

# UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

## FY 2024-25 SCOPE OF WORK

### Title

Green River Basin Fish and Wildlife Conservation Office Implementation of Recovery Activities

### Bureau of Reclamation Agreement Number

New

### Reclamation Agreement Term

October 1, 2023 – September 30, 2028

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*Note: Recovery Program scopes of work are drafted in May and often are revised before final Program approval and may subsequently be revised again in response to changing Program needs. Program participants recognize the need and allow for flexibility in scopes of work to accommodate new information and changing hydrological conditions.*

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### Lead Agency

U.S. Fish and Wildlife Service Green River Basin FWCO

### Principal Investigator

Chris Smith

U.S. Fish and Wildlife Service, Green River Basin FWCO

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### Category:

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

### Expected Funding Source:

- Annual funds
- Capital funds
- Other *[explain]*

### Station Abstract

The Green River Basin FWCO will implement many recovery activities to support listed fishes, including monitoring listed fish populations, removing nonnative species, managing wetland habitats, and conducting outreach. Permanent staff will participate in all covered recovery activities as well as non-project specific tasks such as managing seasonal employees, administering budgets, completing trainings, and aiding other offices as needs arise.

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Last updated: 7/9/2023 3:36 PM

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### Activities to be Implemented

The Green River Basin FWCO will assist with or directly implement the following activities which are outlined in the Recovery Program 2023 RIPRAP and 2024-25 workplan.

- A. Plan, manage, and implement projects through permanent staff and fixed costs;
- B. Coordinate, plan and implement outreach activities;
- C. Monitor adult Colorado pikeminnow abundance in the Green River subbasin;
- D. Detect larval razorback sucker emergence and drift in the Green River;
- E. Manage wetland habitats in the Green River to support young razorback sucker;
- F. Mechanically remove smallmouth bass in the Green, Yampa, and White rivers;
- G. Mechanically remove northern pike in the Yampa River;
- H. Monitor YOY Colorado pikeminnow densities and collect broodstock; and
- I. Monitor endangered fishes via submersible antennas.

### Staffing

The Green River Basin (GRB) FWCO operates with a staff of five permanent employees to effectively oversee, plan, perform, and report the activities listed above.

In addition, the GRB FWCO requires approximately eight seasonal staff each year to perform field work for the Recovery Program. Typically, seasonal staff are needed at various levels from March to October. During years when Project 128 is conducted, GRB FWCO will hire approximately four Small Craft Operators and four Biological Science Technicians to perform field work. When Project 128 is not conducted, a total of six seasonal employees will be hired. Starting in 2024, four of these seasonal positions will become career seasonal positions, which should help with recruitment and retention issues experienced in recent years. In addition, these career seasonal positions will aid in the completion of early and late season field work and equipment maintenance. Two of these will be 9 month appointments and the other two will be 6 month appointments.

### *Permanent Staff*

The following permanent staff will oversee, plan, perform, and report on the projects described above.

FWCO Project Leader – Oversees operations of the Ouray National Fish Hatchery & Green River Basin FWCO. This position is 33% funded by the Recovery Program.

Administration Officer – Oversees budget, property, and administration of the Ouray National Fish Hatchery & Green River Basin FWCO. This position is 33% funded by the Recovery Program.

Supervisory Biologist – Oversees seasonal workforce for implementation of Recovery Program projects.

Principal Investigator for the Green River component of Colorado pikeminnow abundance monitoring, endangered fish monitoring via submersible antennas, Green River wetland habitat  
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management for young razorback sucker, nonnative fish removal in the Yampa River in Dinosaur NM, and YOY Colorado pikeminnow monitoring and broodstock collection in the middle Green River. Responsible for submission of annual reports for all of the above except Colorado pikeminnow abundance monitoring. This position is 100% funded by the Recovery Program.

Fish Biologist – Principal Investigator for nonnative fish removal in the Yampa River near Craig, Colorado, the White River component of Colorado pikeminnow abundance monitoring, monitoring of larval razorback sucker emergence and drift in the Green River, and nonnative fish removal in the White and Green Rivers. Responsible for submission of annual reports for all of the above except Colorado pikeminnow abundance monitoring. This position is 100% funded by the Recovery Program.

Permanent Fisheries Technician – Fleet and equipment manager responsible for boat, truck, and equipment maintenance. Also assists with field work for implementation of Recovery Program projects. This position is 100% funded by the Recovery Program.

### *Seasonal Staff*

The following seasonal staff will perform the activities described above, including operating watercraft, handling fish, and collecting data.

Career Seasonal Biological Science Technician (9 month) – This individual will serve as a returning, experienced lead biological technician and will be responsible for ensuring quality data collection, correct implementation of field protocols, and will assist with training new seasonal employees. These individuals will be available to start earlier in the spring (prior to the onboarding of the other seasonals) and stay later in the fall (after the other seasonals have expended their 1039 hours) to assist with fieldwork, data collection, and equipment maintenance.

