Framework for Management of Gila Trout Angling

New Mexico Department of Game and Fish

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Introduction

Gila Trout (*Oncorhynchus gilae*) is native to the Gila, San Francisco, and Verde River Basins in New Mexico and Arizona; however it is now restricted to only small first- to third-order streams in the Gila and San Francisco drainages. Primary threats to Gila Trout include introduction of nonnative salmonids resulting in competition, predation, and hybridization; habitat degradation as a result of altered land use practices; and stochastic events such as wildfire and post-fire flooding. As a result of population declines and continued threats, Gila Trout were listed as endangered under the Endangered Species Act (ESA) in 1973 and a recovery program was established. As a result of subsequent recovery actions in Arizona and New Mexico, Gila Trout were downlisted to threatened in 2006. Angling for Gila Trout and stocking of Gila Trout in non-recovery waters became allowable at the time of downlisting under the 4(d) special rule of the Endangered Species Act. In addition to allowing for recreational angling, the special rule contributes to the conservation of the species by (1) providing eligibility for Federal sport fishing funds, (2) increasing the number of wild populations, (3) enhancing the ability to monitor populations, and (4) creating goodwill and support in the local community. The description of the rule allows the states to adopt regulations for public angling of a unique native trout and increases the public support for and awareness of Gila Trout conservation. The captive breeding program at the U.S. Fish and Wildlife Service's (USFWS) Mora National Fish Hatchery (Mora NFH) produces Gila Trout to support recovery actions with supply typically exceeding recovery needs. These fish can then be stocked in non-recovery waters for the purpose of recreational angling.

Purpose and Justification

The description of the 4(d) special rule for Gila Trout identified overcrowding of fish in recovery streams and the potential need to euthanize genetically pure fish due to limited hatchery space (71 Fed. Reg. 40670) as the basis for stocking additional water and the ability to create goodwill and support for Gila Trout conservation in the local communities as the basis for allowing angling in recovery populations. This Framework was developed by the New Mexico Department of Game and Fish (Department) in partnership with the USFWS' New Mexico Fish and Wildlife Conservation Office (NMFWCO) and Mora NFH to provide additional guidance for Gila Trout management and stocking in waters open to angling. Additionally, the plan is

required by the regional USFWS policy. Long-term planning, implementation, and monitoring of recreational Gila Trout fisheries is part of an inter-agency cooperative effort to manage fisheries resources based on sound management principles. Management strategies outlined in this document are supported by the recovery goals set forth in the USFWS Gila Trout Recovery Plan (2003) and the 4(d) special rule for Gila Trout. They are also congruent with USFWS and state stocking policies.

This Framework shall serve as a guide over the next 10 years for the management and stocking of Gila Trout in waters open to angling. During the above mentioned timeframe, annual review and modifications to the Framework are expected to occur. Major reviews may occur including addition or deletion of waters.

Historic and Current Distribution and Status

Historic Distribution

Gila Trout historically occurred in mountain stream habitat in Sierra, Grant, and Catron counties in New Mexico and Greenlee, Apache, Graham, Gila, and Yavapai counties in Arizona. Early reports indicate that Gila Trout were found throughout tributary streams of the upper Gila River drainage upstream of the confluence of Mogollon Creek and the Gila River. Lack of collections in the San Francisco River drainage prior to introduction of nonnative trout and absence of preserved specimens make the identification of historical distribution in this drainage difficult (USFWS 2003). However, it was discovered that Spruce Creek, a tributary to the San Francisco River drainage, held a remnant population of Gila Trout. Native trout were collected from the Blue River in 1904, although the specimen was subsequently lost. At the time of its ESA listing, remnant populations persisted in Main Diamond, South Diamond, Whiskey, and Spruce Creeks.

Current Distribution

Gila Trout is now restricted to small first- to third-order streams in the Gila-San Francisco drainage of southwest New Mexico and southeast Arizona. Pure populations are currently found in ten streams in New Mexico and two streams in Arizona (Table 1).

