COLORADO RIVER RECOVERY PROGRAM Project No.: 98b
FY-2014-2015 PROPOSED SCOPE OF WORK

Reclamation Agreement number: R13PG400020
Reclamation Agreement term:

Note: Recovery Program FY14-15 scopes of work are drafted in May 2013. 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.

Upper Yampa River northern pike management and monitoring

Lead Agency: U. S. Fish and Wildlife Service
Colorado River Fishery Project

Submitted by: Aaron Webber
U.S. Fish and Wildlife
Colorado River Fish Project
1380 South 2350 West
Vernal, UT 84078

Phone: (435) 789-4078 ext. 21
FAX: (435) 789-4805

E-Mail: aaron_webber@fws.gov

Date: March 26, 2013; ATK revisions June 17, 2013.

Category	Expected Funding Source
X Ongoing project	X Annual funds
__ Ongoing-revised project	__ Capital Funds
__ Requested project	__ Other
__ Unsolicited proposal	

I. Title of Proposal: Upper Yampa River northern pike management and monitoring

II. Relationship to RIPRAP:

Green River Action Plan: Yampa and Little Snake rivers

- III.A.1.b(1) Remove and translocate northern pike and other sportfishes from Yampa River.
- III.A.1.b(2) Reduce northern pike reproduction in the Yampa River.
- III.A.1.d. Remove smallmouth bass.

III. Study Background/Rationale and Hypotheses

Northern pike *Esox lucius* is an exotic, predatory species that has become established in the Yampa River. Northern pike escaped from Elkhead Reservoir (a reservoir on Elkhead Creek, which is a tributary to the Yampa River near Craig, CO) where they were originally stocked to provide sportfishing. Since escapement, they have established large, reproducing populations in the upper Yampa River (Nesler 1995, Personal communication with John Hawkins, CSU, and Richard Anderson, CDOW). The large populations likely provide a source for continual movement of northern pike into the lower Yampa River and further downstream into the Green River where they coexist with four endangered fishes — Colorado pikeminnow *Ptychocheilus lucius*, razorback sucker *Xyrauchen texanus*, and humpback chub *Gila cypha*, and bonytail *Gila elegans*. Large portions of the lower Yampa River are designated critical habitat for these species. Northern pike provide a significant predatory risk to these endangered fish, especially juveniles and small adults of Colorado pikeminnow and razorback sucker. Additionally, northern pike present a significant predatory risk to other native species in the basin (e.g., flannelmouth sucker *Catostomus latipinnis* and roundtail chub *G. robusta*) that have been considered for listing under the Endangered Species Act in the past (Martinez 1995; Nesler 1995). Northern pike were identified as presenting a significant risk to the endangered fishes by a majority of upper basin researchers in surveys conducted during the late 1980s (Hawkins and Nesler 1991).

The Recovery Program has established an active program to control nonnative fishes in the main rivers of the upper basin to assist in recovery of the endangered fishes found there. To date, the Recovery Program has initiated nonnative reduction efforts for channel catfish, northern pike, and smallmouth bass in the Yampa and Green rivers, and small cyprinids in the Colorado and Green River drainages.

Temporarily reducing the pike population through mechanical means appears to be a viable option for the rivers of the upper basin (Lentsch et al. 1996), although complete eradication is unlikely. A small, non-reproducing population of northern pike in the Gunnison River was reduced with relatively little effort applied at a time when pike were vulnerable (McAda 1997). Initial sampling efforts in the Yampa River suggest that substantial numbers of northern pike can be captured during spring when they enter shallow floodplain habitats for spawning (Nesler 1995; J. Hawkins, personal communication; USFWS unpublished data). Sampling in 2001-2004 yielded a total catch of 2453 northern pike.

IV. Study Goals, Objectives, End Product:

Goal

Improve survival of endangered fish in the Yampa and Green rivers.

