1). Length and mass of collected specimens (≥ 80 mm TL) was strongly correlated (r^2 = 0.857; Figure 2).

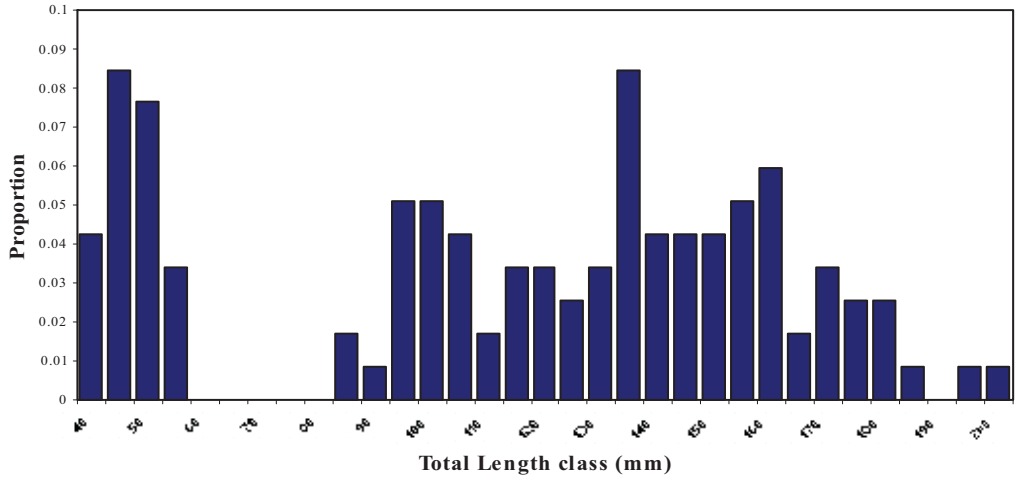

Figure 1. Length-frequency of Gila trout (n = 118) in Iron Creek, Catron County, New Mexico, 20 August 2008.

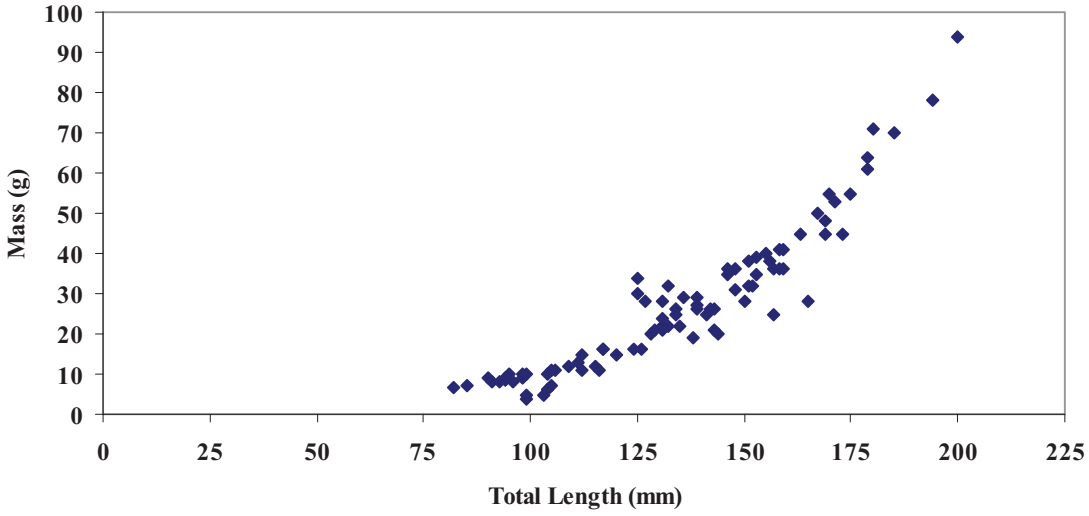

Figure 2. Total length – mass relationship of Gila trout (n = 89) in Iron Creek, Catron County, New Mexico, 20 August 2008.