Waters Open to Gila Trout Angling

Historically, Gila Trout management in New Mexico has been focused on establishing new, replicate populations. Before Gila Trout were downlisted to threatened in 2006, angling was not allowed. In 2007, limited waters were open to Gila Trout angling to provide a unique angling opportunity with the benefit of gaining public support for and awareness of Gila Trout

conservation. Below is a brief description of each water and past management activities. Individual bag limits are also described below. In general, all recovery waters will be managed as Special Trout Waters[1].

Table 1. Current distribution of pure Gila Trout populations.

State	County	Population	Drainage	km
NM	Sierra	Main Diamond	East Fork Gila	6.1
NM	Grant	Sheep Corral Canyon	Gila River	1.3
NM	Grant	Black Canyon	East Fork Gila	18.2
NM	Catron	Little Creek	West Fork Gila	6.0
NM	Sierra	South Diamond	East Fork Gila	6.7
NM	Catron/Grant	Mogollon Creek	Gila River	26.3
NM	Catron	Willow Creek	Middle Fork Gila	16.9
NM	Catron	McKenna Creek	West Fork Gila	1.6
NM	Catron	Upper White Creek	West Fork Gila	8.8
NM	Catron	Big Dry Creek	San Francisco	1.9
AZ	Yavapai	Grapevine	Agua Fria	2.4
AZ	Graham	Frye	Gila	8.0

Recovery streams

Black Canyon above barrier: Black Canyon is a headwater stream of the East Fork Gila River in Grant County, New Mexico. Nonnative trout were removed as a result of post-fire ash flows in 1995 and a gabion barrier was constructed at the Black Canyon campground in 1998. In 2011, the gabion barrier was removed and a concrete barrier was constructed at the same location. The creek was opened to angling in 2007 and is designated as a Special Trout Water open to catch and release angling from July 1 to October 31. Pursuant to New Mexico State Game Commission rule, a free Gila Trout permit is required to fish Black Canyon.

Ash flows resulting from the 2013 Silver Fire eliminated all fish from Black Canyon below Aspen Canyon. Gila Trout above Aspen Canyon survived. Gila Trout were stocked in lower reaches of Black Canyon in fall of 2013, 2014, and 2015 to reestablish the population. The most recent survey (September 2015) indicated that the population is reestablishing; evidence of recruitment and multiple size classes, including young of year, were found.

[1] Special Trout Waters have reduced bag limits or catch and release restrictions to help provide high-quality fishing experiences for anglers.

Mineral Creek: Mineral Creek is a headwater stream of the San Francisco River in Catron County, New Mexico. Prior to the 2013 Whitewater-Baldy Fire, the stream contained a wild, self-sustaining population of Rainbow Trout managed under the current statewide five trout bag limit; however, post-fire ash flows eliminated or nearly eliminated nonnative trout from Mineral Creek, making it suitable for repatriation of Gila Trout and inclusion as a Gila Trout recovery stream. Final fish surveys are ongoing and once the stream is determined to be devoid of nonnative trout, Gila Trout will be stocked. Based on the success the Department has found in managing wild, self-sustaining Rio Grande Cutthroat Trout populations with a two trout limit, the Department is committed to seeking a change in the State Game Commission rule to a two Gila Trout limit and requiring the Gila Trout permit for fishing in Mineral Creek, pending the approval of this plan.

Mogollon Creek: Mogollon Creek is a headwater stream of the mainstem Gila River in Grant and Catron Counties, New Mexico. Renovation of this creek, from its headwaters to a waterfall barrier near Forest Service trail 153, was completed in 1997 and the creek was subsequently stocked with Gila Trout. A portion of the creek (from the waterfall upstream to Trail Canyon) was opened to angling in 2008 and is designated a Special Trout Water open to catch and release angling from July 1 to October 31. Pursuant to New Mexico State Game Commission rule, a free Gila Trout permit is required to fish Mogollon Creek. The most recent electrofishing surveys (May 2013) suggested the population was impacted by the Whitewater-Baldy Fire, but multiple age classes and evidence of recruitment were found, indicating the population is rebounding.