Objective

1. Reduce numbers of northern pike, smallmouth bass, and white sucker in the study reach.

End products: Annual reports due November 2014; presentation of results at annual non native fish workshop

V. Study area: Upper Yampa River (upstream from Craig, CO); river miles 171.5-134.5

VI. Study Methods/Approach:

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 using hard-bottom electrofishing boats and rafts. The entire river reaches will be electrofished five times between March and July. Special effort will be made to conduct 2-3 electrofishing passes as early as possible to take advantage of high catch rates for northern pike during their spawn. The remaining passes will be conducted as late as water will allow to attempt to disrupt smallmouth bass spawning activity known to occur in this reach. The effort for two passes will be used at the PI's discretion to target the disruption of spawning for northern pike and smallmouth bass. The entire study area will be divided into two-mile sections that will be sampled individually. All northern pike captured will be measured, floy tagged, and either translocated to the Yampa State Park Headquarters pond or euthanized according to the direction of the Colorado Parks and Wildlife. All smallmouth bass and white sucker will be euthanized. Any endangered fish captured will be identified to species, checked for tags, and length (TL) and weight will be recorded along with GPS coordinates. A sample of northern pike will be taken for the Colorado Parks and Wildlife for their ongoing studies.

All capture and length data on northern pike, smallmouth bass, and other species collected during the sampling effort in the Yampa River will be added to the Recovery Program database. A brief summary report will be produced after sampling is completed and distributed through the Recovery Program's annual reporting process. In addition, results will be presented at the annual nonnative fish workshop.

VII. Task Description and Schedule

1. April - July: Electrofish the Yampa River between Hayden and Craig, CO.
2. October: Consolidate data and provide to CDOW and to the Recovery Program database.
3. November- January: Prepare annual reports. Attend nonnative fish workshop and annual researchers meeting.

VIII. FY-2014Deliverables: Annual Report Nov 2014

IX. FY2014 Budget:

SOW 98b FY2014

Task Activity	Cost
Task 1	
Preparatory Labor/Training/field work	**Cost**
GS-11 Biologist ($45.06/hr x 550 hrs)	$24,783
GS-8 Fisheries Tech Maintenance work ($37.49/hr x 261 hrs)	$9,784.89
3 GS-5 Biological Techs ($16.91/hr x 300 hrs) + ($25.37/hr x 70 hr ot)	$20,546.70
Subtotal	$55,114.59
Travel, Per Diem, Equipment	**Cost**
(2 trucks/trip x 700 mi/truck x $0.31/mi x 5 trips) Vernal to Craig round trip and on the river	$2,170
Boat gas (8 gal gas/boat x $4.00/gal x 2 boats/day x 21 trips)	$1,344
Boat oil (1 qt. Oil/boat x $4.50/qt x 2 boats/day x 21 trips)	$189
Per diem (4 people/day x $123.00/person x 21 days)	$10,332
Equipment and Maintenance (nets, repairs, fish tags, motors, boats, generators, VVPs etc.)	$6,691.82
GSA vehicle lease ($313/mo/2 trucks/5mo)	$3,130
Subtotal	$23,856.82
Tasks 2 and 3	
Data summary, Analysis, report preparation, project presentation, administration	**Cost**
GS-12 Supervisory Fish Biologist ($52.31/hr x 80 hrs)	$4,184.80
GS-11 Fisheries Biologist ($45.06/hr x 448 hrs)	$20,186.88
GS-9 Admin Assist. ($36.89/hr x 116 hrs)	$4,279.24
Supplies (Copies, paper, etc.)	$1,200
Per diem to travel for presentation (1 person/day x $123/person x 2 days/trip x 3 trips)	$738
Travel to give presentations and workshops and meetings (1 truck/trip x 275 mi/truck x $0.31/mi x 3 trips)	$255.75
Subtotal	$30,844.67
Total	$109,816.08

Summary: FY-2014 $109,816.08

FY2015 Budget:

