

COLORADO RIVER RECOVERY PROGRAM
Performance Period FY2014-FY2017
Federal Agreement Assistance Number _____

Project No.: 126b

FY2014-15 PROPOSED SCOPE OF WORK (SOW) for:
Colorado River and White River Supplemental lethal removal of smallmouth bass and northern pike

Lead Agencies: Colorado Parks and Wildlife
Submitted by: Sherman Hebein; Lori Martin; Jenn Logan (Leads)
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Date: May 26, 2013

Revised: February 20, 2007; revised 4/30/2007 by Pat Nelson; 10/30/08 by Sherman Hebein; 05/28/09 by Tom Chart; 02/02/2012 by Sherman Hebein; 2/14/2013 by Sherman Hebein; 5/26/2013 by Crockett

Category:

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

Expected Funding Source:

- Annual funds
- Capital funds
- Other (explain)

I. Title of Proposal:

Supplemental lethal removal of smallmouth bass and northern pike in the Colorado River between Silt and Beavertail Mountain with expanded removal above Rifle Creek and in constructed ponds, and smallmouth bass control in the White 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.

Colorado River Action Plan: Mainstem

- III. Reduce negative impacts of nonnative fishes and sportfish management activities.
 - III.A. Develop and implement control programs in reaches of the Colorado River occupied by endangered fishes

Green River Action Plan: White River

- 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.B.2. Preclude new nonnative species introductions, translocations or invasions to preserve native species dominance within critical habitat.

III. Study Background/Rationale and Hypotheses:

Study Background/Rationale:

Colorado River: The USFWS (Burdick 2007, 2011) has previously documented the need for smallmouth bass and northern pike removal in the Colorado River. This study will supplement the USFWS efforts within the same USFWS study area by adding additional removal passes within the smallmouth bass and northern pike concentration areas identified by Burdick (2007 and 2011).

White River: For an in depth discussion of this topic please see SOW 167. Colorado Parks and Wildlife (CPW) has been asked to provide three weeks of assistance to remove smallmouth bass from the White River in support of FWS crews performing SOW 167.

IV. Study Goals, Objectives, End Product:

Study Goals

- 1) To assist the USFWS in reducing the number of smallmouth bass and northern pike in 52.3 river miles between Silt (RM 248.0), Colorado and Beavertail Mountain (RM 195.7) thereby benefiting natives fishes of the Colorado River Basin
- 2) To reduce smallmouth bass numbers in the White River to minimize their potential to affect other fishes.

Study Objectives:

- 1) To remove as many smallmouth bass and northern pike as possible between Silt and Beavertail Mountain from the Colorado River via one full removal pass. An additional 2 days will be allocated for removal in areas identified during the first pass as high concentration areas.
- 2) To locate and remove smallmouth bass and northern pike residing in floodplain gravel pits and ponds that may reconnect to the Colorado River during high water periods
- 3) To remove smallmouth bass from the White River from Taylor Draw Dam (RM 104) downstream to the Utah state line over a ten day period, with effort concentrated in

the approximately 10 miles immediately below Taylor Draw dam where greatest numbers of smallmouth bass have been observed.

End Product:

CPW will follow quality assurance and quality control protocols when organizing the data collected. All of CPW validated data will be provided to the USFWS leads, Tildon Jones and Dale Ryden.

CPW will not perform data analysis for this supplemental project; all data collected will be analyzed by the USFWS.

V. Study Area:

The study area for this supplemental project will focus on:

- 1) the 52.3 mile reach between Silt (RM 248.0) and Beavertail Mountain (RM 195.7) on the Colorado River. Additional removal days will occur in reaches of the highest smallmouth bass and/or northern pike concentration and in ponds and gravel pits. The reach or reaches will be identified during the first pass. Ponds and gravel pits will be sampled by appropriate sampling techniques (electrofishing, gill and fyke nets).
- 2) the White River within Colorado from Taylor Draw Dam (RM 104) downstream to the Utah state line.

VI. Study Methods/Approach:

Colorado River:

Capturing and removing smallmouth bass and northern pike within main channel (shorelines) and backwater habitat (when accessible) will be one focus of this supplemental sampling effort. Incidental contact with Colorado pikeminnow, razorback sucker, and/or bonytail will be handled per the protocol below. This study will occur between August and September. Seven day trips across two weeks will constitute one pass. A minimum of one pass will be completed for smallmouth bass and northern pike removal across the entire section of Silt to Beavertail. An additional 2 days will focus on areas of higher concentration of smallmouth bass and/or northern pike.