Whitewater Creek: Whitewater Creek is a headwater stream of the San Francisco River in Catron County, New Mexico. Prior to the 2013 Whitewater-Baldy Fire, the stream contained wild, self-sustaining populations of Rainbow Trout and Brook Trout managed under the current statewide five trout bag limit, however post-fire ash flows significantly reduced the nonnative trout populations in the creek and its tributaries. Surveys since the fire indicated that a small population of Brook Trout survived in upper South Fork Whitewater Creek and a small population of Rainbow Trout survived in upper Whitewater Creek. The Department has initiated compliance and planning to conduct a piscicide treatment to remove the remaining nonnative trout. After successful renovation, Gila Trout will be repatriated to Whitewater Creek and it will be included as a Gila Trout recovery stream. Based on the success the Department has found in managing wild, self-sustaining Rio Grande Cutthroat Trout populations with a two trout limit, the Department is committed to seeking a change in the State Game Commission rule to a two Gila Trout limit and requiring the Gila Trout permit for fishing in Whitewater Creek, pending the approval of this plan. Additional angling regulations may be considered based on future public input.

Willow Creek: Willow Creek is a headwater stream of the Middle Fork Gila River and a tributary to Gilita Creek in Catron County, New Mexico. It is currently designated as Special Trout Water with a limit of two Gila Trout per day and is a popular angling location. Gila Trout have been stocked here for recreational purposes since 2007 (see Appendix B for stocking history). The 2012 Whitewater-Baldy Fire nearly eliminated all trout in Willow Creek and multiple removal efforts have resulted in removal of the remaining Brown Trout from the creek. In addition, Gila Trout have been stocked multiple times each year since 2013 and the most recent survey (April 2015) found multiple size classes of fish, including young of year. Work is currently underway to secure Willow Creek with a fish barrier and it is anticipated that the barrier will be completed in 2016. Once a barrier is in place, Willow Creek will become a recovery population. The Department is committed to seeking a change in the State Game Commission rule to require the Gila Trout permit for fishing in Willow Creek, pending the approval of this plan.

Non-Recovery waters

Black Canyon below barrier: Black Canyon is a tributary to the East Fork Gila River in Grant County, New Mexico. A fish barrier is located at the Black Canyon campground and there is a recovery population of Gila Trout above the barrier. Below the barrier, there was a wild population of Rainbow and Brown Trout prior to the 2013 Silver Fire, but these species have not been detected since the fire. Gila Trout are currently present in low densities below the barrier in Black Canyon as a result of fish that have been stocked upstream of the barrier. Gila Trout have occasionally been stocked in Black Canyon below the barrier, but stocking has been inconsistent and not well documented. The description of the 4(d) special rule contemplates stocking fish below barriers to create a buffer to the recovery population (71 Fed. Reg. 40670). Black Canyon is an ideal location for a recreational population because of its relatively easy access and location near the Black Canyon campground. Current regulations in this portion of the creek allow a limit of five trout of any length. The Department is committed to seeking a change in the State Game Commission rule to require the Gila Trout permit for fishing in Black Canyon, pending the approval of this plan.

Gila River Forks Area: The Gila River Forks Area is defined as the area from the confluence of the West and Middle forks of the Gila River downstream to the confluence with the East Fork Gila River. Warm summer water temperatures in the Forks area limit this reach to stocking only in the cooler months. It is easily accessible and a popular angling location. This area has been stocked regularly with Gila Trout since 2007 (see Appendix B for stocking history). In years when catchable-size Gila Trout are stocked in the Gila Forks area in early spring (April/May), 13 have been caught during June surveys each of those years. However, when Gila Trout were only stocked in winter (December/January), only one Gila Trout was detected during June

surveys, indicating they are not persisting into the summer months. Most recent surveys (June 2015) found six *Oncorhynchus* species (52-375 mm total length) in the reach from Little Creek to the Gila Cliff Dwellings Visitor Center bridge. Current regulations allow a limit of five trout of any length. The Department is committed to seeking a change in the State Game Commission rule to require the Gila Trout permit for fishing in Gila River Forks Area, pending the approval of this plan.

