

Fiscal Year 2017
Draft Scope of Work to Conduct
2016 San Juan River Nonnative Fish Control Program
Data and Results Assessment Workshop

Background

Since implementation of annual intensive nonnative fish removal in 2000, the structure of the fish community in the San Juan River has changed substantially (Franssen et al. 2014a). On an annual basis, Colorado Pikeminnow and Razorback Sucker densities (i.e., CPUE) have increased over time, nonnative Common Carp densities have decreased, and Channel Catfish densities have decreased but only in upper reaches of the river (Franssen et al. 2014a, Franssen et al. 2014b). However, the relative contribution of nonnative fish removal via electrofishing, other management actions and environmental factors in driving these changes is unclear. For example, establishing a causal linkage between nonnative fish removal or other management actions (e.g., flow manipulation, habitat restoration) and changes in endangered fish densities is difficult due to the heavily augmented nature of these populations. Conversely, temporal variation (or the lack of) in the densities of nonnative fishes following removal efforts are potentially more directly related, but this variation is also not exempt from other environmental factors (e.g., flow variation and reduced immigration). Given the spatial and temporal inconsistencies of the previous nonnative fish removal program as well as the multiple biotic and abiotic factors contributing to temporal variation in densities of fishes, it is not surprising effects of this management action have been difficult to elucidate.

Based on annual population estimates of Channel Catfish (Duran 2015 and Hines 2015), it is readily apparent the level of nonnative fish removal effort previously put forth will likely not suppress recruitment enough to induce system-wide population decline of this species. Nonetheless, removing individual Channel Catfish from the river by definition lowers their densities, which has the potential to directly impact endangered fishes through reduced competition or predation as well as indirectly through deleterious effects of electrofishing on native fishes. Yet, these potential direct (or indirect) effects of the San Juan River's nonnative fish removal program has been difficult to assess due to the complications mentioned above. Therefore, the nonnative fish removal efforts was redesigned to evaluate by what factor and for how long Channel Catfish densities were lowered and the responses of native fish densities to electrofishing and nonnative fish removal. Continued implementation and evaluation of a more structured nonnative fish removal design should provide the San Juan River Basin Recovery and Implementation Program with a clearer scientific evaluation of the effects of the nonnative removal program on native and nonnative fishes in the San Juan River.

Relevant Long Range Plan Tasks

Task 3.1.1.5 Organize and conduct workshops, as necessary, to develop a comprehensive non-native species management plan, including measurable river wide objective to determine effects of removal effort on native and nonnative fishes.

Study Area

The experimental design will be conducted in geomorphic reaches 5, 4, 3, and 2, from Shiprock Bridge, NM (RM 147.9) to Mexican Hat, UT (RM 52).

Objectives

1. Assess Channel Catfish CPUE and size distributions within removal reaches over time using nonnative fish removal data.

2. Compare Channel Catfish, Razorback Sucker, and Colorado Pikeminnow CPUE between control and treatment reaches using sub-adult and adult fish community monitoring, and nonnative fish removal data.
3. Compare Channel Catfish size distributions between control and removal reaches using sub-adult and adult fish community monitoring, and nonnative fish removal data.
4. Quantify movement of tagged Channel Catfish among treatment and control reaches over the summer.

Methods

The proposed nonnative fish removal design will be used to address questions about the ability of electrofishing to affect CPUE and size structures of Channel Catfish, and alter the densities of endangered fishes.

Due to the disparate removal efforts between the upper and lower sections of the river (i.e., 20 vs 8 passes respectively), we will analyze the two reaches separately. Below we include the primary questions we will address, data sets needed for analyses, and the general structure of statistical analyses that will be applied to the upper and lower reaches. Other potential covariates that may affect sampling efficiency can be included if deemed necessary (e.g., secchi depth, stream discharge at sampling, etc.).

In all models, non-significant ($\alpha=0.10$) interactions will be sequentially removed until all/any remaining interactions are significant. If any models have significant terms, post hoc tests can be conducted to determine which factor levels differ.

Products

Prior to the workshop the results of analyses will be summarized and distributed to workshop participants. Workshop discussion and deliberations will be summarized and distributed to SJRIP participants.

Estimated FY-16 Budget

The total FY-17 budget for the workshop is estimated to be **\$20,000**.

