

FY 2016 Scope of Work to Bureau of Reclamation:

**San Juan River Waterfall Endangered Fish Monitoring and Translocation
Fiscal Year 2016 Project Proposal and Estimated Budget for 2016-2020**

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BOR Cooperative Agreement #

UDWR Moab Field Station: R13AC40007

Navajo Nation: R11AP40089

Reporting Dates: 10/1/2015 through 9/30/2016

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Background:

The lower San Juan River is particularly important in the recovery of the Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*) since it contains nursery habitat similar to what is present on the Green and Colorado rivers. Within the past eight years, collections of endangered fishes have been increasing in this section of river. The largest collection of Colorado pikeminnow larvae in 2014 was from Reach 1 (RM10.8) (Farrington et al. 2015) and the largest single collection of razorback sucker larvae in 2015 came from Reach 1 (Farrington et al. 2015). Additionally, there are congregations of spawning adult razorback sucker between RM 18 and 19 (Brian Hines per obs.). In spring of 2006 and 2015, another congregation of adult razorback suckers and possible spawning area was located at river mile 23.4.

In 2003, a new waterfall was created from a shifting river channel at RM 0.5 and has prevented fish from moving from Lake Powell into the river. This would typically be a good thing because it keeps the numerous nonnative fish in Lake Powell from entering the river, but unfortunately it also blocks the native fishes' upstream movements. For instance, Colorado pikeminnow and razorback suckers have been collected during sampling efforts below the waterfall indicating loss of stocked and naturally spawned endangered fish over the waterfall. Most recently, in the spring of 2015, crews sampled below the waterfall on several occasions and encountered numerous endangered fishes. One trip captured four untagged razorback immediately below the waterfall via castnets (Chris Cheek, unpublished data). A second trip deployed submersible and floating PIT tag antennae and detected 338 individual fish, which included 319 razorback sucker, one bonytail, one Colorado pikeminnow, and 19 unidentified tags (Cathcart et al., unpublished data).

The spawning and presence of larval endangered fishes in the lower San Juan River coupled with an impassible waterfall is likely leading to a sink rather than a source for recruitment. Determining endangered fishes abundance below the waterfall would illustrate what is actually being "lost" from the system. And by performing translocations of endangered fishes from below to above the waterfall those "lost" individuals would now have the opportunity to seek out adequate habitat for spawning in the river system.

This work plan proposes the investigation of monitoring and translocation of endangered fishes in the San Juan River below the waterfall in accordance with the Long Range Plan (Element 2, Task 2.3.1.7).

Description of Study Area:

The study area for this project includes the San Juan River immediately downstream of the waterfall near Paiute Farms (RM 0.5).

Objectives

1. Monitor abundance of endangered fishes below the waterfall (three trips).

2. Translocation of all endangered fishes captured below the waterfall to the San Juan River at Mexican Hat (RM 52.8).

Methods/Approach:

Monitoring and collection of endangered fishes for translocation will occur immediately downstream of the Paiute Farms waterfall (RM 0.5) during three separate events in March and April. Initial sampling will rely on submersible PIT tag antennas to indicate seasonal congregation of endangered fish, specifically razorback suckers. Submersible PIT antennas will also be used to increase resights and evaluate abundance and movement of tagged fish in the area.

Endangered fish will be captured using electrofishing boats, trammel nets, seine nets, hoop nets and/or fyke nets and will be identified, enumerated, measured to the nearest millimeter (mm) for total and standard length, weighed to the nearest gram and scanned for a PIT tag. If a PIT tag is not present, one will be inserted. General condition of the fish will be recorded in addition to any parasites or abnormalities. These fish will then be moved via stocking truck to an upstream river location (Mexican Hat, RM 52.8) where they will be returned to the mainstem of the San Juan River.

Nonnative fish collected will be identified and enumerated but not netted or measured unless time allows.

General water quality parameters (temperature, conductivity, secchi depth, and dissolved oxygen) will be recorded at both the capture site (RM 0.5) and translocation site (RM 52.8).

Costs for other cooperating agencies that may provide personnel and equipment as needed are included in this budget.

