COLORADO RIVER RECOVERY PROGRAM **Project No.: 154**
FY 2009 PROPOSED SCOPE-OF-WORK FOR:
Nonnative fish monitoring and control in the lower Green River and tributaries within the Uintah and Ouray Indian Reservation, Utah.

Lead Agency: Ute Indian Tribe

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Category:
__ Ongoing project
X Ongoing-revised project
_ Requested new project
__ Unsolicited proposal

Expected Funding Sources:
X_ Annual funds
__ Capital funds
X_ Other (In Kind)

I. Title of Proposal:

Nonnative Fish Monitoring and Control in the lower Green River and tributaries within the Uintah and Ouray Indian Reservation, Utah.

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 implemented a control strategy for nonnative fishes and considers predator control essential to the recovery of four endangered Colorado River fishes: Colorado pikeminnow *(Ptychocheilus lucius)*, razorback sucker *(Xyrauchen texanus)*, humpback chub *(Gila cypah)*, and bonytail *(Gila elegans)*.

Since 2000, smallmouth bass *(Micropterus dolomieu*), a non native, invasive predator species, abundance has dramatically increased in the Green River (CRFP, 2003). As a result, a recommendation for smallmouth bass mechanical removal in the Green River and its tributaries was supported in 2004. The ensuing removal activities have added valuable knowledge to smallmouth bass control efforts in large river environments. Furthermore, Haines and Modde (2006) recognized the importance of increasing control efforts at higher levels of exploitation for effective removal of smallmouth bass in the Green River. As a result of this new information, and the associated fiscal and personnel limitations made evident of implementing new exploitation rates, a reallocation of effort to specific concentration areas was employed. Consequently, the control effort in the Green River in Desolation and Gray Canyons were reallocated to the Echo Park/Split

Mountain reach. Additionally, the non native fish control effort in the Duchesne River was abandoned in 2004 because of intermittent flows.

In recent history, Desolation Canyon has shown evidence of increased smallmouth bass population densities (Badame and Modde, personal communication, 2007). A realistic potential for re-established smallmouth bass populations or expansion of existing populations merits monitoring and/or control of smallmouth bass in the Green River and its tributaries (Duchesne and White Rivers) from Sand Wash Boat Ramp(RM 215.3) to Swasey's Rapid (RM129.8).

The main objective of this project is to monitor and/or control smallmouth bass populations in the lower Green River and its tributaries within the Uintah and Ouray Indian Reservation. The sampling methods that may be included in this project are continuous raft electro-fishing, backpack electro-fishing, canoe/barge electro-fishing and electric seining.

In 2008, sampling was reinitiated in the Green River (Desolation Canyon) and in the Duchesne River to determine if smallmouth bass catch rates warranted further removal effort. Catch rates of smallmouth bass in Desolation Canyon were found to be relatively low. Catch rates in the Duchesne River were higher than average catch rates in the Green River near their confluence. Removal efforts in 2009 will be focused on the Duchesne River.

IV. Study Goals, Objectives, End Product:

Goal: To monitor and control smallmouth bass in the Duchesne, White and Green Rivers, and their associated tributaries, within the Uintah and Ouray Indian Reservation, and to investigate native fish species community composition within the Duchesne River.

Objectives:

1. Monitor adult and juvenile smallmouth bass to determine extent of control needed in the Duchesne River.

2. Remove smallmouth bass in the Duchesne River from Myton Bridge (RM 42) to the confluence with the Green River (RM 0), within the Uintah and Ouray Reservation.

3. Sample adult and juvenile native fish to determine the native fish composition of the Duchesne River.

Deliverables: An annual report will be submitted to provide information on:

Objective 1 & 2: Determine adult and juvenile smallmouth bass catch rates, total catch-per-unit-effort (CPUE), CPUE by river mile and size class,

length frequency histograms, CPUE for other nonnatives, total numbers captured for target species, and estimates of high concentration locations; summarize numbers of smallmouth bass removed. Data from past years of sampling will be included for relevant metrics to provide background, demonstrate trends and progress toward smallmouth bass removal criteria.

Objective 3: Determine adult and juvenile native fishes catch rates, total catch-per-unit-effort (CPUE), CPUE by river mile and size class, length frequency histograms, total numbers captured for each species, and estimates of high concentration reaches.

V. Study Area

The study area is located on the Green River from Sand Wash (RM 215.3) to Swaseys Rapid boat ramp (RM 129.8) (85.5 river miles); the Duchesne River from Myton Bridge (RM 42) to the confluence of the Green River; and the White River from the BLM put in (RM 20) to the confluence of the Green River (RM 0).

VI. Study Methods/Approach

Fish community composition studies and Smallmouth bass removal and monitoring will be done using electrofishing rafts and an electric seine.

One high flow electrofishing pass will be conducted in June, or will be scheduled as conditions will allow. Two electrofishing rafts will simultaneously electrofish each shoreline of the river, each focusing primarily on smallmouth bass habitat. The number of young of year (YOY) smallmouth captured will be used to estimate growth rates and potential recruitment sites. Age 2 fish will be documented and analyzed to determine YOY over-winter survival. All smallmouth bass captured will be removed.