Gilita Creek: Gilita Creek is a headwater stream of the Middle Fork Gila River in Catron County, New Mexico. It is currently designated as a Special Trout Water with a limit of two Gila Trout per day and is a popular angling location with easy access. Gila Trout have been stocked for recreational purposes since 2007 (see Appendix B for stocking history). The 2012 Whitewater Baldy Fire nearly eliminated all trout in Gilita Creek and the creek, along with Willow Creek, has been restocked with Gila Trout. Gilita Creek has not been surveyed since post-fire restocking. The Department is committed to seeking a change in the State Game Commission rule to require the Gila Trout permit for fishing in Gilita Creek, pending the approval of this plan.

Lake Roberts: Lake Roberts is located on Sapillo Creek in Grant County, New Mexico. The 72-acre reservoir was built in 1963 for the purpose of providing fishing access. It is a popular lake for fishing and is currently stocked bi-monthly with Rainbow Trout in the winter, spring, and fall (see Appendix C for current stocking schedule and Appendix B for Gila Trout stocking history). Broodstock Gila Trout have been stocked occasionally in Lake Roberts and a Gila Trout fishing derby has been held at Lake Roberts as a way to gain support for Gila Trout conservation. Because of limitations on the number of fish available, we expect to continue stocking Rainbow Trout and supplement with Gila Trout. Current regulations allow a limit of five trout of any length.

Sapillo Creek: Sapillo Creek is a tributary to the mainstem Gila River in Grant County, New Mexico. Since 2007, recreational Gila Trout have been stocked approximately 1 km downstream of the Highway 180 Bridge in Grant County, New Mexico (see Appendix B for stocking history). The creek also contains a wild Rainbow Trout population. The most recent survey (June 2015) found eight *Oncorhynchus* species (76-272 mm total length) in a 200-meter stream reach within the stocked reach. Current regulations allow a limit of five trout of any length. The Department is committed to seeking a change in the State Game Commission rule to require the Gila Trout permit for fishing in Sapillo Creek, pending the approval of this plan.

West Fork Gila River: The headwaters of the West Fork Gila River above the waterfall near White Creek Cabin are designated as Gila Trout recovery waters, however downstream of the waterfall there are wild populations of Brown and Rainbow Trout. Surveys indicate that the

trout population was significantly reduced by the 2012 Whitewater-Baldy Fire. Gila Trout were stocked in 2012, 2013, and 2014 and it is possible that a reproducing population will establish in this reach of the river, although hybridization with Rainbow Trout will likely occur. Current regulations in this portion of the West Fork Gila River allow a limit of five trout of any length. The Department is committed to seeking a change in the State Game Commission rule to require the Gila Trout permit for fishing in West Fork Gila River, pending the approval of this plan.

Management Objectives for Gila Trout

Recovery streams

All five recovery streams will be managed with the objective of providing anglers the opportunity to catch a wild Gila Trout. The streams will be managed to provide a size structure of multiple year classes of trout including young of year and a density of greater than 80 trout per acre of habitat. These objectives will ensure the metrics established in the downlisting package are being met (i.e., have stable or increasing numbers of individuals and habitat conditions are of sufficient quality to support viable populations of Gila Trout). To establish wild populations in new streams (Whitewater and Mineral creeks) we will stock Age 0 fish at a rate of 0.5 fish per stream meter for three consecutive years, as is standard protocol for establishing new Gila Trout populations. Multiple age classes will be stocked when available. We do not anticipate the need to stock recovery streams to maintain populations, as regulated angling is anticipated to have negligible effects on recovery populations (Brown et al., 2001); however, if stocking becomes necessary for other reasons (fire, drought, etc), it will be conducted at the discretion of the Gila Trout Recovery Team.