Career Seasonal Small Craft Operator (9 month) – This individual will serve as a returning, experienced lead small craft operator responsible for assisting with equipment preparation, boat operation, river navigation, and training new seasonals. This individual will be available to start earlier in the spring (prior to the onboarding of the other seasonals) and stay later in the fall (after the other seasonals have expended their 1039 hours) to assist with fieldwork, boat operation, and equipment maintenance.

Career Seasonal Biological Science Technician (6 month) – This individual will serve as a returning, experienced lead biological technician and will be responsible for ensuring quality data collection, correct implementation of field protocols, and will assist with training new seasonal employees.

Career Seasonal Small Craft Operator (6 month) – This individual will serve as a returning, experienced lead small craft operator responsible for assisting with equipment preparation and maintenance, boat operation, river navigation, and training new seasonals.

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Small Craft Operators – Primary duty is to operate motorized watercraft in river environments and row inflatable rafts in whitewater environments.

Biological Science Technicians – Primary duty is to handle fish for speciation and enumeration and collect associated data.

### Staff Hours

	<b>Estimated Yearly Hours</b>
<b>Total Hours for Permanent Staff</b>	<b>7,708</b>
Administrative Officer	694
Fish Biologist	2,080
Permanent Fisheries Technician	2,080
Permanent Fisheries Technician OT	80
Project Leader	694
Supervisory Fish Biologist	2,080
<b>Total Hours for Seasonal Staff</b>	<b>11,144</b>
Career Seasonal (9 mo) Biological Science Technician (1)	1,646
CS (9 mo) Biological Science Technician OT	168
Career Seasonal (6 mo) Biological Science Technician (1)	1,134
CS (6 mo) Biological Science Technician OT	152
Career Seasonal (9 mo) Small Craft Operator (1)	1,646
CS (9 mo) Small Craft Operator OT	168
Career Seasonal (6 mo) Small Craft Operator (1)	1,134
CS (6 mo) Small Craft Operator OT	136
Biological Science Technician (2)	2,128
Biological Science Technician OT	280
Small Craft Operator (2)	2,128
Small Craft Operator OT	280
<b>Grand Total</b>	<b>18,852</b>

**ACTIVITY A – Permanent staff and fixed costs associated with implementation of all station activities. (Previously imbedded in Project scopes 110, 115, 125, 128, 158, 164, 167, 169, 123a, 22f, and 98b)**

### Goal

To ensure timely and effective planning, implementation, coordination, and administrative support of Recovery Program activities and adaptive management processes.

### Tasks

1. Coordinate, plan, and implement recovery activities;
2. Collect, process, and submit data;

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3. Analyze, evaluate, and report on recovery activities;
4. Manage budget;
5. Maintain and replace station equipment and fleet; and
6. Attend and provide expertise at Program meetings.
7. Apply for collection and importation permits.

### **Task Descriptions, Deliverables and Schedule:**

#### *Task 1. Coordinate, plan, and implement recovery activities.*

Permanent staff are responsible for all field activity planning and preparation, including scope of work development and modification, acquiring permits from both federal and state agencies, and acquiring landowner access for specific locations. Adequate planning and preparation ensure that work can be safely accomplished in a manner that protects both staff and equipment throughout the field season.

This task includes hiring and training permanent and seasonal staff that are properly equipped to safely engage in activities in remote areas in potentially adverse conditions.

#### *Task 2. Collect, process, and submit data*

Collecting and reporting accurate data is one of the primary products of any field sampling event. Data should be collected and stored in a manner that allows for minimal error inclusion and is managed in accordance with the standard procedures outlined in the appropriate data management plan. The Program recommends using digital data collection tools with customized applications for Program work. Data will be submitted to the Data Manager as soon as possible at the end of each trip or in conjunction with deadlines noted under each Activity below. Staff will work with the Data Manager to resolve any errors before the data is submitted into STReAMS for analysis and reporting.

#### *Task 3. Analyze, evaluate, and report on recovery activities*

Each activity requires reporting to document completion of tasks, biological effects and conditions, and recommendations for adjustments in future years. All specific reports due are outlined in the specific activity sections below.

#### *Task 4. Manage budget*

The GRB FWCO budget is managed to ensure all projects funded by scopes of work are completed with the funding provided. This includes purchasing all necessary materials and equipment in conjunction with the organization's guidance and policy. Task includes developing and administering Interagency Agreements, Cooperative Agreements, and contracts necessary to implement activities for the Recovery Program.

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### *Task 5. Maintain and replace station equipment and fleet*

The GRB FWCO utilizes six rafts, ten Honda generators, six electrofishing units, six 9.9 hp and three 30 hp Honda outboard motors, 4 field computers, and a fleet of eight trucks to implement all station activities. This task describes the replacement schedule and cost of equipment used for all field activities, as well as the fixed monthly fees associated with our fleet of eight trucks. Mileage fees for station fleet are accounted for in the individual activities in which they are accrued.

- Replace (10) generators, and (6) electrofishing units on a 5-year rotation
- Replace rafts, frames, and hard bottom boats as needed
- Replace outboard boat motors on a (5-year) schedule
- Replace field computers as needed
- Replace submersible PIT antennas and components as needed
- Fixed monthly fees for (8) station trucks

### *Task 6. Attend and provide expertise at Program meetings*

The Recovery Program relies on the expertise of field crews to share pertinent information and offer guidance outside of written reports. This includes providing expertise at the Recovery Program's technical and Management [committees](#) as requested or appropriate. Station staff also should attend and participate in adaptive management meetings and workshops (e.g. planning workshops, NNF workgroup, STReAMS or data meetings) to acquire needed training and to share knowledge.