Literature Cited

- Duran, B.R. 2015. Endangered fish monitoring and nonnative species monitoring and control in the upper/middle San Juan River: 2014. Final report to the San Juan River Basin Recovery Implementation Program. Albuquerque, New Mexico.
- Franssen, N.R., S.L. Durst, K.B. Gido, D.W. Ryden, V. Lamarra, and D.L. Propst. 2014a. Long-term dynamics of large-bodied fishes assessed from spatially intensive monitoring of a managed desert river. *River Research and Applications* doi: 10.1002/rra.2855
- Franssen, N.R., J.E. Davis, D. Ryden and K.B. Gido. 2014b. Fish community responses to mechanical removal of nonnative fishes in a large southwestern river. *Fisheries* 39:352–363.
- Hines, B. 2015. Endangered fish monitoring and nonnative fish control in the lower San Juan River 2014. Final report to the San Juan River Basin Recovery Implementation Program. Albuquerque, New Mexico.

FY 2017 Reclamation Program Management

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Relationship to SJRIP: Supports Program goals and management by supporting approved activities

Study Goals, Objectives, and End Product: Program Management funds support Reclamation staff involved in program management. Funds are used for the administration of funding agreements, including issuing requisitions for program supplies, and the preparation and oversight of work conducted under interagency agreements, cooperative agreements, contracts, and grants. The funds are also used for formation and participation of the technical and peer-review committees, implementation of committee assignments not specifically identified in a scope of work, reporting, and coordination of water operations. Management support for Capital fund projects, including technical oversight, budgeting, preparation of bids and funding agreements is covered in a separate scope of work. Participation in Hydrology and Biology Committee meetings and business is paid for separately by Reclamation with funds unrelated to the SJRIP.

Task Description and Schedule

Task 1: Manage and administer funding for Recovery Program projects related to the Biology Committee activities. Funding Recovery Program projects requires establishment or modification of approximately 20—30 Reclamation funding agreements or contracts each year. Each financial agreement requires multiple steps and activities, including: submission of requests for Federal assistance for Recovery Program-approved projects; working with Recovery Program’s office on funding issues; reviewing and approving (if warranted) project budgets; writing SOWs for RFPs, requesting obligations to cover funding agreement or contract awards; awarding agreements or contract funding to recipients; maintaining agreement and contract filing system including agreement instruments, invoices, and accruals; reviewing and tracking budgets; participating in audits; reviewing and approving invoices; performing periodic site visits to monitor project performance and progress; filing advanced procurement reports; organizing and participating on TPECs; drafting requests for proposals (RFPs); evaluating proposals and awarding contracts; performing agreement closeouts; answering agreement inquiries from auditors, assistance recipients, and the Recovery Program; recording project performance and status of deliverables; and filing recipient performance reports.

Deliverables/Due Dates: Requests from the Recovery Program for funding are processed as they are received. Other deadlines for committee activities are set by the Recovery Program participants during the development of the annual workplan.

Budget FY17

Task 1: Biology Committee Annual Funding Administration

A) Labor

Position	Salary total/hr	No. persons	Total Hours	Total cost
Reclamation Contract Manager	\$120.00	1	20	\$2,400.00
Biology Committee Technical Representation for Contracts and Agreements*	\$90.00	1	700	\$63,000.00
Lead Contract Officer	\$120.00	1	80	\$9,600.00
Contract Specialist	\$70.00	1	1000	\$70,000.00
Contract and agreement Auditor	\$120.00	1	100	\$12,000.00
Agreement specialist	\$55.00	2	1000	\$55,000.00
Total				\$212,000.00

* Funding for Reclamation to participate in the Biology Committee is funded by Reclamation and not the SJRIP.

B) Travel

Position	Destination	Purpose	Days	Lodging per day/total	Per diem per day/total	Other*	Airfare total	Total
Reclamation Technical representative	Farmington, Durango, or Albuquerque	Contract support for CC meetings, program funding meetings	3 trips @ 2 days/trip	\$100/\$600	\$50/\$300	\$400	\$2,500	\$3,800.00
Reclamation Technical representative	Farmington	Project evaluation or field trips	2 trips @ 6 days/trip	\$100/600	\$50/\$300	\$400	\$2,000	\$3,300.00

Reclamation Technical representative	Boise, ID; Kennewick, WA; various	Contract administration with suppliers	2 trips @ 3 days/trip	\$100/\$300	\$50/\$300	\$400	\$1,000	\$2000.00
Lead agreement officer	Farmington, Durango	CC/BC mtg., or contract admin	1 trips @ 2 days	\$100/\$200	\$50/\$200	\$100	\$2,000	\$1,500.00
Lead contract officer	Various locations	Contract Admin	1 trip @ 2 days	\$125	\$65/\$130	\$100	\$300	\$655.00
Total								\$11,255.00

*Taxi \$20; Parking \$10; Rental car \$100/trip

**Budget Summary
FY-2017**

Total labor	\$212,000.00
Total travel	\$11,255.00
Grand total	\$223,255.00¹

¹ This total budget represents a 0% increase over the FY2016 Budget.