Non-Recovery waters

Streams: Management of Gila Trout in these streams is aimed at garnering public support for future recovery actions related to Gila Trout conservation in New Mexico. The streams will be managed to provide a catch rate of 0.5 trout per hour as a put and take or put, grow, and take fishery because seasonally warm temperatures and the presence of nonnative salmonids make them unsuitable for maintaining wild Gila Trout populations. The number and size of fish stocked into each stream will depend on the number of excess fish available and results of previous monitoring. To guide stocking, streams have been prioritized based on size of fish available (Table 2).

Table 2. Stream prioritization for non-recovery recreational Gila Trout stocking.

Fingerling fish (approx. 4-5")	Catchable fish (≥ 6")	Retired broodstock
1. Sapillo Creek	1. Sapillo Creek	1. Lake Roberts
2. Black Canyon below	2. Gila River Forks Area	2. Gila River Forks Area
3. Gilita Creek	3. Black Canyon below	3. West Fork Gila River
4. Gila River Forks Area	4. Gilita Creek	
5. West Fork Gila River	5. Lake Roberts	
	6. West Fork Gila River	

Lake Roberts: Management of Gila Trout in Lake Roberts is aimed at garnering public support for future recovery actions related to Gila Trout conservation. The reservoir will be managed to provide a catch rate of 0.5 trout per hour as a put and take or put, grow, and take fishery. Annual requests for fish will include retired broodstock and smaller size classes when available.

Prior to renovations on the Lake Roberts dam, the Department assisted the Gila National Forest with an annual kids fishing derby at Lake Roberts to help gain support for and increase awareness of Gila Trout. Retired broodstock, some of which are Floy tagged, are stocked into the lake prior to the derby and prizes are given for catching a tagged fish, catching the largest fish, and catching the largest Gila Trout. In the last year the derby was held (2012), 81 kids registered for the derby and it was attended by approximately 250 people, making it a successful outreach event that reached many people in the local community. Now that dam repairs are complete, the partners would like to resume this event.

Evaluation and Monitoring

Recovery streams

Monitoring of recovery streams will be completed through two processes. Currently, a free Gila Trout permit is required to fish Black Canyon above the fish barrier and the open section of Mogollon Creek. Pending approval of the State Game Commission, the permit requirement will include all streams covered under this plan. Annually, a survey is sent to the anglers who registered for the permit that year. Information on what water bodies they fished, how many days and the amount of time they fished each one, and the number and size of Gila Trout caught in each water body will be obtained. Anglers will also be encouraged to provide comments regarding what they did or did not enjoy about fishing in each stream. Angler catch rates for each of the recreational waters will be estimated from these surveys.

Population level trends (abundance, size structure, recruitment) will be monitored via backpack electrofishing surveys at least every three years (71 Fed. Reg. 40668). Surveys will consist of a

single pass electrofishing survey of a minimum of one 200-meter reach, depending on stream length, watershed complexity, and variability of abundance among sites. Data collected during these surveys will include fish length and weight and evidence of any hooking injury. In addition, stream width will be measured.

The survey methods defined above will produce data that can be compared between sampling events and waters. Results of these surveys will be summarized in an annual report and will be used to inform further management activities.

Non-Recovery waters

Monitoring of non-recovery waters will be completed through two processes. Pending approval of the New Mexico State Game Commission, angling in all Gila Trout streams will require a free Gila Trout permit. Annually, a survey will be sent to the anglers who registered for the permit that year. Information on what water bodies they fished, how many days and the amount of time they fished each one, and the number and size of Gila Trout caught in each water body will be obtained. Anglers will also be encouraged to provide comments regarding what they did or did not enjoy about fishing in each stream. Angling in Lake Roberts will be measured via the Department's Annual Statewide Angler Use Survey. T his survey will collect information on angler days and number of fish harvested by species for Lake Roberts. Angler catch rates for each of the recreational waters will be estimated from these surveys.

