

**To:** Doug Duncan, U.S. Fish and Wildlife Service

**From:** Anthony Robinson, Arizona Game and Fish Department

**Date:** June 16, 2010

**Re:** Gila River Basin Native Fishes Conservation Program: Cooperative Agreement  
201819J853 Draft Semi-Annual Report for the Period November 1, 2009--April 30, 2010

**COOPERATIVE AGREEMENT TITLE:** Arizona CAP Gila River Basin Native Fishes Conservation Program

**FUNDING:** Approximately \$141,310 expended during 10/31/09 – 04/30/10.

Recovery of Natives (RPA 3): \$114,428

Control of Nonnatives (RPA 4): \$26,882

**GENERAL ACTIVITIES:** Tony Robinson, David Boyarski, David Ward, and Ross Timmons attended the Region V NFCT Meeting on December 4, 2009 and the spikedace and loach minnow conservation team meeting on January 28, 2010. Tony, David, and Clay gave oral presentations summarizing several CAP projects at the annual Desert Fishes Council Meeting in November 2009. Also continued to monitor budget and administer the program. Approximate expenditures on general activities = \$11,310 (\$9,050 RPA3 and \$2,260 RPA4).

**PRIORITY ACTIONS IDENTIFIED IN COOPERATIVE AGREEMENT APPENDIX:**

1. Acquire loach minnow and spikedace
2. Muleshoe Ecosystem stream and spring repatriations
3. Fossil Creek repatriations
4. Fresno Canyon repatriations
5. Bonita Creek renovation and repatriations
6. Arizona trout stream loach minnow repatriations
7. Gila topminnow stockings
8. Arnett Creek repatriations
9. Redrock Canyon/Sonoita Creek renovation and repatriations
10. Morgan City Wash and Chalky Spring repatriations
11. Turkey Creek and O'Donnell Creek repatriations
12. Post Canyon/Freeman Spring repatriations
13. Spring Creek renovation and repatriations
14. Mineral Creek renovation and repatriations
15. Blue River repatriations

**TASK-SPECIFIC ACTIVITIES:**

Old and new task numbers are given where known.

**Acquire spikedace and loach minnow for propagation (Task 3-57 and 3-75g).**

Status: Ongoing.

Expenditures: Approximately \$11,315 (RPA3).

Preliminary Results: Tony Robinson, David Orabutt, David Ward, and Ross Timmons attended the spikedace and loach minnow conservation team meeting on January 28, 2010; propagation priorities for spikedace and loach minnow were discussed. Tony Robinson and David Ward consulted other agencies for recommendations on how many spikedace to place in one of the newly created ponds at the Bubbling Ponds facility. Tony Robinson and David Ward also coordinated with David Propst of New Mexico Game and Fish Department about acquiring more Gila River forks spikedace; most of the 17 fish of this lineage at Bubbling Ponds Hatchery Research Facility were lost because of a power failure. Department staff began drafting a new EAC for the project.

Obstacles: Same as before; finding fish in locations where they are rare (e.g., North Fork of East Fork Black River, Verde River, Eagle Creek). Waiting on approval from San Carlos Tribe to allow someone to survey and collect spikedace and loach minnow from Eagle Creek and transport them to Bubbling Ponds. We are also waiting on approval from White Mountain Apache tribe to acquire loach minnow from White River.

Comments: At Bubbling Ponds Hatchery Research facility we now have spikedace from three of the five supposedly extant populations (Aravaipa Creek, upper Gila River, and the Gila River forks). We plan on acquiring more Gila River forks spikedace in 2010. We have yet to find spikedace in the Verde River or Eagle Creek. We also now have loach minnow from three (Aravaipa Creek, Blue River, and Gila River Forks) of the eight supposedly extant populations. We have yet to find them in Eagle Creek or the East Fork of the Black River tributaries, and we are still unsure if we will be able to acquire White River loach minnow from the White Mountain Apache Tribe. The loach minnow populations in the San Francisco River and upper Gila River are considered robust enough to not require refuge at this time.

**Muleshoe ecosystem stream and spring repatriations (Task 3-47 and 3-75f).**

Status: Ongoing.