Two, two-man electrofishing crews will utilize self-bailing rafts with mounted 15 horsepower motors within each river segment to perform removal sampling in the main channel. Each crew will simultaneously move downstream with ETS electrofishing equipment. One crew will work one side of the river, while the second crew will work the other side. No river reach will be electrofished on consecutive days, to allow for resident native fish to recover and redistribute.

Backwaters (when accessible) and where CPW has obtained permission to sample will also be included within the study. Both crews will sample backwater areas along both sides of the river. Output power will be adjusted within backwaters based upon changes in river conductivity. Additionally, output power will be reduced during the raft approach to the backwater mouth. Both processes will minimize the potential for electrofishing injuries to fish.

Each raft will process fish collected. All smallmouth bass, largemouth bass, northern pike, Colorado pikeminnow, razorback sucker, and bonytail captured will be identified and measured in total length to the nearest millimeter. Endangered fish encountered will also be weighed to the nearest gram, and scanned for the presence of PIT tags. Individuals without PIT tags will be implanted with a new PIT tag following the appropriate protocol; tags will be provided by the USFWS. Capture locations for endangered fish will be recorded to the nearest tenth of a river mile. UTM coordinates associated with capture locations will also be recorded, when possible. All endangered fish captured will be processed and released immediately. All smallmouth bass, largemouth bass, and northern pike collected will be lethally removed.

Additional ponds and gravel pits will be sampled prior to runoff to ensure that overwintering smallmouth bass and northern pike will be removed prior to spawning. Ponds and pits will be sampled with electrofishing and passive equipment over a two week period and all nonnative fish lethally removed. Cleithra and otoliths will be preserved for isotopic analysis. This sampling will be repeated post-runoff to capture nonnative fish that might have entered the waters during runoff.

Incidental contact with other nonnative game fish except salmonid species (including centrarchids, walleye, gizzard shad, grass carp, and yellow perch) will result in lethal removal. Disposal of all the aforementioned fishes will be as follows: following capture, fish will be euthanized in the field and preserved with ice. All dead fish not provided to the Recovery Program will be disposed of in the Mesa County landfill southeast of Grand Junction.

Water conductivity and ETS settings will also be recorded. Electrofishing effort will also be recorded by the two ETS units utilized. All data will be collected on the same forms and per the same guidelines that the USFWS will be following. All data collected by CPW will be provided to the USFWS upon completion of this supplemental study.

White River:

Smallmouth bass will be removed primarily by raft mounted ETS electrofishing units. Two electrofishing rafts will simultaneously electrofish each shoreline of the river. Effort will be focused on shoreline habitat that is likely to contain smallmouth bass. Sampling crews will conduct removal activities in a manner that minimizes potential negative impacts to endangered fish, including discontinuing electrofishing when elevated numbers of endangered fish are known to be present. Electrofishing passes will be conducted from June to early July and will focus on the descending limb of the hydrograph when water temperatures will likely favor smallmouth bass spawning and nesting.

CPW crews will be directed to areas that support significant concentrations of spawning bass. Otoliths may be collected for analysis if so requested by the Recovery Program.

Other nonnative species encountered will be removed as feasible. All endangered fishes captured will be scanned for a PIT tag, tagged if needed, weighed (g), measured TL (mm), and released alive. Endangered fish data will then be reported to appropriate

principal investigators and included in annual reporting. Lethally removed fish will be disposed of in a county landfill.

VII. Task Description and Schedule:

Task 1. Sample Colorado River study area to capture and lethally remove smallmouth bass and northern pike.

Schedule: March, August- September

Task 2. Organize and validate Colorado River data and submit to USFWS.

Schedule: data will be submitted by October 1.

Task 3. Sample White River to capture and lethally remove smallmouth bass.

Schedule: June-July

Task 4. Organize and validate White River data and submit to USFWS.

Schedule: data will be submitted by October 1.

VIII. Deliverables, Due Dates, and Budgets by Fiscal Year

Deliverables and due dates are as described in VII immediately above.