The Recovery Program also relies on partners and stakeholders to review and recommend updates to the RIPRAP and other Program documents as appropriate. Scientific expertise of field crews also provide peer review to ensure technical and scientific integrity of Recovery Program activities (study proposals, project reports, etc.) as requested.

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### Activity A Budget

Expense Category	Year 1	Year 2
Permanent Staff	\$ 403,974.80	\$ 412,898.16
Seasonal Staff	\$ -	\$ -
Materials	\$ 21,696.00	\$ 22,129.92
Equipment	\$ -	\$ 35,127.74
Travel	\$ 1,229.90	\$ 1,247.36
Contracts	\$ -	\$ -
<b>Activity A Total</b>	<b>\$ 426,893.70</b>	<b>\$ 471,403.17</b>

### Generalized Work Schedule

A typical field season for GRB FWCO begins with field work in April, although some hydrologic conditions may warrant work being performed in late March. Early season work, before spring runoff, includes monitoring adult Colorado pikeminnow (3 out of every 5 years), gill-netting and electrofishing removal of northern pike to reduce spawning success in the Yampa River, deploying PIT tag antennas, and preparing wetland infrastructure for use. During spring runoff, work primarily includes monitoring for larval razorback sucker emergence and managing wetland infrastructure to entrain the drifting razorback sucker larvae. Beginning with the descending limb of the hydrograph, work shifts primarily to smallmouth bass removal in the White, Yampa, and Green rivers. This work typically lasts through the summer months into autumn. Throughout the summer, personnel will also monitor water levels in managed wetlands and ensure that adequate water quantity and quality is maintained. In autumn (or when water levels begin to deteriorate), crews will begin draining managed wetlands and returning age-0 razorback sucker to the river. Field season typically ends near the end of October.

Upon completion of field work, principal investigators will ensure data is submitted to the STReAMS database for QA/QC and data sharing with other Recovery Program partners. Principal Investigators will then retrieve data from STReAMS and will complete annual reports of their responsibility, generally presenting this data at the Recovery Program Researcher's Meeting each winter. During the winter, permanent Biological Technicians will ensure equipment and gear is maintained, repaired, and replaced for the next field season. Also, over the winter, permanent staff will complete the hiring process for seasonal staff, rectify budgets, and coordinate with any pertinent landowners for access.

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Table X. Generalized GRB FWCO schedule for implementation of all Activities.

Target species	Activity	Legacy Project(s)	Locations	Staff Permanent Seasonal	J	F	M	A	M	J	J	A	S	O	N	D
All	B – Outreach	NA	All	3 permanent 8 seasonal	X	X			X	X	X	X	X	X		
CPM, RZ	C – CPM Estimates	128	GR Deso-Grey, White R	3 permanent 4 seasonal			X	X	X							
RZ	D – Larval Monitoring	22f	MGR	1 seasonal					X	X	X					
RZ	E– Wetland mgmt.	164	MGR	2 permanent 6 seasonal					X	X	X	X	X	X		
SM	F – Mechanical removal	110	Lwr-Yampa	2 permanent 4 seasonal						X	X					
SM	F – Mechanical removal	115	Lodore Dino	1 permanent 3 seasonal							X		X			
SM	F – Mechanical removal	123a	Dino	2 permanent 4 seasonal						X	X	X	X			
SM	F – Mechanical removal	125	Mid-Yampa	2 seasonal					X	X						
SM	F – Mechanical removal	167	White R	2 permanent 3-4 seasonal					X	X	X					
NP,SM,WS	G – Mechanical removal	98b	Upr-Yampa	2 permanent 3 seasonal				X	X	X	X					
CPM	H – Broodstock collection	158	MGR	1 permanent 6 seasonal									X	X		
RZ	I – Antenna monitoring	169	MGR, YA	1 permanent 2 seasonal				X	X	X	X					



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### **ACTIVITY B - Coordinate, plan, and implement outreach activities.**

#### **Study Principal Investigator**

Shannon Nelson, Outreach Coordinator  
UCREFRP Program Directors Office  
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#### **Activity Principal Investigator**

Chris Smith, Supervisory Biologist  
Email: [christian\\_t\\_smith@fws.gov](mailto:christian_t_smith@fws.gov)

#### **Study Goals**

Providing information and engaging with people about the Recovery Program and the four listed fish species are an essential part of building and maintaining public support to help achieve program recovery goals.

#### **Study Area**

The areas routinely sampled by this office, in addition to Vernal and the surrounding municipalities in the Green River subbasin.

#### **Task Descriptions**

##### *Task 1. Interact with members of the public*

These efforts occur organically while conducting sampling and consist of providing information about the Program, as well as sharing a variety of handouts that can make a lasting positive impression, such as fish-themed stickers and tattoos. This outreach is especially valuable because it can provide first-hand experiences for people who are curious or deeply interested in river ecology and efforts to recover threatened and endangered fishes.