South Diamond Creek

As a consequence of wildfire threat, Gila trout were evacuated from South Diamond Creek by U.S. Forest Service (Gila National Forest) personnel in June 2009. Following transport to Mora National Fish Hatchery and Technology Center, total lengths were determined for the 265 evacuated fishes. A large portion of fish collected were members of 2008 cohort (Figure 3).

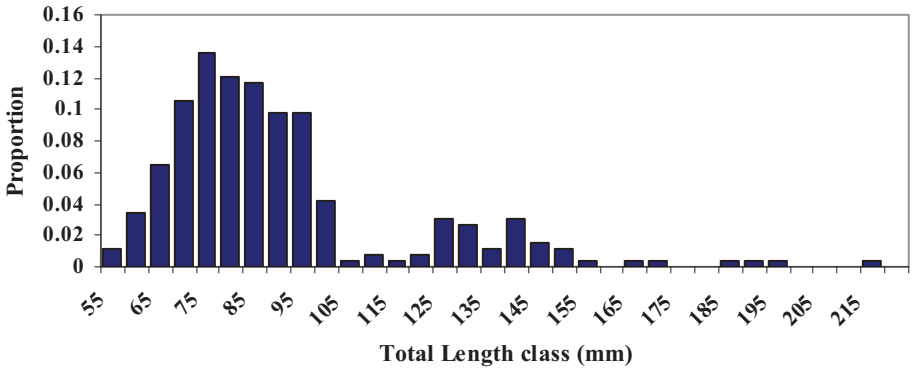

Figure 3. Length-frequency of Gila trout (n = 265) evacuated from South Diamond Creek, Sierra County, New Mexico, 10 June 2009.

B. Sample streams in the native range of Gila trout to evaluate their potential for renovation for the species.

Cienega creek, a tributary to the San Francisco River near Reserve, New Mexico was surveyed on February 27, 2009 (Figure 4). No fish was found. A thermograph was launched in April 2009 to record summer temperatures and thus assess whether the stream might provide habitat for Gila trout.

Figure 4. Cienega Creek, Catron County, New Mexico, February 2009.

C. Renovate selected streams for establishment of Gila trout and translocate Gila trout to stream after all nonnative trout have been removed.

No renovation work was accomplished in 2008. On 11 August 2008, the New Mexico Water Quality Control Commission (NM WQCC) approved the petition to use CFT Legumine® (rotenone) to renovate the West Fork Gila above the waterfalls. Revisions to the Biological Opinion and Environmental Assesment were finalized by US Fish and Wildlife and US Forest Service personnel in May 2009.

Multi-agency crews (USFWS, USFS, and NMDGF) conducted pre-treatment surveys on the West Fork Gila River during 18-22 May 2009. Rainbow trout were found near the confluence of Trail and Langstroth canyons. No fish was found in Langstroth Canyon above its confluence with Trail Canyon to the crossing of Forest Trail 302. Brown trout were found throughout the West Fork Gila from the waterfalls near White Creek Cabin upstream to Whiskey Creek. Speckled dace were present in lower White Creek and West Fork Gila River from Turkeyfeather Canyon downstream to waterfalls.

The West Fork Gila was treated with CFT Legumine® during 15-24 June 2009. Approximately 150 speckled dace were salvaged from the West Fork Gila River and 175 from White Creek and returned to the stream post-treatment. Over 1500 brown trout (mostly age 1), 10 rainbow trout as well as nearly 950 speckled dace were counted following rotenone application. Several size classes of brown trout were found in Cub Creek, but only two age classes (1 and 3+) of brown trout were in the West Fork. One rainbow trout was found in the West Fork Gila near White Creek confluence. Both rainbow and brown trout were found in White and Langstroth creeks (Figure 2).

Post treatment surveys of upper West Fork Gila River drainage are scheduled for July and August 2009. A report detailing the June 2009 application of CFT Legumine® to upper West Fork Gila River, as required by Order issued by NM WQCC allowing rotenone use, will be submitted to NM WQCC in December 2009.