Products/Schedule:

A draft report for the San Juan River Waterfall Endangered Fish Monitoring and Translocation project will be prepared and distributed to the San Juan River Biology Committee for review by 31 March 2017 for 2016 field work completed. Upon receipt of written comments, that report will be finalized and forwarded to members of the San Juan River Biology Committee 1 June 2017. Electronic copies of the field and collection data will be transferred to the San Juan River database manager following the successful protocol previously employed.

Literature Cited:

Farrington, M. A., R. K. Dudley, J. L. Kennedy, S. P. Platania, G. C. White. 2015. Colorado pikeminnow and razorback sucker larval fish survey in the San Juan River during 2014. Draft report to the San Juan River Basin Recovery Implementation Program. U.S. Fish and Wildlife Service, Albuquerque NM.

**San Juan River Waterfall Endangered Fish Monitoring and Translocation
Fiscal Year 2016 -2020 Project Budget
BOR Cooperative Agreement with UDWR: R13AC40007**

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FY 2016 Costs for UDWR- Moab

San Juan Waterfall Monitoring and Translocation
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Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$33.71	100	\$3,371
Biologist	\$30.76	380	\$11,689
Technician	\$16.77	180	\$3,019
		subtotal	\$18,078

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (2 trucks for 3% of total fleet costs)	\$40,800.00	0.030	\$1,224
Food (5 people, 4 days, 3 trips)	\$30.00	60	\$1,800
		subtotal	\$3,024

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$1,000
Sampling gear repair/replacement:			\$2,500
Boating gear repair/replacement:			\$1,500
Fuel for motors/generators	\$4.00	45	\$180
		subtotal	\$5,180

Total Expenses	\$26,282
Administrative Overhead (17% on all personnel services)	\$3,073
UDWR-Moab Total	\$29,355

Funding for Participating Agencies:

Navajo Nation	\$4,251
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Grand Total FY 2016	\$33,606
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^a The State of Utah motorpool vehicles cost approximately \$6,800/year/vehicle (includes fleet rental, mileage, and gas), which is based on the average annual cost for all trucks used in our program.

^b Includes, but is not limited to, tents, sleeping pads, toilet system, cookware, stoves, propane, charcoal, satellite phone and service, drybags, coolers, first aid supplies.

^c Includes, but is not limited to dip nets, tags, tagging equipment, electrofishing units, electrofishing wiring, anodes, cathodes, generators, nets, data loggers, etc...

^d Includes, but is not limited to, raft repair/replacement, oars, oar hardware, raft frame repair, dry boxes, motor repair, straps, etc...

^{b,c,d} Estimated costs are based on actual costs from previous years plus an estimated 3% cost of living increase each year following.

Under the heading “Funding for Participating Agencies.” Estimated costs for participation of the Navajo Nation Department of Fish and Wildlife in FY 2016. BOR Cooperative Agreement Number with Navajo Nation: R11AP40089

Navajo Nation Budget for Assisting UTDNR Razorback Sucker Translocation at San Juan River Waterfall

Personnel/Labor Costs (Salary + Benefits)

Fish Biologist – 9 days @ \$163.54/day \$ 1471.86
(1 person x 3 days x 3 trips)

Sub-Total \$1471.86

Fringe Benefits X 42.48% \$ 625.24

Total Personnel/Labor **\$ 2,097.11**

Travel (Vehicle shuttling)

Vehicle Lease/Maintenance & Gasoline
\$15.13/day X 9 days = \$136.17 + 3 x 360 miles X .30/mile=\$324 \$ 460.17
(360 miles round trip from Fruitland, NM to
Waterfall x 3 trips)

Total Travel/Per Diem **\$ 460.17**

Sub-total with 3% added for inflation \$ 473.97

Equipment

Equipment Maintenance, Repair, & Replacement
(e.g. Oxygen tanks, oxygen, regulators, aerators, agitators, gauges, trailer maintenance, trailer tires, dip nets,
etc.)

\$ 1,000

Total Equipment **\$ 1,000**

Sub-total with 3% added for inflation \$ 1,030

Navajo Nation Fish and Wildlife Total **\$3,601.13**

Navajo Fish and Wildlife Administrative Overhead (18.05%) **\$649.99**

Navajo Nation Total **\$4,251.07**