Expenditures: Approximately \$14,140 (RPA3).

Preliminary Results: Tony Robinson, Ross Timmons, David Orabutt, and Clay Crowder of AZGFD drafted a report summarizing monitoring and stockings that occurred during 2009. On April 19, Department and TNC personnel performed a 6-month post-stocking monitoring of desert pupfish at the newly created ponds behind the Muleshoe Headquarters guest houses. We set six small collapsible minnow traps (baited with dried dog food) into each of the two pools for approximately 2 hours. The pools are separated by a small 1-m wide berm. Pupfish were only stocked into the upper pool because the lower pool was not yet created when the pupfish were stocked in October 2009. We captured 84 adult pupfish in the upper pool; all fish were returned to the pond. We also

captured 1 adult and 25 lowland leopard frog tadpoles. Department staff also assisted TNC personnel in the semi-annual green sunfish removal effort in Redfield Canyon on April 20.

Obstacles: None at this time.

Comments: At the two ponds on the hill behind the Muleshoe Ranch headquarters, water trickles over the berm from the upstream pool to the downstream pool. The water flowing over the berm is not deep enough to allow fish to move from one pool to the other. Therefore we recommended that a portion of the berm be removed to allow pupfish free access to both ponds.

### **Fossil Creek repatriation of listed fish species (Task 3-75I).**

Status: Ongoing.

Expenditures: Approximately \$18,668 (RPA3).

Preliminary Results: On November 6, 2009, 3,356 Gila topminnow (Sharp Spring lineage from Bubbling Ponds Hatchery Research Facility) were stocked into three locations in Fossil Creek; 2,316 into two locations just downstream of Irving, and 1,657 about 2.5 km upstream of High Falls; 21 additional topminnow died during the transportation-tempering process. On December 14, 2009 997 razorback sucker were stocked into Fossil Creek; one fish died during the transportation process. David Orabutt and Tony Robinson began drafting a report summarizing the stocking and monitoring that occurred during 2009. David Orabutt organized and led a meeting of the Fossil Creek Native Fishes Management Workgroup on February 2, 2010. David Orabutt, with input from AZGFD, USFWS, and USFS drafted an implementation plan and forwarded it through our Region VI and Region II offices to the US Forest Service.

Obstacles: The Aravaipa lineage of loach minnow and spikedace held at Bubbling Ponds Hatchery Research Facility did not produce enough offspring during 2009 to stock all available streams (Hot Springs Canyon, Redfield Canyon, and Fossil Creek). After discussions among agency partners, it was decided to stock all available fish into Hot Springs Canyon, so none were stocked into Fossil Creek in 2009.

Comments: Precipitation levels during the winter of 2009-2010 were greater than the average, so spring runoff produced flood flows in Fossil Creek. It is unknown how high the flood flows were as there is no discharge gage on Fossil Creek. It will be interesting to see if Gila topminnow persisted after the floods.

### **Fresno Canyon repatriations (Task 4-64b).**

Status: Ongoing.

Expenditures: None

Preliminary Results: Suzy Ehret (AZGFD Region V) drafted and finalized a report summarizing monitoring in October 2008 and October 2009 (Ehret 2009).

Obstacles: None foreseen at this time.

Comments: EAC was drafted but is still waiting approval. After EAC is signed, the Department will move forward with stocking Gila chub (Sheehy Spring lineage) into Fresno Canyon.

The Department has been coordinating with a private landowner that has a pond upstream of the treated area. The pond contains green sunfish and yellow bullhead. The landowner is amenable to drying the pond to remove these species but wants to stock other sport fish (largemouth bass, bluegill, and channel catfish) so that local residents can fish there. The Department is trying to work out a compromise to minimize the chance that nonnative species enter the treated area.

**Bonita Creek renovation and repatriations (Task 4-70b).**

Status: Ongoing.

Expenditures: Approximately \$11,315 (RPA4).

Preliminary Results: David Boyarski drafted a renovation plan and distributed it to partners for review. David coordinated with various partners relative to the upcoming renovation, salvage, and stockings. We began drafting a report summarizing all Department-led monitoring activities that occurred during 2009.