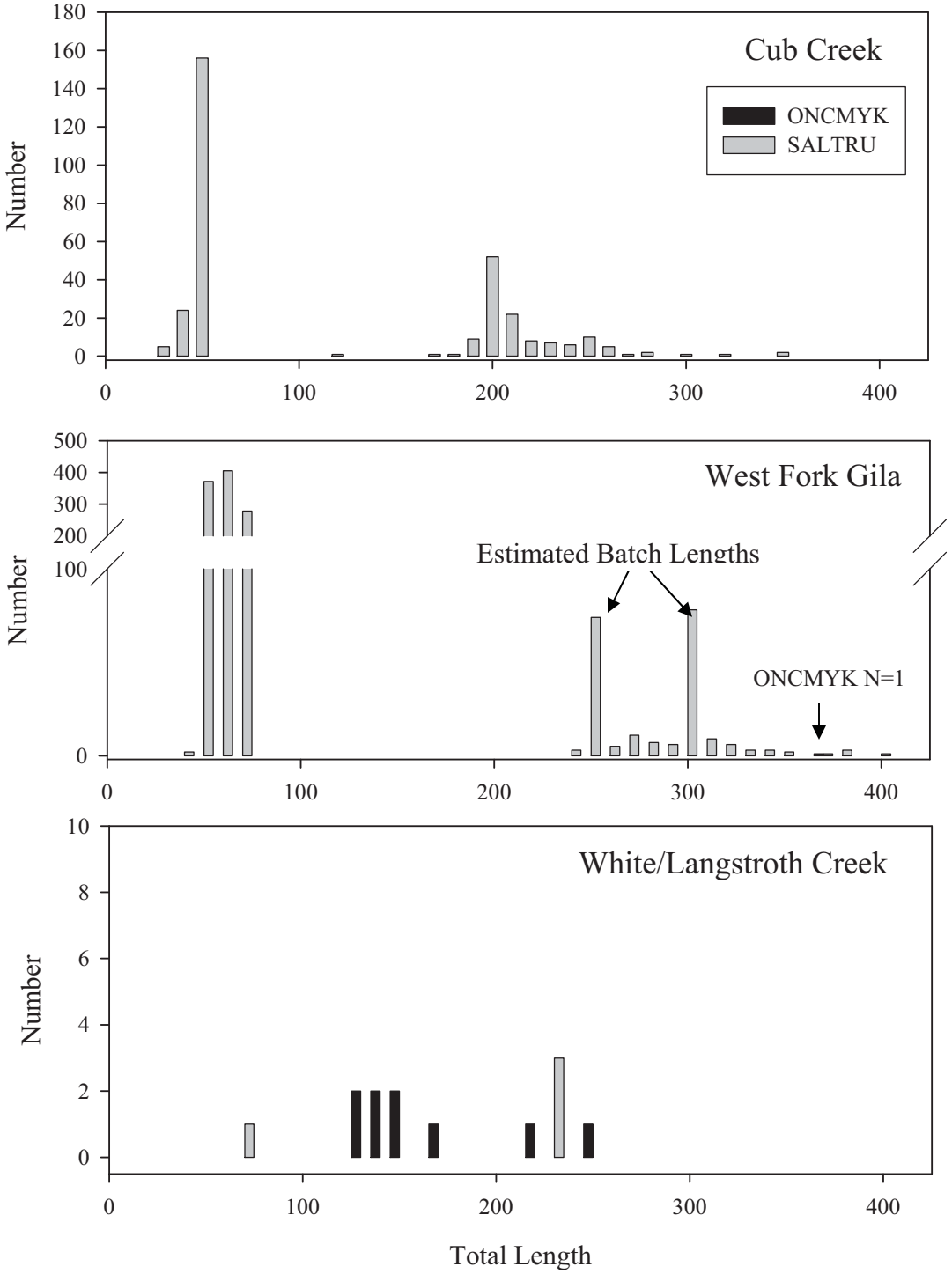

Figure 2. Length frequency histograms for trout removed from the upper West Fork Gila in May and June, 2009.