SOW 98b FY2015

Task Activity	Cost
Task 1	
Preparatory Labor/Training/field work	Cost
GS-11 Biologist ($45.96/hr x 550 hrs)	$25,278
GS-8 Fisheries Tech Maintenance work ($38.24/hr x 261 hrs)	$9,980.64
3 GS-5 Biological Techs ($17.25/hr x 300 hrs) + ($25.88/hr x 70 hr ot)	$20,959.80
Subtotal	$56,218.44
Travel, Per Diem, Equipment	Cost
(2 trucks/trip x 700 mi/truck x $0.31/mi x 5 trips) Vernal to Craig round trip and on the river	$2,170
Boat gas (8 gal gas/boat x $4.00/gal x 2 boats/day x 21 trips)	$1,344
Boat oil (1 qt. Oil/boat x $4.50/qt x 2 boats/day x 21 trips)	$189
Per diem (4 people/day x $123.00/person x 21 days)	$10,332
Equipment and Maintenance (nets, repairs, fish tags, motors, boats, generators, VVPs etc.)	$6,691.82
GSA vehicle lease ($313/mo/2 trucks/5mo)	$3,130
Subtotal	$23,856.82
Tasks 2 and 3	
Data summary, Analysis, report preparation, project presentation, administration	Cost
GS-12 Supervisory Fish Biologist ($53.36/hr x 80 hrs)	$4,268.80
GS-11 Fisheries Biologist ($45.96/hr x 448 hrs)	$20,590.08
GS-9 Admin Assist. ($38.65/hr x 116 hrs)	$4,483.40
Supplies (Copies, paper, etc.)	$1,200
Per diem to travel for presentation (1 person/day x $123/person x 2 days/trip x 3 trips)	$738
Travel to give presentations and workshops and meetings (1 truck/trip x 275 mi/truck x $0.31/mi x 3 trips)	$255.75
Subtotal	$31,536.03
Total	$111,611.29

Summary: FY-2015 $111,611.29

FY2016 Budget:

SOW 98b FY2016

Task Activity	Cost
Task 1	
Preparatory Labor/Training/field work	Cost
GS-11 Biologist ($46.88/hr x 550 hrs)	$25,784
GS-8 Fisheries Tech Maintenance work ($39.01/hr x 261 hrs)	$10,181.61
3 GS-5 Biological Techs ($17.60/hr x 300 hrs) + ($26.40/hr x 70 hr ot)	$21,384
Subtotal	$57,349.61
Travel, Per Diem, Equipment	Cost
(2 trucks/trip x 700 mi/truck x $0.31/mi x 5 trips) Vernal to Craig round trip and on the river	$2,170
Boat gas (8 gal gas/boat x $4.00/gal x 2 boats/day x 21 trips)	$1,344
Boat oil (1 qt. Oil/boat x $4.50/qt x 2 boats/day x 21 trips)	$189
Per diem (4 people/day x $123.00/person x 21 days)	$10,332
Equipment and Maintenance (nets, repairs, fish tags, motors, boats, generators, VVPs etc.)	$6,691.82
GSA vehicle lease ($313/mo/2 trucks/5mo)	$3,130
Subtotal	$23,856.82
Tasks 2 and 3	
Data summary, Analysis, report preparation, project presentation, administration	Cost
GS-12 Supervisory Fish Biologist ($54.43/hr x 80 hrs)	$4,354.40
GS-11 Fisheries Biologist ($46.88/hr x 448 hrs)	$21,002.24
GS-9 Admin Assist. ($39.43/hr x 116 hrs)	$4,573.88
Supplies (Copies, paper, etc.)	$1,200
Per diem to travel for presentation (1 person/day x $123/person x 2 days/trip x 3 trips)	$738
Travel to give presentations and workshops and meetings (1 truck/trip x 275 mi/truck x $0.31/mi x 3 trips)	$255.75
Subtotal	$32,124.27
Total	$113,330.70

Summary: FY-2016 $113,330.70

FY2017 Budget:

SOW 98b FY2017

Task Activity	Cost
Task 1	
Preparatory Labor/Training/field work	Cost
GS-11 Biologist ($47.82/hr x 550 hrs)	$26,301
GS-8 Fisheries Tech Maintenance work ($39.79/hr x 261 hrs)	$10,385.19
3 GS-5 Biological Techs ($17.95/hr x 300 hrs) + ($26.93/hr x 70 hr ot)	$21,810.30
Subtotal	$58,496.49
Travel, Per Diem, Equipment	Cost
(2 trucks/trip x 700 mi/truck x $0.31/mi x 5 trips) Vernal to Craig round trip and on the river	$2,170
Boat gas (8 gal gas/boat x $4.00/gal x 2 boats/day x 21 trips)	$1,344
Boat oil (1 qt. Oil/boat x $4.50/qt x 2 boats/day x 21 trips)	$189
Per diem (4 people/day x $123.00/person x 21 days)	$10,332
Equipment and Maintenance (nets, repairs, fish tags, motors, boats, generators, VVPs etc.)	$6,691.82
GSA vehicle lease ($313/mo/2 trucks/5mo)	$3,130
Subtotal	$23,856.82
Tasks 2 and 3	
Data summary, Analysis, report preparation, project presentation, administration	Cost
GS-13 Project Leader ($63.43/hr x 80 hrs)	$5,074.40
GS-12 Supervisory Fish Biologist ($55.51/hr x 80 hrs)	$4,440.80
GS-11 Fisheries Biologist ($47.82/hr x 448 hrs)	$21,423.36
GS-9 Admin Assist. ($40.22/hr x 116 hrs)	$4,665.52
Supplies (Copies, paper, etc.)	$1,200
Per diem to travel for presentation (1 person/day x $123/person x 2 days/trip x 3 trips)	$738
Travel to give presentations and workshops and meetings (1 truck/trip x 275 mi/truck x $0.31/mi x 3 trips)	$255.75
Subtotal	$32,723.43
Total	$115,076.74

