COLORADO RIVER RECOVERY PROGRAM Project No.:
FY-2012-2013 PROPOSED SCOPE OF WORK for:

Middle Green River Floodplain Sampling.

Lead Agency: US Fish and Wildlife Service

Submitted by:

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Category:

	Expected Funding Source:
_ Ongoing project	XAnnual funds
_ Ongoing-revised project	_ Capital funds
X Requested new project	_ Other (explain)
_ Unsolicited proposal	

I. Title of Proposal: Middle Green River floodplain sampling.

II. Relationship to RIPRAP:
Green River Action Plan: Mainstem
I.A.3.d.1. Conduct real-time larval razorback and Colorado pikeminnow sampling to guide Flaming Gorge operations.
I.D.1.a. Evaluate survival of young …razorback suckers from floodplains
I.D.1.b. Evaluate recent peak flow studies related to floodplain inundation and entrainment of larval razorback sucker

III. Study Background/Rationale and Hypotheses:
Endangered fish of the Colorado River use wetlands during various times to complete their life history. Although researchers in the Green River system spend considerable time sampling fish populations in the mainstem river, little work is conducted in the wetlands to document endangered fish. Razorback sucker, in particular, use floodplain wetlands throughout their lives, and specifically rely on these habitats during early development from larval to juvenile stages (Modde 1996). Researchers have had little success documenting these life stages for wild-produced fish in recent years (Modde et al.

2001). In order to document recruitment of wild-spawned razorback sucker, wetland habitats need to be sampled. One assumption for razorback sucker recruitment has been that hatchery stocks were not sufficient to produce larval densities needed to "seed" floodplain habitats (Modde 2007). After several years of meeting stocking goals for hatchery razorback sucker, larval production has increased (Bestgen et al. 2011). In the fall of 2011, wild-spawned razorback sucker were documented in two floodplain wetlands following near-record spring flows and flooding (Webber 2011). This confirms that the adult razorback population is sufficient to produce larvae, larvae can be entrained into wetland habitats, and recruitment of larvae to juvenile size is feasible. Now that evidence exists that recruitment is possible, the goal of this project is to continue monitoring wetland habitats for young-of-year razorback sucker and other stages and species of endangered fish such as bonytail. This project will also fulfill some of the monitoring and assessment objectives identified in plans being developed to monitor razorback sucker and to assess flow recommendations for Flaming Gorge.

IV. Study Goals, Objectives, End Product:
Goal: Document endangered fish use of wetlands
Objectives: 1) Sample wetlands in spring to determine overwinter survival of razorback sucker and bonytail in wetlands where they have been documented.
2) Qualitatively describe fish community in wetlands with comparisons between habitats where endangered species occur/do not occur.
3) Sample wetlands in fall to document entrainment and recruitment of razorback sucker.
End product: Annual report indicating presence/absence data for endangered fish in wetlands. Length frequencies of endangered fish found in wetlands will be included, as well as PIT tag information and origin, where available. Attempts will be made to generate a population estimate for bonytail in spring in wetlands where they have been stocked for acclimation (i.e., Johnson Bottom in 2012).
4) Collect water quality information at wetlands sampled each year.

V. Study area: Floodplain wetland habitats in the middle Green River.

VI. Study Methods/Approach:
This project will be conducted and coordinated under the guidance of forthcoming plans for razorback sucker monitoring and the use of a larval trigger for Flaming Gorge flow management. Therefore, this project may be modified based on such guidance. We will select sampling sites based on each year's hydrology and events that occur to allow for flexible sampling plans. For example, in 2012 we will sample Wyasket Lake, Leota 4, and Johnson Bottoms in the spring because last year we documented young of year razorback sucker in Wyasket Lake and Leota 4, and bonytail were stocked in Johnson Bottoms. We potentially will amend which locations will be sampled based on wetlands that connect to the river in spring or other observations that may require special attention (e.g., finding a northern pike source at Thunder Ranch in 2011). However, in fall of 2012 we will sample these same three wetlands to give the best chance possible of documenting survival of razorback sucker and bonytail. We will sample each wetland

with any of the following methods: fyke nets, trammel nets, minnow traps, light traps, electrofishing, or hook and line sampling. The goal will be to document endangered fish and sample as many sites as possible, rather than extensive characterization of any particular site. Any endangered fish captured will be measured, weighed, and PIT tagged if not already tagged, and the location to which it will be released will depend on whether or not we believe the fish can survive through winter in its current location. Nonnative fish community information (species, relative order of abundance) will be gathered in each wetland, and nonnative fish will be euthanized. Temperature and dissolved oxygen loggers will be deployed at these sites to collect water quality information. This information would be summarized and provided to the Program Director's office in the form of an annual report, although significant or unusual findings will be communicated as they occur (e.g., if wild-produced razorback sucker juveniles are found or an alarming amount of nonnative fish of concern are found like the case of northern pike in Thunder Ranch 2011). In the event of more extensive floodplain inundation and wetland development as occurred in 2011, or in cases where significant findings warrant, this scope of work may be expanded to include more sampling, at the discretion of the Biology Committee and Program Director's office. This may require additional field days and personnel beyond what is planned here. Such sampling would again be conducted under the guidance of established monitoring plans.