Obstacles: Green sunfish and mosquitofish are obstacles for the establishment of populations for some of the native species. Environmental compliance (draft EA, Biological Opinion, and Record of Decision) needs to be finalized.

Comments: The plan is to renovate Bonita Creek again in June 2010. Subsequent to the reporting period, the decision was made to fill in the large ponded area upstream of the barrier, and to accomplish the fill before a renovation.

**Arizona trout stream loach minnow repatriations (Task 3-38 and 3-75b).**

Status: Ongoing.

Expenditures: None.

Preliminary Results: No work was completed on this task during the reporting period.

Obstacles: Finding loach minnow in the Three Forks area. Identifying suitable streams to stock loach minnow into once we do find and propagate Three Forks loach minnow.

Comments:

**Gila topminnow stockings (Task 3-37 and 3-75a).**

Status: Ongoing.

Expenditures: Approximately \$19,245 (RPA3).

Preliminary Results: On November 6, 2009 the Department stocked 3,356 Gila topminnow into Fossil Creek (see Fossil Creek task).

On November 17, 2009 the Department stocked 639 Gila topminnow (Sharp Spring lineage from Bubbling Ponds) into one of four ponds (referred to as Swimming Pool Tank) at Robbins Butte Wildlife Area. One additional topminnow died during the transportation/tempering process. On the same day we stocked 128 desert pupfish into another pond: Twin Tanks. One additional pupfish died during the transportation and tempering process. Gila topminnow were observed in Swimming Pool Tank and desert pupfish in Twin Tanks during the first visual monitoring on December 23, 2009. Both sites were monitored on April 27, 2010. Ten collapsible minnow traps were set in Swimming Pool Tank for a minimum of 1.58 h, and 38 topminnow were captured. Many more topminnow were observed. Ten traps were also set in Twin Tanks and pulled over 2 h later. Fifty-one desert pupfish were captured, five of which were < 1 cm TL.

On April 27, 2010, Department staff stocked 571 Gila topminnow into a third pond (Stop Sign Tank) at Robbins Butte Wildlife Area. Fish originated from Deer Valley High School (235) and Desert Harbor Elementary School (340). Four additional topminnow died during the transportation/tempering process.

Department staff completed a Safe Harbor Agreement Certificate of Inclusion for Usery Mountain Regional Park; the agreement was signed by Maricopa County Parks and U.S. Fish and Wildlife Service, but still needs to be signed by the Department.

Clay Crowder drafted EACs for Mud Spring, Walnut Spring, and Cottonwood Artesian on the Tonto Basin Ranger District of Tonto National Forest.

Obstacles: Tonto National Forest personnel need to continue drafting a BA for introduction of Gila topminnow and desert pupfish to Rock Spring near Sunflower.

Comments:

### **Arnett Creek repatriations (Task 3-41 and 3-75d).**

Status: Ongoing.

Expenditures: Approximately \$566 (RPA3).

Preliminary Results: Some coordination with Tonto National Forest (NF). The USFWS completed a Biological Opinion and sent it to the Forest Service. The Forest Service needs to develop a Record of Decision regarding the Biological Opinion and Biological Assessment and Evaluation.

Obstacles: Tonto NF may have to revise the BAE again. Some personnel at Globe Ranger District had concerns about the BAE and subsequent BO; not sure what the concerns are.

Comments: We may start volunteering to write the Forest Service BAs to speed up the process on other repatriation sites.

**Redrock Canyon/Sonoita Creek renovation and repatriations (Task 4-70a, and 3-40, 3-75c).**

Status: Ongoing.

Expenditures: None

Preliminary Results: Department Region V staff completed a report summarizing the surveys of tanks in the Sonoita Creek drainage. Sixty four of the 129 tanks in the drainage were surveyed. Department Region V staff also worked to address public comment on the Redrock Canyon Renovation draft EA.

Obstacles: Addressing comments on the draft EA. Public support for the renovations and a barrier on Sonoita Creek.

Comments: The remaining 65 tanks in the Sonoita Creek drainage need to be surveyed to determine which have fish present.

**Repatriation of native fishes to Morgan City Wash and Chalky Spring (Task 3-84a).**

Status: Ongoing.

