

I. Project Title: Operation and Maintenance of Ouray National Fish Hatchery Randlett

II. Bureau of Reclamation Agreement Number(s): "N/A"

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IV. Abstract: Ouray National Fish Hatchery (ONFH) Randlett was established in May 1996 as a fish refuge and technology development facility to assist in the recovery of the four listed Colorado River fish: razorback sucker, Colorado pikeminnow, bonytail, and humpback chub. The ONFH Randlett has expanded the propagation program to include not only razorback sucker but also bonytail. The hatchery will continue to maintain humpback chubs collected from Desolation Canyon in 2009 as a refuge population and potentially as a source of future broodstock.

Stocking goal established by the Upper Colorado River Endangered Fish Recovery Program (Recovery Program) include the annual production and distribution of 6,000 razorback sucker averaging 350 mm and 10,000 bonytail averaging 250 mm into the middle and lower Green River in Utah.

This is an ongoing project and the hatchery exceeded the stocking goals during 2016 for bonytail stocking 11,202 fish averaging 269.2 mm total length but stocked only 2,322 razorback sucker averaging 329 mm. Tiger salamander larvae depredated on and consumed nearly the entire razorback sucker year class in 2015. However, avian depredation was controlled by suspending lines in a checker board pattern over the half acer ponds.

V. Study Schedule: 1996 - Ongoing.

VI. Relationship to RIPRAP:

General Recovery Program Support Action Plan

- IV. Manage genetic integrity and augment or restore populations.
- IV.A. Genetics management.
- IV.A.4 Secure and manage genetic stocks in refugia.
- IV.A.4.a. Razorback sucker
- IV.A.4.b. Bonytail chub
- IV.A.4.c. Humpback chub
- IV.A.4.a.(1) Middle and Lower Green River.
- IV.C. Operate and maintain facilities.
- IV.C.1. Ouray National Fish Hatchery.

Green River Action Plan: Main Stem.

- IV.A. Augment or restore populations as needed.
- IV.A.1. Develop State stocking plan for the four endangered fishes in the Green River.
- V.A.1.c. Implement plan.

- VII. Accomplishment of FY 2015 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings: The hatchery exceeded the stocking goals during 2016 for bonytail stocking 11,202 fish averaging 269.2 mm total length but stocked only 2,322 razorback sucker averaging 329 mm. Tiger salamander larval depredated the 2015 razorback sucker fry consuming nearly the entire razorback sucker year class. However, avian depredation was controlled this year by suspending lines in a checker board pattern over the half acer ponds.

Razorback suckers were spawned in 2015, producing approximately 330,000 larvae of which 30,000 were stocked in three half acre ponds at densities of 10,000 per pond. Ouray NWR and Ouray NFH documented tiger salamanders for the first time on the refuge and the hatchery in 2015. The larval form of this amphibian can be predatory on small larval fishes and has potential to decimate fry and fingerling fish populations in hatchery ponds. The modified stocking technique employed at ONFH during the past four years has yielded 90% or better returns on our larval fish ponds. During 2015 only 1700 YOY razorback were harvested from the three nursery ponds stocked with a total of 30,000 larval fish but produced hundreds of very large healthy larval tiger salamanders ranging up to 200 + mm. Consequently the hatchery did not meet schedule for razorback sucker production in 2016.

During 2016 the hatchery produced approximately 330,000 larvae of which 20,000 were stocked in two half acre ponds at densities of 10,000 per pond. One pond was harvested this fall with a return of 8,200 razorbacks which were placed in hatchery tanks and will be reared over winter to meet the stocking request for 2017. Razorback YOY in the second pond will be left to overwinter in the pond.

Four half acer ponds were prepared for fry stocking this year, two for razorbacks and two for bonytail. Each of the four ponds were stocked with 50 large razorbacks exceeding 350 mm but tiger salamanders again laid eggs in each of the nursery ponds. Hatchery crew now on the alert removed salamander egg masses and actively captured newly hatched salamander larvae. After the salamander eggs were identified in the ponds and additional 200 bonytail averaging approximately 250 mm were stocked into each fry pond to help reduce larval salamander numbers. All four nursery ponds exhibited abundant feeding activity during the summer months. The technique of stocking larger fish into nursery ponds to reduce salamander depredation appears to have been successful as the one razorback nursery pond harvested this fall yielded an 82% return. The remaining nursery ponds will be harvested in the spring because sufficient numbers of razorbacks and bonytail currently reside in the hatchery.

Bonytail (32,000) YOY were received from Wahweap SFH in 2016 and 20,000 bonytail fry were also received from Dexter, NM this year. Although, bird depredation consumed approximately half of the bonytail in 2015 and did consume some in 2016, lines placed over the half acer ponds dramatically reduced avian depredation. With efforts from the hatchery crew, salamander and avian depredation now appear to be under control at the Ouray NFH!

- VIII. Additional noteworthy observations: Bonytail stockings were completed by 09/21/2016 and were stocked into receiving waters at temperatures of 18° C or higher. LED lighting was installed in the hatchery to reduce electrical consumption as well as reducing stress on the fish and 39 of the 58 hatchery tanks were replaced this year.
- IX. Recommendations: Recommendations for the ONFH include installation of two more replacement wells probably in approximately five years. Bird protection netting over the 0.2 ac ponds should be replaced in the next few years and as well as pond liners in ponds A4-6 and B4-6. Ouray NFH recommends the continued stocking of bonytail into receiving waters of 18° C or higher and to be stocked into back waters connected to the river when possible.

- X. Project Status: "on track and ongoing,"
- XI. FY 2014 Budget Status
- A. Funds Provided: \$640,164
 - B. Funds Expended: \$620,000
 - C. Difference: \$20,164
Our AO retired in June so budget tracking was difficult to say the least and fiscal accountability was deficient.
 - D. Percent of the FY 2016 work completed, and projected costs to complete: Not funded by BOR, however, the BOR does schedule \$ 6050.00 for well jetting each year at the hatchery but no wells were jetted this year.
 - E. Recovery Program funds spent for publication charges: \$0
- XII. Status of Data Submission (Where applicable): Pit tag data submitted November 2014
- XIII. Signed: Karl David Schnoor 11/15/2016
Principal Investigator Date