##### *Task 2. Provide photos and videos to the Program Director's Office (PDO)*

GRB FWCO will take photos and videos of interesting field activities to assist the PDO in sharing accomplishments in formal publications and digital media. In addition, photos needed for scientific verification will be acquired. Guidance for submission will be distributed prior to the field season.

##### *Task 3. Razorback in the classroom*

GRB FWCO supports classrooms at Uintah Middle School, Vernal Middle School, and Uintah High School with age-0 razorback sucker and educational materials. The fish are released into the wild at the end of the school year.

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### *Task 4. Participate in community events, festivals, conferences, or guest speaker forums*

GRB FWCO will provide information and education about the Recovery Program and threatened and endangered fish recovery efforts at public events, as coordinated with the Outreach Coordinator.

### *Task 5. Document staff outreach efforts*

Each fall, GRB FWCO will provide a general accounting of Outreach to the PDO to be included in an Outreach annual report to be prepared by the Outreach Coordinator. Compiled documentation of Outreach efforts will help the Program identify and assess gaps, needs and opportunities to guide future outreach efforts toward accomplishing recovery goals. Possible areas include targeting new audiences, developing specific outreach materials, acquiring supplies/equipment, assessing staffing needs, and removing barriers that hinder broader public participation and support.

### **Deliverables**

Provide a list to the PDO outreach coordinator documenting community events, festivals, conferences, guest speaker forums or other outreach activities the office participated in.

- Include a list of outreach encounters, type, date, and estimated number of people contacted during each occasion, including informal encounters. Provide a brief narrative to convey any general observations, successes, or concerns related to public outreach.
- Include a list of recommendations to guide future outreach efforts based on an assessment of current gaps, needs, and opportunities to further program recovery goals.

### **Activity B Budget**

<b>Spending Type</b>	<b>Year 1</b>	<b>Year 2</b>
Perm Staff		
Seas Staff	\$ 0	\$ 0
Materials	\$ 0	\$ 0
Equipment	\$ 0	\$ 0
Travel	\$ 0	\$ 0
Contracts	\$ 0	\$ 0
<b>C Total</b>	<b>\$ 0</b>	<b>\$ 0</b>

### **ACTIVITY C - Colorado pikeminnow abundance estimation in the middle Green River & White River (Project 128)**

#### **Study Principal Investigator**

Kevin R. Bestgen, Principal Investigator-Project Manager

Larval Fish Laboratory

E-mail: [kbestgen@ColoState.edu](mailto:kbestgen@ColoState.edu)

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## Activity Principal Investigator

Chris Smith, Supervisory Biologist

Email: [christian\\_t\\_smith@fws.gov](mailto:christian_t_smith@fws.gov)

## Study Goals

Obtain accurate (unbiased) and reliable (precise) estimates of adult population abundance and survival of Colorado pikeminnow and razorback sucker that occupy the Green River study area.

## Study Area

The Green River subbasin, including the Green River in Desolation and Gray Canyons and the lower White River from Taylor Draw Dam to the Utah State Line.

## Task Descriptions

*Task 1. Complete least three electrofishing passes on the Green River.*

Passes will occur in April, May or June when temperatures and flows are appropriate. Each pass requires 8 days, 3 boats, and 5 people.

*Task 2. Complete least three electrofishing passes on the White River.*

Passes will occur in April, May or June when temperatures and flows are appropriate. Each pass requires 10 days, 2 to 3 boats, and 5 people.

Because of the complexity and short duration of the sampling, and the need to use five relatively autonomous field personnel units to complete this work, a Standard Operating Procedure is followed by field personnel to ensure a consistent sampling approach and timely completion of tasks. We will also have frequent conference calls with team members and field crews to discuss issues and problems. This will also provide an opportunity for each group to report on progress in completing tasks. The Larval Fish Laboratory will be responsible for routine coordination of the study. The PDO will assist in resolution of problems related to timely completion of tasks.

## Deliverables

All data will be submitted to the Data Manager and Study Principal Investigator by July 15.

## Activity C Budget

Spending Type	Year 1	Year 2
Perm Staff		
Seas Staff	\$ 78,106.40	\$ 0
Materials	\$ 8,319.20	\$ 0
Equipment	\$ 0	\$ 0
Travel	\$ 6,028.45	\$ 0
Contracts	\$ 6,325.00	\$ 0

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<b>C Total</b>	<b>\$ 98,779.05</b>	<b>\$</b>
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**ACTIVITY D - Detect larval razorback sucker emergence and drift in the Green River (Project 22f)**

**Study Principal Investigator**

Kevin R. Bestgen, Principal Investigator-Project Manager  
 Larval Fish Laboratory  
 E-mail: [kbestgen@ColoState.edu](mailto:kbestgen@ColoState.edu)

**Activity Principal Investigator**

Chris Smith, Supervisory Biologist  
 Email: [christian\\_t\\_smith@fws.gov](mailto:christian_t_smith@fws.gov)

**Study Goals**

1. Detect timing of reproduction by razorback sucker and determine patterns of presence of larvae and their relative abundance downstream of potential spawning sites in the middle Green River.
2. Aid with monitoring effects of temperature regimes of the Green and Yampa rivers in order to comply with Flaming Gorge flow recommendations.

