

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 2019 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Stocking goal established by the 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. The hatchery exceeded stocking goals during 2018 for both razorback sucker (RZ) and bonytail chub (BT), stocking 8,583 RZ averaging 373 mm and stocking 19,224 BT averaging 273.46 mm total length. Fish distribution during 2019 resulted in 6,665 RZ stocked in the Green River near Ouray NFH, 1,789 RZ stocked at Green River UT and 16,442 BT stocked in the vicinity of the hatchery with 2752 stocked at Green River UT. See appendix A for specific stocking data.

Razorback sucker HCPs showed a mesentery score of 3.85 out of 4, 70% normal livers and 75% normal hindguts. Fish averaged 359.5mm in length, 500.8g in weight, and a K-factor of 1.08. Spring bonytail HCPs showed a mesentery score of 4 out of 4 and 0% normal livers. Sampled fish were 24 months old averaging 297.6mm in length, 224.1g in weight and K-factor of 0.84. Summer bonytail HCPs showed a mesentery score of 3.86 and 52% normal livers. Sampled fish were 48 months old averaging 270.4mm in length, 156.1g in weight, and a K-factor of 0.74.

Both avian and salamander depredation was controlled during 2017 and 2018 allowing adequate survival to meet and exceed stocking schedules. Bonytail swim-up fry were not requested from Dexter, NM in 2019. Razorback sucker were spawned in 2019 producing approximately 107,820 larvae from 15 family lots of which 6,500 were stocked into 13 RZ production ponds for future brood stock and 20,000 larvae were stocked to nursery ponds for 2019 productions. In addition the staff at Ouray modified fertilization protocols of the nursery ponds producing natural feed that lasted until mid-July.

Maintaining lines over the ponds placed at 3-5' intervals on a checkerboard pattern has all but eliminated avian depredation. Salamander control continues to be an ongoing process but pre-emptive efforts from the hatchery crew have significantly reduced salamander depredation. With the reduced depredation a more traditional production strategy has resumed at the hatchery, eliminating the need to retain "extra" fish to ensure stocking requests are achieved.

This fall the staff at Ouray cooperated with the Green River FWCO, The Recovery Program Directors office and the Southwestern AARC to assist in acquisition of YOY Colorado Pikeminnow for development of broodstock. The staff at Ouray received captured fish from Green river FWCO field crew and treated them with .5% salt and 30ppm formalin to help recover from the stress of capture and transport and prevent

disease presentation. This allowed for more fish to be captured and then transported to the Southwestern AARC in Dexter, NM with reduced mortality.

VIII. Additional noteworthy observations:

Bonytail stockings were completed in September 2019 and were stocked into receiving waters at temperatures of 18° C or higher and RZ stocking was achieved in October. LED lighting continues to reduce electrical consumption as well as reducing stress on the fish and the new hatchery tanks are working very well. A variable frequency drive (VFD) was installed on a 30 horse power lift pump in the well field which continues to reduce electrical consumption and increase the life of the pump. A new sump pump was purchased to replace the aging and failing lift pumps in the recirculating hatchery and will be installed over the next fiscal year. Two of the heaters that heat the main hatchery building have failed due to age and difficulty to locate parts. Two new 90% efficient heaters were purchased and will be installed this winter. Installation of a truck/trailer wash station has begun at the hatchery to help guard against the spread of Aquatic Invasive Species (AIS).

IX. Recommendations:

Recommendations for the ONFH include installation of two more replacement wells probably in approximately four years. Bird protection netting over the 0.2 ac ponds should be replaced in the next few years as well as pond liners in ponds A4-6 and B4-6. Also continue the 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 2019 Budget Status:

- A. Funds Provided: \$631,537
- B. Funds Expended: \$594,005
- C. Difference: \$37,532 (leftover salary savings from vacant project leader position)
- D. Percent of the FY 2019 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 wells were not jetted this year.
- E. Recovery Program funds spent for publication charges: \$0

XII. Status of Data Submission (Where applicable): Pit tag data submitted October 24, 2019.

XIII. Signed

Principal Investigator: Matthew G. Fry

Date: 10/29/2019

APPENDIX A:

Table 1. Colorado River Recovery Program bonytail and razorback sucker stocked in fiscal year 2019.

Number Stocked	Stocking location	Starting PIT Tag Number	Ending PIT Tag Number	Avg. Length (mm)	Avg. Weight (g)	Species	Year Class	Stock Date	Stock River	Stock RMI
3594	Enron boat ramp	3DD.003D48A196	3DD.003D48DFCF	284	219.5	BT	2017	8/29/2019	White	
935	Cliff creek/Green river	3DD.003BB983BE	3DD.003BB994DE	272.5	163	BT	2017	6/14/2019	Green	
836	Walker creek	3DD.003BFC6543	3DD.003BB983ED	272.5	163	BT	2017	6/17/2019	Green	
1225	Willow creek	3DD.003BB992D5	3DD.1BF16084DF	270	146.4	BT	2017	6/18/2019	Green	
424	Beaser wash	3DD.003BF7F442	3DD.003BFC61D0	270.1	146.4	BT	2017	6/18/2019	Green	
1810	Perryette outlet	3D9.1C2D9A2E82	3D9.1C2D9A2E82	270.1	146.4	BT	2017	6/6/2019	Green	240.3
578	Ouray NWR Johnson bottom	3DD.003BC4B799	3DD.003BC4B7A0	275.3	232.2	BT	2017	5/2/2019	Green	262.0
1487	Green RMI 258 side channel	3DD.003BFC5ED8	3DD.003BF7F994	272.5	163	BT	2017	6/5/2019	Green	258.0
2542	Ouray NWR boat ramp	3DD.003D48935B	3DD.003D48A153	268.9	167.2	BT	2017	8/13/2019	Green	262.0
3041	Rainbow Park	3DD.003BB99B5B	3DD.003BB99FB8	275.4	170	BT	2017	8/9/2019	Green	
2752	Green River UT swaseys boat ramp	3DD.003BFC5B3B	3DD.003BFC618E	276.8	190.6	BT	2017	04/18/2019	Green	
19224	Total BT			273.5	173.4					

Number Stocked	Stocking location	Starting PIT Tag Number	Ending PIT Tag Number	Avg. Length (mm)	Avg. Weight (g)	Species	Year Class	Stock Date	Stock River	Stock RMI
129	Ouray NWR	3DD.003D4A7FB1	3DD.003D4A7E27	500	1547	RZ	2017	5/30/2019	Green	262.0
6,665	Ouray NWR	3DD.003D48EBBD	3DD.003D4A7904	370	493.8	RZ	2017	9/30/2019	Green	262.0
1,789	Green River UT	3DD.003D48EA53	3DD.003D4A7D97	376	598.7	RZ	2017	9/18/2019	Green	120.1
8583	Total RZ			373	546.2					