Summary: FY-2017 $115,076.74

FY2018 Budget:

SOW 98b FY2018

Task Activity	Cost
Task 1	
Preparatory Labor/Training/field work	Cost
GS-11 Biologist ($48.77/hr x 550 hrs)	$26,823.50
GS-8 Fisheries Tech Maintenance work ($40.58/hr x 261 hrs)	$10,591.38
3 GS-5 Biological Techs ($18.31/hr x 300 hrs) + ($27.47/hr x 70 hr ot)	$22,247.70
Subtotal	$59,662.58
Travel, Per Diem, Equipment	Cost
(2 trucks/trip x 700 mi/truck x $0.31/mi x 5 trips) Vernal to Craig round trip and on the river	$2,170
Boat gas (8 gal gas/boat x $4.00/gal x 2 boats/day x 21 trips)	$1,344
Boat oil (1 qt. Oil/boat x $4.50/qt x 2 boats/day x 21 trips)	$189
Per diem (4 people/day x $123.00/person x 21 days)	$10,332
Equipment and Maintenance (nets, repairs, fish tags, motors, boats, generators, VVPs etc.)	$6,691.82
GSA vehicle lease ($313/mo/2 trucks/5mo)	$3,130
Subtotal	$23,856.82
Tasks 2 and 3	
Data summary, Analysis, report preparation, project presentation, administration	Cost
GS-12 Supervisory Fish Biologist ($56.62/hr x 80 hrs)	$4,529.60
GS-11 Fisheries Biologist ($48.77/hr x 448 hrs)	$21,848.96
GS-9 Admin Assist. ($41.02/hr x 116 hrs)	$4,758.32
Supplies (Copies, paper, etc.)	$1,200
Per diem to travel for presentation (1 person/day x $123/person x 2 days/trip x 3 trips)	$738
Travel to give presentations and workshops and meetings (1 truck/trip x 275 mi/truck x $0.31/mi x 3 trips)	$255.75
Subtotal	$33,330.63
Total	$116,850.03

Summary: FY-2018 $116,850.03

FY2014-$109,816.08
FY2015-$111,611.29
FY2016-$113,330.70
FY2017-$115,076.74
FY2018-$116,850.03

X. Reviewers: Tildon Jones, U.S. Fish and Wildlife Service

XI. References

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Lentsch, L. D., R. T. Muth, P. D. Thompson, B. G. Hoskins, and T. A. Crowl. 1996. Options for selective control of nonnative fishes in the upper Colorado River basin. Final Report to the Recovery Program for the Endangered Fishes of the Upper Colorado River. Publication 96-14, Utah Division of Wildlife Resources, Salt Lake City, Utah.

Martinez, P. J. 1995. Coldwater Reservoir Ecology. Colorado Division of Wildlife, Federal Aid in Fish and Wildlife Restoration Project F-242R-2, Job Final Report, Fort Collins.

McAda, C. W. 1997. Mechanical removal of northern pike from the Gunnison River, 1995–1996. Final Report to the Recovery Program for the Endangered Fishes of the Upper Colorado River, Project 58. U. S. Fish and Wildlife Service, Grand Junction, Colorado.

Nesler, T.P. 1995. Interactions between endangered fishes and introduced game fishes in the Yampa River, Colorado, 1987-1991. Final Report, Federal Aid Project SE-3. Colorado Division of Wildlife, Fort Collins.