**Study Area**

The middle Green River between Split Mountain and Ouray.

**Task Descriptions**

*Task 1. Collection of larval and light trap samples from long term sites and floodplains in the middle Green River*

Initiation of sampling is based on water temperature and predictive modeling provided by Principal Investigator at CSU, typically in May and June. This task requires 30 days, 1 person, and 1 truck.

**Deliverables**

1. Delivery of samples to CSU for final identification of light trap and drift net samples.

**Activity D Budget**

<b>Spending Type</b>	<b>Year 1</b>	<b>Year 2</b>
Perm Staff		
Seas Staff	\$ 5,983.39	\$ 9,419.41
Materials	\$ 2,035.86	\$ 2,076.57
Equipment	\$ 0	\$ 0

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Travel	\$ 0	\$ 0
Contracts	\$ 1,000.00	\$ 1,000.00
<b>D Total</b>	<b>\$ 9,019.25</b>	<b>\$ 12,495.98</b>

### **ACTIVITY E – Manage wetland habitats in the Green River to support young razorback sucker (Project 164)**

#### **Principal Investigator**

Chris Smith, Supervisory Biologist, U.S. Fish and Wildlife Service  
Green River Basin FWCO  
Email: [christian\\_t\\_smith@fws.gov](mailto:christian_t_smith@fws.gov)

#### **Study Goals**

Manage wetlands to adequate entrain wild produced larval razorback sucker, support over summer growth, and release to the river.

#### **Study Area**

Middle Green River wetlands between Razorback Bar (RM 311) and the Ouray bridge (RM 248).

#### **Task Descriptions**

*Task 1. Sample flooded wetlands via light trapping during larval RZB drift.*

Initiation of sampling is based on water temperature and predictive modeling provided by Principal Investigator at CSU, typically in May and June. Each sampling event requires 10 days, 1 boat, and 2 people.

*Task 2. Collect data on floodplain connection and manage wetlands for fish entrainment.*

Each sampling event requires 4 days, and 2 people.

*Task 3. Conduct PIT tag antenna monitoring to track survival of stocked bonytail.*

Each sampling event requires 8 days, 1 boat, and 2 people.

*Task 4. Drain managed wetlands and sample all wetlands for fish survival and community composition.*

Each sampling event requires 30 or more days, and up to 7 people.

#### **Deliverables**

1. Annual report – December 2024 and 2025: summarizing presence/absence data for endangered fish in wetlands. The report will also summarize LTSP operations and sites connected under

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each year's hydrologic conditions, as well as describing fish communities in wetlands sampled during the fall.

2. Data submission to database coordinator – November 2024 and 2025

### Activity E Budget

Spending Type	Year 1	Year 2
Perm Staff		
Seas Staff	\$ 39,001.39	\$ 25,007.10
Materials	\$ 4,371.00	\$ 4,458.42
Equipment	\$ 0	\$ 0
Travel	\$ 0	\$ 0
Contracts	\$ 0	\$ 0
<b>E Total</b>	<b>\$ 43,372.39</b>	<b>\$ 29,465.52</b>

### ACTIVITY F – Mechanically remove smallmouth bass in the Green, Yampa, and White rivers (Projects 110,115,123a, 125, 167)

#### Principal Investigators

Chris Smith, Supervisory Biologist

Email: [christian\\_t\\_smith@fws.gov](mailto:christian_t_smith@fws.gov)

Kate Lawry, Fish Biologist

Email: [katherine\\_lawry@fws.gov](mailto:katherine_lawry@fws.gov)

#### Study Goals

The purpose of this study is to implement a control program for smallmouth bass in the Green River subbasin to sufficiently reduce the abundance of smallmouth bass such that predatory and competitive impacts on growth, recruitment, and survival of listed fishes are minimized. Removal will occur in multiple habitats, including Yampa Canyon, the White River below Taylor Draw Dam, and the Green River between Brown's Park and Split Mountain. Effort will be allocated each year based on environmental and ecological conditions. We will evaluate reductions in bass density by comparing catch rates from this study across previous years. Additionally, five one-mile sub-reaches in Yampa Canyon have been established to monitor large-bodied fish composition and determine whether there has been a native fish response to control. Quantitative analysis will include mark-recapture abundance estimation of adult smallmouth bass in the Echo Park to Split Mountain reach of the Green River.

#### Study Areas

- Yampa River within Dinosaur National Monument from Deerlodge Park (RM 46) to Echo Park and the Green River confluence.

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- Green River within Dinosaur National Monument from Lodore Canyon to Split Mountain boat ramp (RM 364.8-319.5).
- Green River within Dinosaur National Monument from Echo Park to Split Mountain boat ramp (RM 344.5-319.5).
- White River from Taylor Draw Dam (RM 104) to the Big Trujillo (BLM) boat launch (RM 87.5) and from the BLM boat ramp (RM 87.5) to the Bonanza bridge (RM 59).

### Task Descriptions

#### *Task 1. (Project 110) Conduct four removal passes for smallmouth bass in Yampa Canyon*

Removal of smallmouth bass will occur after spring runoff until flows recede to unsafe levels. During the fourth pass, crews will monitor the entire fish community in five, one-mile sub-reaches throughout Yampa Canyon. Each pass will require 4 days, 3

#### *Task 2. (Project 115) Assist CSU with sampling in Lodore and Whirlpool Canyons during a smallmouth bass flow spike*

Describe timing, from Flaming Gorge Dam as outlined in Study Plan XX.

#### *Task 3. (Project 123a) Eight removal passes on the Green River from Echo Park to Split Mountain boat ramp.*

We will conduct eight boat electrofishing passes on the Green River from Echo Park to Split Mountain starting in late June or early July and concluding in late August or early September. We will coordinate with UDWR- Moab to conduct a marking pass followed by back-to-back removal passes. Data will be used to generate a mark-recapture abundance estimate. Depending on scheduling needs, either UDWR-Moab or USFWS-Vernal will tag and release as many fish as possible during the first pass. Subsequent removal passes will follow immediately. Each pass will require 3 days of effort, 3 rafts, and 5 people.

#### *Task 4. (Project 125) Provide assistance to CSU during the Yampa River surge as outlined in Study Plan 330.*

We will send 2 electrofishing boats (Jon boats or rafts, depending on flows), and 2 crewmembers to Craig, Colorado to assist Colorado State University (CSU) with bass removal for project 125 on the Yampa River. This effort will be aimed at reducing spawning success, and it will take place prior to and during the bass spawn. CSU will monitor bass captured during routine sampling for signs of spawning readiness and they will time the Yampa River surge accordingly.

#### *Task 5. (Project 167) Seventeen days of smallmouth bass removal below Taylor Draw Dam on the White River.*

Green River Basin FWCO will conduct 17 days of smallmouth bass removal from Taylor Draw Dam (RM 104) to the Big Trujillo (BLM) boat launch (RM 87.5) and two passes (three days of effort per pass) from the BLM boat launch (RM 87.6) to the Bonanza bridge (RM 59) during years when Project FY 2024-25 GR FWCO Scope of Work

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128 (Colorado pikeminnow abundance estimation) is not conducted. During Project 128 years, we will conduct 17 days of smallmouth bass removal from Taylor Draw Dam to the BLM boat launch and 1 pass (three days of effort) from the BLM boat ramp to the Bonanza bridge. Effort will be focused after peak runoff when water temperature exceeds 15 C using 2 to 3 electrofishing rafts and 4 to 5 people. Coordination with CPW will be required for scheduling bass removal days from Taylor Draw Dam to the BLM launch and UDWR Vernal from the BLM launch to the Bonanza bridge.

### Deliverables

- Annual Report summarizing smallmouth bass control in the Green River (December 10, 2024). Data describing combined catch rates, catch rates per reach, and length frequencies will be presented for all years of study within each annual report.
- Data submissions to STReAMS prior to November 10, 2024

### Activity F Budget

Spending Type	Year 1	Year 2
Perm Staff		
Seas Staff	\$ 101,335.21	\$ 119,949.89
Materials	\$ 15,850.92	\$ 16,888.78
Equipment	\$ 0	\$ 0
Travel	\$ 11,325.13	\$ 12,773.18
Contracts	\$ 10,445.00	\$ 14,095.00
<b>F Total</b>	<b>\$ 138,956.26</b>	<b>\$ 163,706.85</b>

### ACTIVITY G – Mechanically remove northern pike in the Yampa River (Project 98b)

#### Principal Investigators

Kate Lawry, Fish Biologist

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Chris Smith, Supervisory Biologist

[christian\\_t\\_smith@fws.gov](mailto:christian_t_smith@fws.gov)

#### Study Goals

The purpose of this study is to implement a control program for northern pike in the Yampa River to sufficiently reduce the abundance of northern pike such that predatory and competitive impacts on growth, recruitment, and survival of native fishes are minimized. Removal will occur in the middle Yampa River between Hayden and Craig, Colorado. Effort will be allocated each year based on environmental and ecological conditions. We will evaluate reductions in pike density by comparing



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catch rates from this study across previous years. Quantitative analysis will include mark-recapture abundance estimation of northern pike once every five years.

### Study Area

Upper Yampa River (upstream and through Craig, CO); river miles 171.5-134.5

### Task Descriptions

*Task 1. April -July: Electrofishing the Yampa River between Hayden and Craig, CO.*

This project focuses on in-river mechanical removal of northern pike. We will perform spawning disruption via electrofishing. The main channel of the Yampa River between Highway 40 Bridge upstream of Hayden, Colorado and the Highway 13 Bridge in Craig, CO will be electrofished by 4 people using hard-bottom electrofishing boats, with effort concentrated in habitats of higher pike density, such as sloughs and flooded backwaters. We will perform approximately 4 electrofishing passes, preferably during the pike spawning period. We will measure response to these efforts via total catch and catch per unit effort. Specific effort amount is contingent on hydrologic conditions and allocated in real-time based on coordination between PIs and the Program Director's Office.

*Task 2. April - May: Gill net large sloughs/backwaters with CSU to block pike spawning habitats.*

This task will also focus on northern pike spawning disruption in backwater habitats. Two people will assist CSU in this effort over 16 to 20 days (160 hours) by setting gill nets in backwaters where pike densities may be high and boat electrofishing efficiency is often limited by factors such as dept, conductivity, or vegetation. Specific effort amount is contingent on hydrologic conditions and allocated in real-time based on coordination between PIs and the Program Director's Office.

### Deliverables

- Data submissions to Streams prior to November 10, 2024.

### Activity G Budget

Spending Type	Year 1	Year 2
Perm Staff		
Seas Staff	\$ 30,675.04	\$ 31,914.05
Materials	\$ 4,050.48	\$ 11,093.85
Equipment	\$ 0	\$ 0
Travel	\$ 6,412.88	\$ 6,541.14
Contracts	\$ 1,600.00	\$ 1,600.00
<b>G Total</b>	<b>\$ 42,738.40</b>	<b>\$ 51,149.04</b>

# UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

## ACTIVITY H – Monitor YOY Colorado Pikeminnow Densities and Collect Broodstock (Project 158)

### Principal Investigator

Chris Smith, Supervisory Biologist

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### Study Goals

Monitor age-0 Colorado pikeminnow in the middle Green River to determine their presence, location, and collect age-0 CPM in early fall that will become broodstock intended to bolster the Green River CPM sub-population in the future.

### Study Area

The study area encompasses the middle Green River from Split Mountain boat ramp (river mile [RM] 319.5) to Sand Wash (RM 215.5).

### Task Description

*Task 1. Collect age-0 Colorado pikeminnow from backwaters in early fall and transfer them to Southwestern Natives Aquatic Resources and Recovery Center where they will be used for broodstock.*

Young-of-year Colorado pikeminnow will be collected in main channel backwater habitats of the middle Green River in September and October and transferred to hatcheries where they will be held as broodstock. Completion of this task will require up to 4 boats, 8 people, and three weeks. If Green River Basin FWCO personnel are limited by seasonal (1,039 hour) appointments expiring, contractors may be hired to complete this task.

### Deliverables

1. Documentation of relative abundance of age-0 CPM in the middle Green River throughout the summer base flow period in relation to experimental Flaming Gorge Dam releases
2. Young-of-year CPM collected in the middle Green River to bolster the upper Colorado River basin CPM broodstock.

### Activity H Budget

Spending Type	Year 1	Year 2
Perm Staff		
Seas Staff	\$ 24,070.61	\$ 21,142.36
Materials	\$ 4,020.32	\$ 4,100.72
Equipment	\$ 0	\$ 0
Travel		

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Contracts	\$ 0	\$ 0
<b>H Total</b>	<b>\$ 28,090.93</b>	<b>\$ 25,243.08</b>

### ACTIVITY I – Monitor razorback sucker via submersible antennas (Project 169)

#### Principal Investigator

Chris Smith, Supervisory Biologist

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#### Study Goals

1. Detect as many endangered fish as possible at Razorback Bar, Cleopatra’s Couch bar, and Echo Park bar.
2. Find other locations where PIT-tag antenna technology can be used to obtain more detections, such as floodplain wetlands and tributary confluences.
3. Assist hatchery managers in determining the efficacy of fish rearing and stocking methods by determining the level of representation of hatchery fish cohorts within single and multi-year antenna datasets.

#### Study Areas

Razorback Bar near Jensen, Utah, Echo Park and Cleopatra’s Couch bars on the Yampa River in Dinosaur National Monument, Colorado, and other locations in the Green, White, and Yampa rivers.

#### Task Description

*Task 1. Document razorback sucker and Colorado pikeminnow associated PIT-tags on or near spawning bars.*

Multiple 40” x 6” submersible antennas will be deployed in riverine habitats in the Green River Basin. Since most of the spawning bars we sample are located within Dinosaur National Monument, we have acquired sampling permits from the National Park Service. We will deploy antennas several weeks before flows begin to rise on Razorback and Echo Park bars (typically late March or early April) to detect spawning razorback sucker. Detection of PIT- tagged Colorado pikeminnow will be attempted once peak flows begin to subside in the Yampa River (typically in early June). We will also deploy submersible antennas at Cleopatra’s Couch bar, which will coincide with an early pass on Project 110, which allows access to this location. The PIAs at Echo Park bar will additionally serve to detect Colorado pikeminnow in the Green-Yampa River confluence vicinity.

#### Deliverables

All detection data will be provided electronically to the Recovery Program STReAMS database for future survival estimates. This project is not intended to estimate razorback sucker survival in and of

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itself, but rather to augment other datasets (ancillary captures through Colorado pikeminnow estimates and nonnative fish removal).

We will also provide results of our findings in the form of an annual report.

**Activity I Budget**

<b>Spending Type</b>	<b>Year 1</b>	<b>Year 2</b>
Perm Staff		
Seas Staff	\$ 25,780.47	\$ 25,007.10
Materials	\$ 1,878.64	\$ 1,771.37
Equipment	\$ 0	\$ 0
Travel	\$ 0	\$ 0
Contracts	\$ 0	\$ 0
<b>I Total</b>	<b>\$ 27,659.11</b>	<b>\$ 26,778.47</b>

**Budget Summary**

<b>Fiscal Year</b>	<b>USBR Funding</b> (includes 3% indirect)
2024	\$ 839,974
2025	\$ 803,649
2026	\$ 811,342
2027	\$ 926,621
2028	\$ 944,730
<b>Total</b>	<b>\$ 4,326,317</b>

### SUMMARY OF PROPOSED COSTS

<b>Name of Servicing Agency:</b>	U.S.F.W.S. Green River Basin Fish and Wildlife Conservation Office
<b>Project Name:</b>	Green River Basin Fish and Wildlife Conservation Office Implementation of Recovery Activities

	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5		TOTAL
	10/1/2023		9/30/2024		10/1/2025		10/1/2026		10/1/2027		
	Through	9/29/2024	Through	9/30/2025	Through	9/30/2026	Through	9/30/2027	Through	9/29/2028	
Enter the BEGINNING dates for each year ----->											
Enter the ENDING dates for each year ----->											
<b>DIRECT LABOR AND FRINGE BENEFIT COSTS:</b>	<b>YEAR 1</b>		<b>YEAR 2</b>		<b>YEAR 3</b>		<b>YEAR 4</b>		<b>YEAR 5</b>		<b>TOTAL</b>
Direct Labor - Hourly	\$	537,499.46	\$	480,421.61	\$	490,030.04	\$	568,002.07	\$	579,362.12	\$ 2,655,315.30
Fringe Benefits - Hourly	\$	171,427.86	\$	164,916.47	\$	168,214.80	\$	186,934.14	\$	190,672.82	\$ 882,166.08
Subtotal of Direct Labor & Fringe Benefits:	\$	<b>708,927.32</b>	\$	<b>645,338.08</b>	\$	<b>658,244.84</b>	\$	<b>754,936.21</b>	\$	<b>770,034.93</b>	\$ <b>3,537,481.39</b>
<b>OTHER DIRECT COSTS:</b>	<b>YEAR 1</b>		<b>YEAR 2</b>		<b>YEAR 3</b>		<b>YEAR 4</b>		<b>YEAR 5</b>		<b>TOTAL</b>
Materials and Supplies	\$	62,222.42	\$	62,519.63	\$	63,770.00	\$	73,597.21	\$	75,069.17	\$ 337,178.43
Travel Costs	\$	24,989.36	\$	20,561.68	\$	20,972.91	\$	26,518.90	\$	27,049.28	\$ 120,092.12
Equipment	\$	-	\$	35,127.74	\$	30,628.34	\$	24,009.81	\$	24,490.01	\$ 114,255.89
Contractors	\$	19,370.00	\$	16,695.00	\$	14,095.00	\$	20,570.00	\$	20,570.00	\$ 91,300.00
Subtotal of Other Direct Costs:	\$	<b>106,581.78</b>	\$	<b>134,904.04</b>	\$	<b>129,466.24</b>	\$	<b>144,695.92</b>	\$	<b>147,178.46</b>	\$ <b>662,826.44</b>
<b>INDIRECT/OVERHEAD COSTS:</b>	<b>YEAR 1</b>		<b>YEAR 2</b>		<b>YEAR 3</b>		<b>YEAR 4</b>		<b>YEAR 5</b>		<b>TOTAL</b>
Subtotal of Labor and Other Direct Costs:	\$	<b>815,509.09</b>	\$	<b>780,242.13</b>	\$	<b>787,711.09</b>	\$	<b>899,632.13</b>	\$	<b>917,213.39</b>	\$ 4,200,307.83
Total dollars exempt from indirect/overhead base:	\$	-	\$	-	\$	-	\$	-	\$	-	\$ -
<Enter Description of Indirect/OH Cost #1>	3.00%	\$ 24,465.27	3.00%	\$ 23,407.26	3.00%	\$ 23,631.33	3.00%	\$ 26,988.96	3.00%	\$ 27,516.40	\$ 126,009.23
Total dollars exempt from indirect/overhead base:	\$	-	\$	-	\$	-	\$	-	\$	-	\$ -
<Enter Description of Indirect/OH Cost #2>	3.00%	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%	\$ -	0.00%	\$ -	\$ -
Subtotal of Indirect/Overhead Costs:	\$	<b>24,465.27</b>	\$	<b>23,407.26</b>	\$	<b>23,631.33</b>	\$	<b>26,988.96</b>	\$	<b>27,516.40</b>	\$ <b>126,009.23</b>
		<b>YEAR 1</b>		<b>YEAR 2</b>		<b>YEAR 3</b>		<b>YEAR 4</b>		<b>YEAR 5</b>	<b>TOTAL</b>
<b>GRAND TOTAL:</b>	\$	<b>839,974.36</b>	\$	<b>803,649.39</b>	\$	<b>811,342.42</b>	\$	<b>926,621.10</b>	\$	<b>944,729.79</b>	\$ <b>4,326,317.07</b>