Streams will be monitored via backpack electrofishing surveys at least every three years (71 Fed. Reg. 40668). Surveys will consist of a single pass electrofishing survey of a minimum of one 200-meter reach, depending on stream length, watershed complexity, and variability of abundance among sites. Boat electrofishing surveys will be conducted at least every three years in Lake Roberts.

Data collected during these surveys will include fish length and weight and evidence of any hooking injury and will be used to evaluate hold-over rates and survival. Results of these surveys will be summarized in an annual report and will be used to inform further management activities.

Additional Stocking Locations

This plan will be modified in the future as streams and lakes are identified as potential locations to stock recreational fish. Tentative locations which may be added, pending consultation, include:

- Snow Lake
- Sacaton Creek

- Gwynn Tank
- Glenwood Pond

Enhancements to Gila Trout Production

The Department operates the Glenwood State Fish Hatchery (Glenwood SFH) in Glenwood, NM and currently produces all-female, triploid Rainbow Trout for stocking in the region. Opportunities exist to produce Gila Trout at this facility. Production of Gila Trout at Glenwood SFH would assist with relieving the burden on Mora NFH as the sole hatchery for producing Gila Trout (71 Fed. Reg. 40670); provide additional resources to Gila Trout management in the form of Sportfish Restoration Act Funding; and would improve the flexibility of timing of stocking and size of fish at stocking. Resources available at Glenwood SFH would allow for larger fish to be produced for recreational stocking, thereby improving angler experience and creating goodwill and support in the local community. Overall, inclusion of Glenwood SFH in the Gila Trout program will contribute to the conservation of Gila Trout; is in full support of the recovery goals; and will further the purposes of the 4(d) special rule (71 Fed. Reg. 40659-40660).

The Department would like to work with our partners to take advantage of the opportunities at Glenwood SFH for Gila Trout.

Communication and Coordination

After receiving the number and size of fish available from FWS, stocking requests will be submitted to the NMFWCO identifying number of fish, size class, and stocking schedule. A summary of monitoring efforts will be submitted annually to the NMFWCO.

Literature Cited

Brown, D.K., A.A. Echelle, D.L. Propst, J.E. Brooks, and W.L. Fisher. 2001. Catastrophic wildfire and number of populations as factors influencing risk of extinction for Gila trout (*Oncorhynchus gilae*). Western North American Naturalist 61: 139-148.

Endangered and Threatened Wildlife and Plants; Reclassification of the Gila Trout (*Oncorhynchus gilae)* From Endangered to Threatened; Special Rule for Gila Trout in New Mexico and Arizona. Final Rule. 71 Federal Register 40657-40674 (July 18, 2006) (to be codified at 50 CFR pt. 17). Print.

U.S. Fish and Wildlife Service. 2003. Gila trout Recovery Plan (third revision). Albuquerque, New Mexico. i-vii + 78 pp.

Appendix A: Gila Trout Permit Survey Results, 2007-2013

2007

The first fishing season for Gila Trout occurred in 2007. Iron Creek was open year-round and Black Canyon was open 1 July through 30 September 2007. Black Canyon was a catch and release fishery while Iron Creek had a two-fish bag limit. Terminal gear was restricted to barbless single-hook artificial flies and lures. In addition to having a valid fishing license, any angler fishing Black Canyon or Iron Creek was required to have a Gila Trout angling permit (available free online or from selected vendors).

Questionnaires were sent to all 150 anglers registered to fish for Gila Trout in 2007; 70 (47%) responded. Approximately 15 respondents fished for Gila Trout, and 12 of those fished Black Canyon. One angler reported fishing Iron Creek, but fished below the barrier, and two fished in the Gila River Forks area where the permit is not required. A total of 15 angler days were spent on Black Canyon by respondents and 119 Gila Trout were caught (Table A1). One Brown Trout was reported above the waterfall barrier. The impact of this small amount of angling on these populations is anticipated to be negligible.