FY-2014 Budget by Task:							
Task 1.							
Labor =							
Three seasonal technicians (Technician I's):				6, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$14.54	
		Hours	Salary	Benefits	Indirect	Positions	
		240	\$3,490	\$562	\$1,181	3	\$15,698
	Lodging:		Nights	Each	Positions	Total	
	5 nights		5	\$83.00	3	\$1,245	\$1,245
	Per diem:		Days	Each	Positions	Total	
	5 days		5	\$51.00	3	\$765	\$765
One seasonal technician (Technician II):				6, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$16.81	
		Hours	Salary	Benefits	Indirect	Positions	
		240	\$4,034	\$650	\$1,366	1	\$6,050
	Lodging:		Nights	Each	Positions	Total	
	5 nights		5	\$83.00	1	\$415	\$415
	Per diem:		Days	Each	Positions	Total	
	5 days		5	\$51.00	1	\$255	\$255
Maintenance of boats and trailers (includes replacement,							
	repair and maintenance of boat and trailer parts:						\$2,834
Generator motor oil and fuel; misc. parts							
						\$950	

					Task 1 Total:	\$28,212	
Task 2.							
Labor =							
One seasonal technician (Technician II):				3, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$16.81	
		Hours	Salary	Benefits	Indirect	Positions	
		120	\$2,017	\$325	\$683	1	\$3,025
					Task 2 Total:		\$3,025
167 add in to 126b							
Task 3.							
Labor =							
Three seasonal technicians (Technician I's):				4, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$14.90	
		Hours	Salary	Benefits	Indirect	Positions	
		160	\$2,384	\$384	\$807	3	\$10,725
	Lodging:		Nights	Each	Positions	Total	
	5 nights		10	\$103.00	3	\$3,090	\$3,090
	Per diem:		Days	Each	Positions	Total	
	5 days		10	\$51.00	3	\$1,530	\$1,530
Maintenance of boats and trailers (includes replacement,							
	repair and maintenance of boat and trailer parts:						
Generator motor oil and fuel; misc. parts							\$670
					Task 3 Total:		\$16,015
Task 4.							
Labor =							
One seasonal technician (Technician I):				2, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$14.90	
		Hours	Salary	Benefits	Indirect	Positions	
		80	\$1,192	\$192	\$404	1	\$1,787
					Task 4 Total:		\$1,787
					TOTAL ALL TASKS:		\$49,039

Deliverables/Due Dates:					2015 Estimated Budget		
FY-2015 Budget by Task:							

Task 1.							
Labor =							
Three seasonal technicians (Technician I's):				6, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$14.90	
		Hours	Salary	Benefits	Indirect	Positions	
		240	\$3,576	\$576	\$1,211	3	\$16,087
	Lodging:		Nights	Each	Positions	Total	
	5 nights		5	\$83.00	3	\$1,245	\$1,245
	Per diem:		Days	Each	Positions	Total	
	5 days		5	\$51.00	3	\$765	\$765
One seasonal technician (Technician II):				6, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$17.23	
		Hours	Salary	Benefits	Indirect	Positions	
		240	\$4,135	\$666	\$1,400	1	\$6,201
	Lodging:		Nights	Each	Positions	Total	
	5 nights		5	\$83.00	1	\$415	\$415
	Per diem:		Days	Each	Positions	Total	
	5 days		5	\$51.00	1	\$255	\$255
Maintenance of boats and trailers (includes replacement,							
	repair and maintenance of boat and trailer parts:						\$2,834
Generator motor oil and fuel; misc. parts							\$950
						Task 1 Total:	\$28,752
Task 2.							
Labor =							
One seasonal technician (Technician II):				3, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$17.23	
		Hours	Salary	Benefits	Indirect	Positions	
		120	\$2,068	\$333	\$700	1	\$3,100
						Task 2 Total:	\$3,100
167 add in to 126b							
Task3.							
Labor =							
Three seasonal technicians (Technician I's):				4, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$15.28	
		Hours	Salary	Benefits	Indirect	Positions	
		160	\$2,445	\$394	\$828	3	\$10,998
	Lodging:		Nights	Each	Positions	Total	
	5 nights		10	\$103.00	3	\$3,090	\$3,090

	Per diem:		Days	Each	Positions	Total	
	5 days		10	\$51.00	3	\$1,530	\$1,530
Maintenance of boats and trailers (includes replacement,							
repair and maintenance of boat and trailer parts:							
Generator motor oil and fuel; misc. parts							\$670
Task 3 Total:							\$16,288
Task 4.							
Labor =							
One seasonal technician (Technician I):				2, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$15.28	
		Hours	Salary	Benefits	Indirect	Positions	
		80	\$1,222	\$197	\$414	1	\$1,833
Task 4 Total:							\$1,833
TOTAL ALL TASKS:							\$49,973