D. Obtain tissues from putative and known populations of Gila trout to monitor genetic purity.

Tissue samples (fin clips) were collected from lower portions Iron Creek in August 2009 and accessioned to the University of New Mexico Museum of Southwestern Biology.

E. Select suitable streams for sport fishing and implement routine monitoring of streams to evaluate impacts of sport fishing on populations of Gila trout.

Three recovery streams were open for sport fishing in 2008 and 2009; Black Canyon, Mogollon Creek, and Iron Creek. Anglers were required to register to fish on these creeks. Hatchery-produced Gila trout that were surplus to recovery needs were stocked in the Gila Forks area, Willow and Gilita Creeks, and Sapillo Creek for angling. Registration was not required for individuals fishing non-recovery creeks.

A total of 219 anglers registered to fish for Gila trout during the 2008 license year, 176 on line and 43 at vendors or New Mexico Department of Game and Fish offices. Surveys were sent to online registrants in January. Surveys were returned from 44 individuals (20%). Approximately 30% (14) of the anglers reported that they fished for Gila trout, seven in recovery streams (Table 1).

Table 1. Summary of information provided by anglers responding to the 2008 Gila trout angling-season survey.

	Iron Creek	Black Canyon	Mogollon Canyon
Anglers	3	5	2
Days Fished	5	7	1.5
Number Caught	65	82	15
Sizes			
0"-4"	6	3	
4"-8"	25	33	
8"-12"	5	21	15
>12"		8	
Fish Kept	3		

A contract with Dennis Miller (Western New Mexico University) to annually sample Willow and Gilita creeks in vicinity of Willow Creek Campground was formalized, but no sampling occurred during reporting period. Currently, hatchery-produced Gila trout that are surplus to recovery needs are stocked in Willow and Gilita creeks.

F. Provide assistance to Arizona Game and Fish Department, U.S. Forest Service, and U.S. Fish and Wildlife Service in establishment of Gila trout populations in the historical range of the species in Arizona.

Telephone conversations, email messages, and conversations at professional society meetings with Arizona Game and Fish Department (AZGFD), U.S. Fish and Wildlife Service, and U.S. Forest Service (Apache-Sitgreaves and Tonto National Forests) personnel were used to convey and exchange information on Gila trout recovery efforts in Arizona. Recent discussions have focused on stocking Gila trout into Grapevine and Dude Creeks in Arizona.

G. Disseminate information on Gila trout conservation to interested members of public and scientific community.

The annual meeting of the Gila Trout and Chihuahua Chub Recovery Team (Gila Trout Section) was held in Albuquerque on 18 December 2008. In addition to Team members and personnel of NMGF, AZGF, UNM, NMSU, USFWS, and USFS, Trout Unlimited, members of the public attended and participated in discussions related to Gila trout recovery and conservation.

H. Prepare Completion Report for work accomplished under this project. Report will summarize data collected (inventory, monitoring, and restoration) during 2008-20012. Information gathered under this study will be available and used for intra- and inter-agency management decision-making processes and resource issue conflict resolution.

This document is the annual Performance Report for activities accomplished under Job 4 (Conservation and Management of Gila trout) of FW-17-RD-36 between 1 July 2008 and 30 June 2009.

Acknowledgements

The work reported herein was accomplished with the cooperation and participation of J.E. Brooks, S. Davenport, D. J. Meyers, J. Remshardt, W. Furr, J.A. Fowler-Propst, (USFWS); J.C. Zapata, A. Unthank, T. Brummet, J.A. Monzingo, A.J. Telles, L. Hellicson, E. Kern, T. Ybarra, R. Peralta, C. Rooks (USFS); J. Carter (AZGF); T. Turner (UNM); M. Sloane, K. Patten, E. Frey, M. Medina, J. Vega, (NMDGF); and N.W. Smith, J. Mullinex, J. Morales.

Conservation and Management of Gila Trout, FW-17-RD-36
Performance Report (1 July 2008-30 June 2009)

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