Table A3. Number of anglers and Gila Trout caught during the 2007 angling season.

Stream	# Anglers	Angler Days	# fish caught	0-4"	5-8"	9-12"	>12"
Black Canyon	12	15	119	33	48	32	6

2008

Three recovery streams were open for sport fishing in 2008: Black Canyon, Mogollon Creek, and Iron Creek. Anglers were required to register to fish 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 (non-recovery streams) for angling. Registration was not required for individuals fishing non-recovery waters.

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 only. Surveys were returned from 44 individuals (25%). Approximately 14 of the respondents reported that they fished for Gila Trout, seven in recovery streams (Table A2). The impact of this small amount of angling on these populations is anticipated to be negligible.

Table A4. Number of anglers and Gila Trout caught during the 2008 angling season.

Stream	# Anglers	Angler Days	# fish caught	0-4"	5-8"	9-12"	>12"
Black Canyon	5	7	65	3	33	21	8
Mogollon Creek	2	1.5	15	0	0	15	0
Iron Creek	3	5	36	6	25	5	0

2009

No survey was completed due to a vacancy in the position.

2010

No survey was completed due to a vacancy in the position.

2011

No survey was completed due to a vacancy in the position.

2012

Three recovery streams were open for sport fishing in 2012: Black Canyon, Mogollon Creek, and Iron Creek. Anglers were required to register to fish on these creeks and 361 anglers registered in 2012. Sapillo Creek, Willow Creek, the Gila Forks area, and Lake Roberts (non-recovery waters) were also open for Gila Trout angling in 2012. Registration was not required for individuals fishing non-recovery waters.

Questionnaires were sent to all 361 anglers registered to fish for Gila Trout in 2012; 62 (17%) responded. Ten respondents fished for Gila Trout with most citing the Whitewater Baldy Fire as the reason for not fishing. Of the ten respondents who fished for Gila Trout, all fished Black Canyon, two fished Iron Creek, and one fished Mogollon Creek (Table A3). The impact of this small amount of angling on these populations is anticipated to be negligible.

Table A5. Number of anglers and Gila Trout caught during the 2012 angling season.

Stream	# Anglers	Angler Days	# fish caught	0-4"	5-8"	9-12"	>12"
Black Canyon	10	20	17	0	11	3	3
Mogollon Creek	1	1	0	0	0	0	0
Iron Creek	2	2	6	0	3	2	1

2013

Three recovery streams were open for sport fishing in 2013: Black Canyon, Mogollon Creek, and Iron Creek. Anglers were required to register to fish these creeks and 396 anglers registered in 2013. Sapillo Creek, Willow Creek, the West Fork Gila River, the Gila Forks area, and Lake Roberts (non-recovery waters) were also open for Gila Trout angling in 2013, but a permit was not required to fish non-recovery waters.

Questionnaires were sent to 387 registered anglers; surveys were not sent to nine anglers because they did not provide adequate contact information. Sixty-two anglers (16%) responded to the survey. Only two respondents fished for Gila Trout; the others cited recent fires, flooding, drought, and limited access as reasons for not fishing. Both of the respondents

fished in Mogollon Creek for a total of four angler days and neither caught a fish. Given the reported angler use and catch rates, it is unlikely that angling impacted Gila Trout populations in 2013.

Two streams were closed to angling in 2013 because of new genetic information (Iron Creek) and the establishment of a new population (McKenna Creek).