Deliverables/Due Dates:				2016 Estimated Budget			
FY-2016 Budget by Task:							
Task 1.							
Labor =							
Three seasonal technicians (Technician I's):				6, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$15.28	
		Hours	Salary	Benefits	Indirect	Positions	
		240	\$3,667	\$590	\$1,242	3	\$16,497
	Lodging:		Nights	Each	Positions	Total	
	5 nights		5	\$83.00	3	\$1,245	\$1,245
	Per diem:		Days	Each	Positions	Total	
	5 days		5	\$51.00	3	\$765	\$765
One seasonal technician (Technician II):				6, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$17.66	
		Hours	Salary	Benefits	Indirect	Positions	
		240	\$4,238	\$682	\$1,435	1	\$6,356
	Lodging:		Nights	Each	Positions	Total	
	5 nights		5	\$83.00	1	\$415	\$415
	Per diem:		Days	Each	Positions	Total	
	5 days		5	\$51.00	1	\$255	\$255

Maintenance of boats and trailers (includes replacement,							
repair and maintenance of boat and trailer parts:							\$2,834
Generator motor oil and fuel; misc. parts							\$950
Task 1 Total:						\$29,317	
Task 2.							
Labor =							
One seasonal technician (Technician II):				3, 40 hour weeks			
Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$17.66		
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$2,119	\$341	\$717	1	\$3,178	
Task 2 Total:						\$3,178	
167 add in to 126b							
FY-2016 Budget by Task:							
Task 3.							
Labor =							
Three seasonal technicians (Technician I's):				4, 40 hour weeks			
Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$15.66		
	Hours	Salary	Benefits	Indirect	Positions		
	160	\$2,506	\$403	\$848	3	\$11,272	
Lodging:		Nights	Each	Positions	Total		
5 nights		10	\$103.00	3	\$3,090	\$3,090	
Per diem:		Days	Each	Positions	Total		
5 days		10	\$51.00	3	\$1,530	\$1,530	
Maintenance of boats and trailers (includes replacement,							
repair and maintenance of boat and trailer parts:							
Generator motor oil and fuel; misc. parts							
Task 3 Total:						\$16,562	
Task 4.							
Labor =							
One seasonal technician (Technician I):				2, 40 hour weeks			
Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$15.66		
	Hours	Salary	Benefits	Indirect	Positions		
	80	\$1,253	\$202	\$424	1	\$1,879	
Task 4 Total:						\$1,879	
TOTAL ALL TASKS:						\$50,936	

		Hours	Salary	Benefits	Indirect	Positions	
		160	\$2,566	\$413	\$869	3	\$11,544
	Lodging:		Nights	Each	Positions	Total	
	5 nights		10	\$103.00	3	\$3,090	\$3,090
	Per diem:		Days	Each	Positions	Total	
	5 days		10	\$51.00	3	\$1,530	\$1,530
Maintenance of boats and trailers (includes replacement,							
repair and maintenance of boat and trailer parts:							
Generator motor oil and fuel; misc. parts							\$670
Task 3 Total:							\$16,834
Task 4.							
Labor =							
One seasonal technician (Technician I):				2, 40 hour weeks			
	Benefits=	16.10%	Indirect=	29.16%	Salary/hr =	\$16.04	
		Hours	Salary	Benefits	Indirect	Positions	
		80	\$1,283	\$207	\$434	1	\$1,924
Task 4 Total:							\$1,924
		80	\$1,253	\$202	\$424	1	\$1,879
Task 4 Total:							\$1,879
TOTAL ALL TASKS:							\$51,856

IX. Budget Summary:

FY-2014 \$ 49,039
FY-2015 \$ 49,973
FY-2016 \$ 50,936
FY-2017 \$ 51,856

Total: \$201,804

X. Reviewers: CPW: Crockett, Hebein

XI. References:

Burdick, B. D. 2011. Colorado river smallmouth bass removal. Scope of work prepared for the Recovery Implementation Program for the Endangered Fishes of the Upper Colorado River Basin. Recovery Program Project Number 126. U. S. Fish and Wildlife Service, Colorado River Fishery Project, Grand Junction, Colorado.

Burdick, B. D. 2007. Colorado river smallmouth bass removal. Scope of work prepared for the Recovery Implementation Program for the Endangered Fishes of the Upper Colorado River Basin. Recovery Program Project Number 126. U. S. Fish and

Wildlife Service, Colorado River Fishery Project, Grand Junction, Colorado.