

I. Project Title: Wahweap Operation and Maintenance

II. Bureau of Reclamation Agreement Number(s): R19AP00059

Project/Grant Period: Start date (Mo/Day/Yr): 10/01/2018  
End date: (Mo/Day/Yr): 9/30/2023  
Reporting period end date: 9/30/2019  
Is this the final report? Yes \_\_\_\_\_ No X

III. Principal Investigator(s):

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IV. Abstract:

Wahweap State Fish Hatchery, located in Big Water, Utah, rears bonytail (*Gila elegans*) for stocking in the Upper Colorado River Basin for the Upper Colorado River Endangered Fish Recovery Program. Wahweap also maintains a refuge population of razorback sucker brood stock for the Recovery Program.

V. Study Schedule: On going

VI. Relationship to RIPRAP:

General Recovery Program Support Action Plan

IV Manage genetic integrity and augment or restore populations

IV.A. Genetic management

IV.A.4. Secure and manage genetic stocks in refugia

IV.A.4.a Razorback sucker

IV.A.4 Develop basin wide bonytail restoration plan and implement as approved

IV.C. Operate and maintain facilities

VII. Accomplishment of FY 2019 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

- Wahweap Hatchery Superintendent assisted the Recovery Program in staffing the information booth at the Colorado River Water Users Association Annual Conference and the Utah Water Users Conference. Wahweap Staff provided live bonytail for the display, took care of them for the duration of the meetings and assisted with outreach.

- Wahweap had 32,503 naturally spawned bonytail offspring that were separated from the adult fish. We placed them into the pikeminnow pond for forage.
- Wahweap PIT-tagged 10,947 fish in October 2018 and stocked them in March 2019 (Table 1). Spring HCPs performed on 83 month-old fish show that fish came out of the winter months with a mesentery fat score of 3.5 out of 4, a K-factor of 0.788 with a 45% male to 55% female sex ratio, 35% normal livers, and no observed deformities. Fish averaged 258.4 mm in length and 152.7 g.
- All fish stocked were treated for Asian tapeworm (*Bothriocephalus acheilognathi*) with Praziquantel @ 2.5 mg/L for a 24-hour static bath and no worms were observed during any treatments.
- Wahweap used 60 bonytail (YOY 2014) for the yearly Fish Health Inspection. During this year's inspection we observed no Asian tapeworm in any fish on station. Infection across the hatchery is very low or unseen and Wahweap is working closely with Wade Cavender (State of Utah Fish Pathologist) to eradicate this parasite from hatchery ponds. Until the eradication, Wahweap has been instructed to treat each individual pond as a different rearing unit. Wahweap will treat prophylactically, with Praziquantel, all fish being stocked or transferred. Fish were given the Fish Health Approval number DWR19-067 and DWR19-068.
- Wahweap Hatchery has conducted Health Condition Profiles (HCP) on all fish stocked or transferred in FY 2019 and they have been submitted to Wade Cavender (State of Utah Fish Pathologist).
- All PIT-tagged data for FY 2019 has been submitted.
- Wahweap was able to provide school tours to over 150 students this year from Arizona, Utah, and the Navajo Nation.
- Wahweap Hatchery received 15,000 3-day old bonytail from the Dexter National Fish Hatchery in May 2019. The fry were held in the shop tanks for 16-days. Both tanks were fed a brine shrimp diet for the first seven days and then one of the two tanks was introduced to the Pond LE Skretting feed diet. Both tanks performed as planned and were stocked into two ponds for grow-out.
- Wahweap participated in a Bonytail Feed Study overseen by Cheyenne Owens from the Upper Colorado River Recovery Program. The study was put together to evaluate the fat deposition in the livers of bonytail and to see if there are any ill effects caused by high lipid deposition. Wahweap observed higher grow rates and what "appeared" to be lower fat deposition. Wahweap currently plans to switch all bonytail life stages from the Skretting Trout Diet to the Skretting Pond LE Diet starting spring 2020. Bozeman Fish Technology Center is compiling the data from several hatcheries and performing a complete analysis on each live sample. Results from the study are forth coming.
- Wahweap pulled and re-repaired the Main Well during the winter/spring 2019.
- Wahweap staff worked throughout the year on maintenance of the facility and equipment.
- After six years of hard work, Wahweap was able to partner with the Natural Resources Conservation Services (NRCS) to rebuild the rockwall structure protecting the hatchery from major flood events in Wahweap Creek. This project will be completed in November 2019 and the total project cost was \$3,056,524. The UCRRP covered only the reclamation fee for the Bald Knoll Community Pit

(Rip Rap) mining operation and the fee totaled \$15,000. This project was fundamental in protecting the hatchery and helping move the hatchery progression forward for many years to come.

- 100,608 fish remain on station as of fall 2019 (Table 2).

Table 1. Colorado River Recovery Program bonytail stocked or transferred in fiscal year 2019.

Stock Date	Contact Name	Lot Number	River	Stocking/Transfer Location	Number Stocked	Tagged
04/01/2019	Zane Olsen	110502CBBT-Dexter-01	Price	Below Woodside	3,622	Yes
04/02/2019	Zane Olsen	110502CBBT-Dexter-01	Dolores	Rio Mesa Center	3,667	Yes
04/02/2019	Zane Olsen	110502CBBT-Dexter-01	Upper Lake Powell	Bull Frog	3,658	Yes
<b>Total:</b>					10,947	

Table 2. Colorado River Recovery Program fish remaining on station as of fall 2019.

Species	Year Class	Number	Average Size	Number of Ponds
Bonytail	2010	4,396	250.58	1
Bonytail	2019	13,379	115.28	2
Bonytail (WW)	2014	17,444	250.58	4
Bonytail (WW)	2017	14,050	163.3	2
Bonytail (WW)	2019	20,483	75.08	1
Bonytail(WW/Dexter)	2016	30,480	209.25	5
Razorback	Brood	376	438.87	1
<b>Total</b>		100,608		

VIII. Recommendations:

Continue rearing bonytail at Wahweap to meet the stocking needs of the Recovery Program. Maintain razorback back-up brood stock. Supply either species as requested by the Recovery Program. Continue PIT-tagging bonytail in the fall and stocking in the spring. Work on the eradication of Asian tapeworm from the Wahweap Hatchery rearing facility. Evaluate some needed upgrades in facilities and fish culture equipment. Continue conducting HCP on all fish prior to stocking or transfer. We recommend that the Recovery Program coordinate annual collection and reporting of this data by all Program hatcheries.

IX. Project Status:

Ongoing fish culture, propagation, and development will continue at the Wahweap State Fish Hatchery.

X. FY 2019 Budget Status:

- A. Funds Provided: \$242,800
- B. Funds Expended: \$22,800
- C. Difference: 0
- D. Percent of FY 2019 work completed, and projected costs to complete: \$100

E. Recovery Program funds spent for publication charges: \$0

XI. Status of Data Submission (Where applicable):

PIT-tag data was submitted to database manager after the spring 2019 stocking.

XII. Signed

Principal Investigator: Zane Olsen

Date: 11/14/2019