Appendix B: Stocking History of Non-Recovery Gila Trout Waters in New Mexico

Date	Stream	Number	Length (inches)
11/14/2007	Willow/Gilita	1,462	8.7
11/15/2007	Sapillo	200	8.7
11/15/2007	Forks Area	700	8.7
11/15/2007	Forks Area	85	21.4
4/15/2007	Forks Area	143	16.9-19.3
4/16/2007	Forks Area	434	13.2
6/6/2008	Willow/Gilita	486	13.1-14.2
11/12/2008	Sapillo	50	11.5
11/12/2008	Forks Area	41	15.5-16.5
11/12/2008	Forks Area	108	6.0
11/20/2008	Gilita	1,000	4.5
5/5/2009	Forks Area	147	16.5-20
5/27/2009	Willow	752	8.9
6/7/2009	Forks Area	12	6.6
11/19/2009	Sapillo	200	9.5
12/2/2009	Forks Area	747	9.6-10.5
2/18/2010	Sapillo	250	9.8
2/25/2010	Forks Area	496	9.8
12/13/2010	Forks Area	810	8.4
12/13/2010	Sapillo	200	8.4
12/29/2010	Willow	60	14.9
12/29/2010	Willow	640	8.7
1/24/2011	Sapillo	1,817	4.5
1/31/2011	Black Canyon (below)	611	4.8
4/14/2011	Sapillo	100	5.8
4/14/2011	Forks Area	925	5.8
6/4/2011	Lake Roberts	205	15.9-17.2
11/30/2011	Forks Area	3,983	4.8
1/11/2012	Sapillo	200	10.1
1/11/2012	Forks Area	1,530	4.6-5.1
1/11/2012	Forks Area	293	10.1
2/9/2012	Forks Area	58	14.2
2/9/2012	Sapillo	41	14.2
4/22/2012	Willow	266	5.7-6.8
4/22/2012	Willow	195	13.6
5/31/2012	Lake Roberts	70	17.0
5/31/2012	Lake Roberts	230	13.5-14.6
11/4/2012	WFG (below falls)	3,060	3.9-4.03

Date	Stream	Number	Length (inches)
1/31/2013	Lake Roberts	150	15.7-17.3
2/20/2013	Sapillo	800	5.3
2/20/2013	Forks Area	1,715	4.54-5.34
4/2/2013	Forks Area	200	14.3
10/28/13	Sapillo Creek	1,000	4.7
11/4/2013	WFG (below falls)	4,177	4.73-4.81
11/22/13	Willow Creek	2,940	5.0
11/22/13	Willow Creek	251	10.0
2/27/14	Forks Area	22	8.5
5/2/14	Willow Creek	179	19.2
9/30/14	WFG (below falls)	1,200	4.2
10/22/14	Black Canyon (below)	100	4.5
10/22/14	Black Canyon (below)	200	11.0
11/14/14	Willow Creek	1,511	4.3
11/14/14	Willow Creek	179	11.6
6/4/15	Willow Creek	147	12.3
6/4/15	Willow Creek	83	14.1
6/4/15	Willow Creek	495	8.0
10/7/15	Willow/Gilita Creek	6,331	3.2
10/7/15	Willow/Gilita Creek	3,972	4.0

Appendix C: Lake Roberts Stocking Schedule

Stocking Schedule By Water
10:26 am 12/03/2015

3215 : LAKE ROBERTS

Month	Week	Species	Size	Number	Hatchery
January	1	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
January	3	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
February	1	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
February	3	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
March	1	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
March	3	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
April	1	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
April	3	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
May	1	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
May	3	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
September	1	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
September	3	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
October	1	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
October	3	Channel Catfish	8	3550	ROCK LAKE TROUT REARING FACILITY
October	3	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
November	1	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
November	3	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
December	1	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY
December	3	Triploid Rainbow Trout	10	1250	GLENWOOD TROUT HATCHERY

Plan Approval:

1/14/16

Michael B. Sloane **Date**
Chief of Fisheries
New Mexico Department of Game and Fish

1/14/16

Tom Sinclair **Date**
Project Leader
U.S. Fish and Wildlife Service
New Mexico Fish and Wildlife Conservation Office

1-21-16

Stewart Jacks **Date**
Assistant Regional Director-Fish and Aquatic Conservation
U.S. Fish and Wildlife Service
Southwest Region