Expenditures: Approximately \$3,950 (RPA3).

Preliminary Results: A report summarizing the stockings and monitoring during 2009 was drafted and sent to stakeholders. Troy Corman of AZGFD visited Morgan City Wash during spring 2010 and reported seeing Gila topminnow.

Obstacles: Morgan City Wash may not have suitable habitat for desert pupfish.

Comments: Prolonged precipitation during the winter may have resulted in flood flows in Morgan City Wash. It will be interesting to find out if topminnow have persisted in Morgan City Wash and Chalky Spring and desert pupfish in Morgan City Wash.

**Turkey Creek and O'Donnell Creek repatriations (Task 3-60).**

Status: Ongoing.

Expenditures: Approximately 2,263 (RPA4).

Preliminary Results: Department personnel again contacted Dan Milligan, ranch manager for Canelo Springs Ranch, regarding the possibility of eradicating nonnative fish from ponds on the ranch. Department personnel met with agencies and local

organizations (BLM, Reclamation, TNC, and Audubon Research Ranch) on March 31 to discuss the project and open other avenues of communication with local landowners.

Department staff surveyed O'Donnell Creek and Turkey Creek on April 15. We set 10 collapsible minnow traps and 10 mini hoop nets for 5-6 hours in O'Donnell Creek near the grade control structure (on TNC property). We captured 69 Gila chub, 18 Sonora sucker, 8 longfin dace, a few dozen crayfish, and one Sonora mud turtle. In Turkey Creek we set 8 mini hoop nets and 18 collapsible minnow traps on the Steen property and downstream about 0.25 miles past the U.S. Forest Service Boundary. We captured 25 green sunfish and 15 Sonora mud turtles.

Obstacles: Still need to find out if the owner of Canelo Springs Ranch will allow us to remove nonnative fish from the pond on his land, and if permittees in the O'Donnell drainage have any concerns with renovating O'Donnell Creek and the few tanks that have mosquitofish.

Comments: We will try to get responses from all landowners and permittees by the end of August 2010.

### **Post Canyon/Welch Spring repatriations (Task 3-61 and 3-75h).**

Status: Ongoing.

Expenditures: None

Preliminary Results: No work was completed on this task during the reporting period.

Obstacles: None during this quarter.

Comments: A biological assessment and evaluation and ESA consultation needs to be completed by Bureau of Land Management and an Environmental Assessment Checklist needs to be completed by AZGFD. The amount of water to be renovated and stocked is small. If a barrier is going to be built on lower O'Donnell Creek, it may be better to wait until that is completed to renovate the small reach in Post Canyon located in the unnamed canyon containing Freeman Springs, downstream of the two dams.

### **Spring Creek renovation and repatriations**

Status: Ongoing.

Expenditures: Approximately \$566 (RPA4).

Preliminary Results: Department Region VI staff coordinated with Tonto National Forest and some of the local ranchers during the reporting period. Department headquarters and Region VI staff coordinated with each other regarding the project.

Obstacles: Local public support for the project. Several agency representatives met with ranchers in November 2009 to discuss the project. The ranchers raised various concerns, which will need to be addressed.

Comments:

**Repatriate Gila Chub to Mineral Creek (Task 3-78a).**

Status: Ongoing.

Expenditures: Approximately \$2,265 (RPA3) and \$2,263 (RPA4).

Preliminary Results: Department staff drafted and finalized a report summarizing the all surveys completed in the Mineral Creek drainage during 2009. Department staff coordinated with some landowners regarding the project, and Region VI and headquarters staff coordinated with each other.

Obstacles: Need to talk to all landowners in the Devils Canyon drainage, and find out if they would have concerns about renovating the system and stocking native fish.

Comments: May be able to get some mitigation money to help with the project if the Resolution Mine gets approved.

**Native fish repatriations into Blue River (Task 3-42 and 3-75e).**

Status: ongoing.

Expenditures: Approximately \$5,365 (RPA3) and \$8,215 (RPA4).

