

**RECOVERY PROGRAM  
FY 2020-2021 SCOPE OF WORK for:**

Recovery Program Project Number: 123d

Walleye control on the lower Green and Colorado Rivers

Reclamation Agreement number: R19AP00059  
Reclamation Agreement term: Oct. 1, 2019 – Sept. 30, 2024

Note: Recovery Program FY20-21 scopes of work are drafted in May 2019. They often are revised before final Program approval and may subsequently be revised again in response to changing Program needs. Program participants also recognize the need and allow for some flexibility in scopes of work to accommodate new information (especially in nonnative fish management projects) and changing hydrological conditions.

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Category:

- Ongoing project  
 Ongoing-revised project  
 Requested new project  
 Unsolicited proposal

Expected Funding Source:

- Annual funds  
 Capital funds  
 Other *[explain]*

I. Title of Proposal: Walleye control on the lower Green and Colorado Rivers

II. Relationship to RIPRAP:

GREEN RIVER ACTION PLAN: MAINSTEM

III.A.4.d. Reduce negative impacts to endangered fishes from sportfish management activities - walleye in the middle and lower Green River

COLORADO RIVER ACTION PLAN: MAINSTEM

III.A.8. Reduce negative impacts to endangered fishes from sportfish management activities – walleye in the Colorado River

III. Study Background/Rationale and Hypotheses:

The Upper Colorado River Endangered Fish Recovery Program has determined that control of nonnative fish in the upper Colorado River Basin is essential to the recovery of the four endangered fish species: Colorado pikeminnow, razorback sucker, humpback chub, and bonytail. Walleye are a large bodied predatory sportfish native to waters east of the Continental Divide. This species was introduced into a reservoir in the Green River Sub-basin in the 1950s. By the early 1960s walleye had been detected within the Green and Colorado Rivers, however encounters remained infrequent through the mid 2000's. Between 2008 and 2013, encounters tripled within both the lower Green and Colorado Rivers. Researchers have documented walleye predation on both pikeminnow and bonytail in recent years. Additionally, because walleye fill the same ecological niche as the Colorado pikeminnow there is a high probability that these species are in direct competition for limited food resources. Responding to this threat, UDWR-Moab initiated a targeted walleye removal effort in 2014 in the lower Green River. In May of 2014 large numbers of walleye were removed from a 31-mile section of the

lower Green River between Tusher Diversion and Ruby Ranch (RM 128.0-97.0). This 31-mile sub-reach remains the focus of walleye removal efforts on the lower Green River. UDWR is collecting data through these removal efforts we hope will increase our understanding of temporal and spatial variations in habitat use and factors affecting this species' vulnerability to exploitation by electrofishing. Targeted removal efforts will continue on both the lower Green and Colorado Rivers. Future effort will be guided by the previous years' findings. When possible, effort will be combined with sampling under Project #128 (Abundance Estimates for Colorado Pikeminnow in the Green River) to maximize efficiency and reduce impacts on sympatric native fish populations.

#### IV. Study Goals, Objectives, End Product(s):

Goal: Control and monitor abundance of walleye in the Green River between Tusher Diversion and Ruby Ranch and in the Colorado River between lower Westwater Canyon and the Potash boat ramp.

Objectives:

1. Remove walleye in the lower Green River from Tusher Diversion (RM 128.0) to Ruby Ranch (RM 97.0) and on the lower Colorado River from lower Westwater Canyon (RM 116) to Potash (RM 47.2).
2. Compile walleye encounter and electrofishing effort data from the entire Green River sub-basin, analyze and draft a basin wide single species annual report.

End Products: The Walleye Management Report is the annual end product for Project 123d. This single species management report compiles walleye encounter information and effort data for all UCREFRP projects on the Colorado, Green, Yampa, White, and Duchesne rivers. It provides summary statistics useful in the continuing management of this invasive species on a landscape scale, including: total CPUE, CPUE by river mile, length frequency histograms, total catch numbers, and estimates of spawning periods and locations. Data from past years will be included for relevant metrics to provide background and demonstrate trends.

#### V. Study Area:

The lower Green River between Tusher Diversion and Ruby Ranch (RM 128.0-97.0), and the lower Colorado River between lower Westwater Canyon and Potash (RM 116 -47.2).

#### VI. Study Methods/Approach:

Temporarily reducing riverine nonnative fish populations appears viable under certain environmental conditions but some species can easily reverse these reductions in population abundance and return to pre-removal abundances under favorable environmental conditions (Breton et al. 2014; Zelasko et al. 2015). Therefore, mechanical removal efforts will attempt to reach eradication of nonnative fish populations in the river. However, recent synthesis reports investigating effectiveness of in-river removal efforts for species such as northern pike and smallmouth bass determined that reducing in-river populations of these two species would not be successful unless in-river reproduction and reservoir escapement were controlled (Breton et al. 2014; Zelasko et al. 2015). Therefore, mechanical removal efforts will continue to temporarily suppress riverine populations, and will focus on reducing in-river reproduction when feasible. Simultaneously, Program partners will work on other means to reduce in-river reproduction and reservoir escapement, in order to make mechanical removal more effective and to attempt to reach complete eradication of riverine populations.

Walleye will be removed by electrofishing. Boat or raft mounted electrofishers will be used depending on flows and location of sampling. Effort will be focused on high-value walleye habitat on the Green River between Tusher Diversion and Ruby Ranch (RM 128.0-97.0) and on the Colorado River between lower Westwater Canyon and Potash (RM 116-47.2). Removal effort will vary by year on the Green River. During years when sampling for Project #128 occurs, effort will be combined when possible to maximize efficiency and reduce effects on native fish. During off years for Project #128, effort will be increased if catch rates warrant further exploitation. Sampling effort allocation will be modified in location and timing to maximize walleye removal. Spawning condition and stomach contents of all walleye will be noted.

Data Analysis: Walleye total catch-per-unit-effort (CPUE), CPUE by river mile and length frequency histograms will be calculated. Data from past years of sampling will be included for relevant comparisons and to demonstrate trends.

Fish Handling and Disposal: All other centrarchids (green sunfish, bluegill, black crappie, smallmouth bass and largemouth bass), northern pike and white sucker encountered will be removed. Any nonnative species of special concern such as grass carp or burbot which are encountered will be removed and the appropriate state Fish and Game agencies will be contacted. Walleye will be scanned for PIT tags and checked for sex reproductive condition. These fish will then either be collected for consumption or disposed of in the main river channel. Any Colorado pikeminnow, humpback chub or bonytail captured will be scanned for a PIT tag, tagged if needed, weighed (g), measured TL (mm), and released alive. Due to the large number of razorback sucker encountered in this reach, field crews will only net and process this species if time allows. Endangered fish data will then be reported to appropriate principal investigators.

VII. Task Description and Schedule:

Task 1. Removal efforts (UDWR Moab; February-May, October-December).

Task 2. Data entry, analysis, and reporting – October/November

Task	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
1	X	X	X		X	X	X	X				
2	X	X	X									

VIII. Deliverables, Due Dates, and Budget by Fiscal Year:

	<b>Deliverable</b>	<b>Due Date</b>
FY 2020	Annual Report	November 2020
FY 2021	Annual Report	November 2021
FY 2022	Annual Report	November 2022
FY 2023	Annual Report	November 2023
FY 2024	Annual Report	November 2024

IX. Budget Summary:

	<b>UDWR- Moab</b>
FY 2020	\$53,697
FY 2021	\$54,771
FY 2022	\$55,866
FY 2023	\$56,983
FY 2024	\$58,123
<b>TOTAL</b>	<b>\$279,440</b>

X. Reviewers:

XI. References: