

**COLORADO RIVER RECOVERY PROGRAM
FY2004 PROPOSED SCOPE-OF-WORK for:
Smallmouth bass control in the middle Green River**

Project No.: 123

Lead Agency: UDWR and USFWS

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Category:

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

Expected Funding Sources:

- Annual funds
- Capital funds
- Other (explain)

I. Title of Proposal:

Smallmouth bass control in the middle Green River

II. Relationship to RIPRAP:

GENERAL RECOVERY PROGRAM SUPPORT ACTION PLAN

- III. Reduce negative impacts of nonnative fishes and sportfish management activities (nonnative and sportfish management).
- III.A. Reduce negative interactions between nonnative and endangered fishes.
- III.A.2. Identify and implement viable active control measures.

GREEN RIVER ACTION PLAN: MAINSTEM

- III. Reduce impacts of nonnative fishes and sportfish management activities (nonnative and sportfish management).
- III.A. Reduce negative impacts to endangered fishes from sportfish management activities.
- III.A.4. Develop and implement control programs for nonnative fishes in river reaches occupied by the endangered fishes to identify required levels of control. Each control activity will be evaluated for effectiveness, and then continued as needed.

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. This determination has been documented specifically for humpback chub in Desolation/Gray canyons in Section 4.3.2 of the Humpback Chub (*Gila cypha*) Recovery Goals (USFWS 2002). The humpback chub recovery goals identify channel catfish as the principle predator of humpback chub in Desolation/Gray canyons. However, in conjunction with recent low flow years, smallmouth bass numbers have been on the rise in both Desolation/Gray canyons (J. Jackson, UDWR, personal communication) and elsewhere in the middle Green River (K. Christopherson, and M. Fuller personal communication). This information resulted in a recommendation from the December 2003 Nonnative Fish Control Workshop (Grand Junction, Colorado) to attempt control of this species in Desolation/Gray canyons.

IV. Study Goals, Objectives, End Product:

Goal: To prevent smallmouth bass population expansion in the Green River.

Objectives:

1. Calculate an annual population estimate of smallmouth bass in the middle Green River.
2. Remove smallmouth bass in the middle Green River including Desolation/Gray Canyons.

V. Study Area

The study area encompasses the middle Green River from Echo Park (RM 344) to Swaseys Rapid (RM 132). The USFWS will remove smallmouth bass from Echo Park (RM 344) to Split Mountain boat ramp (RM 318), a total of 26 miles. UDWR will remove smallmouth bass from Split Mountain boat ramp (RM 318) to Swaseys Rapid (RM 132), a total of 186 river miles.

VI. Study Methods/Approach

Smallmouth bass will be removed primarily by electrofishing. Electrofishing combined with fyke nets and trammel nets will also be used. Sampling crews will conduct removal activities in a manner that minimizes potential negative impacts to endangered fish as a result of electrofishing activities. This includes discontinuing electrofishing when elevated numbers of endangered fish are known to be present. Situations when this is likely to occur will be when Colorado pikeminnow are staging in tributary mouths or backwater habitats prior to spawning, when razorback sucker are on and near the spawning bar, and following recent stocking of endangered fish. Four passes will be conducted beginning approximately two weeks after the spring peak through mid-October. Two electrofishing boats will simultaneously electrofish each side of the river. Only shoreline habitat that is likely to contain smallmouth bass will be electrofished. Fyke nets and trammel nets will be used in smallmouth bass concentration areas such as tributary mouths and large backwaters that also contain elevated numbers of endangered fishes. All smallmouth bass will be marked and released on the first pass and then examined for marks on the second and subsequent passes. Results of the first two passes will aid in focusing efforts for the third and fourth passes, which will be directed at smallmouth bass concentration areas. In addition to removal of smallmouth bass, all northern pike captured during this effort will be removed.

All smallmouth bass will be measured (TL) and the information recorded. Smallmouth bass collected in the first pass will be floy tagged and returned to the river. Smallmouth bass collected in the three subsequent passes (and northern pike collected on all passes) will be examined for a tag and disposed of in accordance with the State of Utah Euthanasia Policy. Recaptures during the second pass will allow the determination of a smallmouth bass population estimate using the Lincoln-Peterson approach. Any endangered fish captured will be scanned for a PIT tag, tagged if needed, weighed (g), measured TL (mm), and released alive.

Nonnative removal and evaluation efforts, which include tagging and marking native, endangered and target nonnative fishes, are also being conducted by other researchers and agencies in other areas of the middle Green River and Yampa River. Therefore,

sampling crews will examine all native, endangered and target nonnative fish for tags or marks and record pertinent information. This information will then be reported to principal investigators as appropriate and included in annual reporting.

VII. Task Description and Schedule

Task 1. Four smallmouth bass collecting passes from Echo Park to Split Mountain boat ramp (USFWS CRFP-Vernal). One mark and three removal passes (July-Oct).

Task 2. Four smallmouth bass collecting passes from Split Mountain boat ramp to Swaseys Rapid (UDWR). One mark and three removal passes (July – Oct).