VII. Task Description and Schedule

Task 1: Sample Wyasket Lake, Leota 4, and Johnson Bottoms.
Task 2: Summarize data and write annual report.
Task 3: Present research findings at Nonnative fish workshop or Researchers Meeting.
Schedule: FY-2012

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

Schedule: FY-2013

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

VIII. FY-2012 Work

- Deliverables/Due Dates Annual Report due November 2012
- Budget

Task 1. Sample Wyasket Lake, Leota 4, and Johnson Bottoms.

Operational Costs	Cost
GS-11 Biologist ($44.25/hr x 240 hrs)	$10,620

GS-8 Fisheries Tech ($37.38/hr x 240 hrs)	$8,971.20
GS-5 Fisheries Tech ($17.45/hr x 240 hrs)	$4,188
Fuel @ $4.00/gal x 5 gal/week x 6 weeks	$120
Oil, motor repairs, net repair supplies, net replacement	$3,000
Temperature-Dissolved Oxygen meters/software	$5,349
GSA truck lease $334/mo/1 truck/4 mo	$1,336
(truck/trip x 100mi/truck x $0.30/mi x 30 trips) Vernal to wetland	$900
Subtotal	$34,484.20

Task 2. Summarize data and report writing, administration costs.

Labor	Cost
GS-9 Administrative Officer ($38.54/hr x 35 hrs)	$1,348.90
GS-11 Biologist ($44.25/hr x 16 hrs)	$708
GS-12 Supervisory Fish Biologist ($49.65/hr x 54 hrs)	$2,681.10
Subtotal	$4,738

Task 3. No cost, expenses for these meetings are covered in other funded work.

FY- 2012 Total = $39,222.20

FY- 2013 Proposed budget:

Task 1. Sample wetlands (to be determined).

Operational Costs	Cost
GS-11 Biologist ($45.54/hr x 240 hrs)	$10,929.60
GS-8 Fisheries Tech ($38.45/hr x 240 hrs)	$9,228
GS-5 Fisheries Tech ($17.45/hr x 240 hrs)	$4,188
Fuel @ $4.00/gal x 5 gal/week x 6 weeks	$120
Oil, motor repairs, net repair supplies, net replacement	$3,000
GSA truck lease $334/mo/1 truck/4 mo	$1,336
(truck/trip x 100mi/truck x $0.30/mi x 30 trips) Vernal to wetland	$900
Subtotal	$29,701.60

Task 2. Summarize data and report writing, administration costs.

Labor	Cost
GS-9 Administrative Officer ($38.54/hr x 35 hrs)	$1,348.90
GS-11 Biologist ($45.54/hr x 16 hrs)	$728.64
GS-12 Supervisory Fish Biologist ($52.69/hr x 54 hrs)	$2,845.26
Subtotal	$4,922.80

Task 3. No cost, expenses for these meetings are covered in other funded work.

FY- 2013 = $34,624.40

IX. Budget Summary:
FY-2012=$39,222.20
FY-2013=$34,624.40

X. Reviewers: Dale Ryden, USFWS Assistant Project Leader

Bestgen, K.R., G. B. Haines, and A. A. Hill. 2011. Synthesis of flood plain wetland information:Timing of razorback sucker preproduction in the Green River, Utah, related to stream flow, water temperature, and flood plain wetland availability. Final Report to the Upper Colorado River Endangered Fish Recovery Program, Denver. Larval Fish Laboratory Contribution 163.

Modde, T. 1996. Juvenile razorback sucker (Xyrauchen texanus) in a managed wetland adjacent to the Green River. Great Basin Naturalist 56:375-376.

Modde, T. 2007. Interim Green River subbasin floodplain management plan. Draft report to the Upper Colorado River Endangered Fish Recovery Program, Denver.

Modde, T., R. T. Muth, and G. B. Haines. 2001. Floodplain Wetland Suitability, Access, and Potential Use by Juvenile Razorback Suckers in the Middle Green River, Utah. Transactions of the American Fisheries Society 130:1095-1105.

Webber, P. A., 2011. Annual Report to the Upper Colorado River Endangered Fish Recovery Program for Project C-6 Baeser Bend.