Preliminary Results: Department staff drafted report summarizing effort to remove piscivorous fish during 2009. Coordinated with various agencies regarding the project. Reviewed Reclamation's Draft Environmental Assessment: Blue River Native Fish Restoration Project. Drafted an EAC for the restoration of native fish to the Blue River.

Obstacles: Waiting on documented agreement from Apache-Sitgreaves National Forest regarding the plan to restore native fish to the Blue River; once a letter or email is received, we can complete the EAC.

Comments: The Department has decided to wait until the barrier is constructed before doing any repatriations or nonnative fish removals.

**San Pedro Pond Stockings (Task 3-64 and 3-75j).**

Status: Ongoing.

Expenditures: Approximately \$1,130 (RPA3).

Preliminary Results: Department staff modified the existing EAC by adding additional potential donor sites for Gila chub: O'Donnell Creek, T4 Spring, Hot Springs Canyon, and International Wildlife Museum. Additional donor sites to augment the existing Gila



topminnow and desert pupfish sites were also added to the EAC.

Obstacles: Finding and removing sufficient numbers of Gila chub from O'Donnell Creek and International Wildlife Museum without impacting the existing populations.

Comments: We surveyed O'Donnell Creek in April 2010. We captured 71 Gila chub in 20 traps, so it seems that we can safely take at least 20 fish from this population; probably more if primarily YOY are collected. The capture of Gila chub from O'Donnell Creek and IWM, transfer to Bubbling Ponds for parasite treatment, and transfer and stocking into TNC Lower San Pedro River Preserve pond will occur next semester.

#### **Assess Potential Repatriation Waters (Task 3-84c).**

Status: Ongoing.

Expenditures: Approximately \$565 (RPA3).

Preliminary Results: Periodic coordination with Tonto National Forest Tonto Basin Ranger District Wildlife Biologist and Tonto Forest Fisheries Biologist regarding Mud Spring, Walnut Spring, and Cottonwood Artesian (see Gila topminnow stockings). Also, periodic conversations with Tonto National Forest personnel regarding potential native fish repatriations to Lime Creek, Seven Springs Wash, and Grapevine Canyon (tributary to New River).

Obstacles: None at this time.

Comments: Not expending much effort on this task except conversations with various people.

#### **Bubbling Ponds O&M (Task 3-86).**

Status: Ongoing.

Expenditures: Approximately \$28,169 (RPA3).

Preliminary Results: Finished construction and filled two ponds for Eagle Creek roundtail chub broodstock in November 2009. This infrastructure improvement also included re-routing the drain line for the entire facility so that water no longer discharges to the other Bubbling Ponds fish hatchery facilities, thus minimizing chance of exporting pathogens and parasites or escapement of fish to other hatchery facilities. Late last reporting period (October 29, 2009), 79 Eagle Creek roundtail chub were brought to the hatchery and placed in two 500-gal circular tanks in the Bubbling Ponds quarantine facility for prophylactic treatments. In December 2009, after over six weeks of treatment, the remaining 73 chub (6 mortalities resulted from fish that jumped out of tanks), were transferred to one of the newly constructed ponds.

Hatchery staff continued to care for existing spikedace, loach minnow, Gila topminnow, and Eagle Creek roundtail chub. Spikedace were moved from circular tanks to artificial

streams to promote spawning. Spikedace and loach minnow spawning was monitored and adults were separated from larvae. New artificial streams were set up for spikedace and loach minnow spawning. Some of the Aravaipa-lineage spikedace were placed into the fishless, newly constructed roundtail chub pond in an attempt to promote spikedace spawning. No larvae were found by the end of the reporting period.

Set up new tanks for woundfin and larger fish (roundtail chub, razorback, Sonora, and desert suckers). Staff placed trays containing various sized substrate into the woundfin tank in an attempt to promote spawning. Woundfin laid eggs but eggs did not hatch.

Obstacles: All but three of the Gila River forks spikedace died before spawning began, so young produced are only from these three individuals. Some lineages seem to produce fewer offspring than others. For example Blue River loach minnow have produced very few eggs/larvae, but Aravaipa loach minnow have produced thousands.

Comments: Still not sure why the Blue River lineage produces so few offspring compared to the Aravaipa lineage. Not sure why woundfin eggs did not hatch.