Task 3. Data entry, analysis, and reporting – October/November

VIII. FY2004 Work

Deliverables/Due Dates

Recovery Program annual progress report: November 2004

Budget:

Task 1. Four smallmouth bass collecting passes from Echo Park to Split Mountain boat ramp (USFWS CRFP-Vernal). One mark and three removal passes.

	Work days	USFWS Cost
Labor		
Biologist (GS-11 \$312/day)	20	6,240
Biologist (GS-9 \$259/day)	20	5,180
Technician (GS-7 \$214/day)	20	4,280
Technician (GS-5 \$151/day)	34	5,134
Leader (\$425/day)	10	4,250
Travel		13,166
Admin. assist		2,000
Equipment ^a		2,300
Task 1 Total		42,550

^a Includes repair and replacement of rafting gear, fyke nets, trammel nets, landing nets, electrofishing hardware and equipment.

Task 2. Four smallmouth bass collecting passes from Split Mountain boat ramp to Swaseys Rapid (UDWR). One mark and three removal passes.

Task	Work days	UDWR Cost
Labor		
Tech (\$180/day)	345	62,100
Biologist (\$315/day)	85	26,775
Leader (\$405/day)	45	18,225
Travel		
Mileage		6,500
Shuttle		1,400
Food		6,600
Gas (motor)		3,000
Supplies ^a		3,500
Equipment ^b	Outboard motor	5,000
Task 2 Total		133,100

^a Includes repair and replacement of fyke nets, trammel nets, landing nets, electrofishing hardware and equipment.

^b Outboard motor needed for electrofishing boat to replace worn out motor purchased in 1995.

Task3. Data management and reporting

Task	UDWR		USFWS	
	Work days	Cost	Work days	Cost
Data Entry				
Tech (\$180/day)	10	1,800		
Biologist (\$315/day)	2	630		
Leader (\$405/day)		0		
Report Prep		0		
Biologist (\$315/day)	10	3,150	Biologist (GS-9 \$259/day) 10	2,450
Leader (\$405/day)	2	810		
Supplies		500		
Task 3 Total		6,890		2,450

Total FY04 – UDWR \$139,990 – USFWS \$45,000

FY2005 Work

Deliverables/Due Dates

Recovery Program annual progress report: November 2005

Budget:

Task 1. Four smallmouth bass collecting passes from Echo Park to Split Mountain boat ramp (USFWS CRFP-Vernal). One mark and three removal passes.

Task	Work Days	Cost
Labor		
Biologist (GS-11 \$312/day)	20	6,240
Biologist (GS-9 \$259/day)	21	5,440
Technician (GS-7 \$214/day)	20	4,280
Technician (GS-5 \$151/day)	40	6,040
Leader	10	4,500
Travel		13,500
Admin. assist		2,100
Equipment ^a		2,500
Task 1 Total		44,600

^a Includes repair and replacement of rafting gear, fyke nets, trammel nets, landing nets, electrofishing hardware and equipment.

Task 2. Four smallmouth bass collecting passes from Split Mountain boat ramp to Swaseys Rapid (UDWR). One mark and three removal passes.

Task	Work days	Cost
Labor		
Tech (\$189/day)	345	65,200
Biologist (\$330/day)	85	28,000
Leader (\$425/day)	45	19,100
Travel		0
Mileage		7,000
Shuttle		1,400
Food		7,000
Gas (motor)		3,000
Supplies ^a		3,500
Equipment		0
		0
Task 2 Total		134,200

Task 3. Data management and reporting

Task	UDWR		USFWS		Cost
	Work days	Cost	Work days		
Data Entry					
Tech (\$189/day)	10	1,900			
Biologist (\$330/day)	2	660			
Leader (\$425/day)		0			
Report Prep		0			
Biologist (\$330/day)	10	3,300	Biologist (GS-9 \$259/day)	10	2,600
Leader (\$425/day)	2	850			
Supplies		500			
		0			
Task 3 Total		7,210			2,600

Total FY05 – UDWR \$141,410 – USFWS \$47,200

IX. Program Budget Summary

	<u>UDWR</u>	<u>USFWS</u>	<u>Total</u>
FY2004 –	\$ 139,990	\$45,000	\$184,990
FY2005 –	\$ 141,410	\$47,200	\$188,610

X. Reviewers

XI. References

Chart, T.E., and L. Lentsch. 2000. Reproduction and recruitment of *Gila* spp. and Colorado pikeminnow (*Ptychocheilus lucius*) in the middle Green River; 1992-1996. Final Report on Upper Colorado River Endangered Fish Recovery Program Project #39. Publication No. 00-18. Utah Division of Wildlife Resources, Salt Lake City, Utah.

Jackson, J.A., and P.V. Badame. 2002. Centrarchid and channel catfish control in the middle and lower Green River; 1997 and 1998. Final Report on Upper Colorado River Endangered Fish Recovery Program Project #59. Publication No. 02-24. Utah Division of Wildlife Resources, Salt Lake City, Utah.

U.S. Fish and Wildlife Service. 2002. Humpback chub (*Gila cypha*) recovery goals: amendment and supplement to the humpback chub recovery plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.