In addition, two (2) designated miles will be determined for each reach (4 total reaches) within the 42 RM section of the Duchesne River. A total of eight (8) designated miles will be surveyed within the 42 RM section of the Duchesne River. The shorelines of each designated mile will be electrofished to collect all fish species. All fish collected within the designated miles will be documented and analyzed to determine native fish community composition. All native fish will be returned live to the river.

Eight (8) low flow electrofishing sample sites will be determined and electric seine surveys will be conducted between August through September. Electric seine surveys will focus on several distinct habitats including: shallow back water, shallow pool, riffles and shallow runs. All fish collected will be documented and analyzed to determine native fish community composition. All smallmouth bass captured will be removed. The number of young of year (YOY) smallmouth captured will be used to estimate growth rates and potential recruitment sites. Age 2 fish will be documented and analyzed to determine YOY

over-winter survival. CPUE will be estimated to determine capture probabilities and to measure depletion.

All green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*) , black crappie (*Pomoxis nigromaculatus*), largemouth bass (*Micropterus salmoides*), northern pike (*Esox lucius*), walleye (*Sander vitreus*), grass carp (*Ctenopharyngodon idella*), gizzard shad (*Dorosoma cepedianum*), and burbot (*Lota lota)* that are captured will be removed. All nonnative fish removed will be euthanized and deposited on the river bank away from public sight. If endangered fishes are captured they will be revived according to Recovery Program protocols and released back into the river. All capture data will be recorded using electronic data loggers.

Field crews will consist of personnel from the Ute Indian Tribe (Tribe), the US Fish and Wildlife Service (USFWS), and the Utah Division of Wildlife Resources (UDWR).

VII. Task Description and Schedule

Task 1. Ute Indian Tribe/USFWS/UDWR: Conduct one, high flow, removal and monitoring pass for smallmouth bass on the Duchesne River between Myton Bridge and the confluence with the Green River in June 2009.

Task 2. Ute Indian Tribe/USFWS/UDWR: Conduct one, high flow, native fish species community composition pass on the Duchesne River between Myton Bridge and the confluence with the Green River in June 2009.

Task 3. Ute Indian Tribe/USFWS/UDWR: Conduct low flow, native fish species community composition surveys (w/ electric seine) in (8) one-mile reaches on the Duchesne River between Myton Bridge and the confluence with the Green River; August thru September.

Task 4. Ute Indian Tribe: Data entry, data analysis, and report writing – October/November 2009

VIII. FY2009 Budget:

USFWS Task 3 - low flow sampling from Myton to Green River, Duchesne River

Task Activity	
Labor	
GS-11 Biologist ($37.16/hr x 8 hrs/day x 4 days) + ($55.74/hr x 2 hrs OT/day x 4 days)	$1,635
GS-8 Fish Tech ($30.70/hr x 8 hrs/day x 4 days) + ($46.05/hr x 2 hrs OT/day x 4 days)	$1,350
GS-5 Bio Tech ($18.90/hr x 8 hrs/day x 4 days) + ($28.35/hr x 2 hrs OT/day x 4 days)	$832

Subtotal	$3,817

Equipment	
Vernal to Myton round trip	
(1 trucks/trip x 91 mi/truck x $0.505/mi x 4 trips)	$183
Equipment and supplies (nets, electrofishing gear, maintenance and repairs, etc.)	$1,000

Subtotal	$1,183

Total	**$5,000**

UDWR Tasks 1 & 2 –high flow pass from Myton to Green River, Duchesne River

Labor	
Wildlife Biologist II ($340/day x 5 days/trip x 1 trip + 1 day trip prep)	$2,040
Wildlife Technician I ($195/day x 5 days/trip x 1 trip + 1 day trip prep)	$1,170
Wildlife Technician I ($195 x 4 hrs/day x 5 days shuttle driving x 2 drivers)	$780
Subtotal	$3,990

Travel, Per Diem, Equipment	
(2 trucks/trip x 150 mi/truck x $0.417/mi x 5 trips) Vernal to Duchesne River roundtrip	$626
Per diem (2 people/day x $11/person x 5 days) Duchesne day trips	$110
Equipment and supplies (nets, electrofishing gear, maintenance and repairs, etc.)	$0
Subtotal	$736
Total	**$4,726**

UDWR Task 3 - low flow sampling from Myton to Green River, Duchesne River

Labor	
Wildlife Biologist II ($340/day x 5 days)	$1,700
Wildlife Technician I ($195/day x 5 days)	$975
Subtotal	$2,675

Travel, Per Diem, Equipment	
(2 trucks/trip x 150 mi/truck x $0.417/mi x 5 trips) Vernal to Duchesne River roundtrip	$626

Per diem (4 people/day x $11/person x 5 days) Duchesne day trips	$220
Equipment and supplies (nets, electrofishing gear, maintenance, fuel and oil, etc.)	$1,000
Subtotal	$1,846

Project Sub-Total	**$14,247**

Tasks 1, 2, 4 - Ute Indian Tribe (In-Kind Services)

Labor (Biologist and Technicians)	$10,000
Equipment (Two electrofishing rafts, gear, and equipment)	$14,000

Total	**$24,000**

Deliverables/Due Dates: Recovery Program annual progress report: November 2009

IX. Program Budget Summary

USFWS	$5,000
UDWR	$9,247
FY 2009 Subtotal	**$14,247**
In-kind	
Ute Indian Tribe	$24,000
FY 2009 Total	**$33,247**

IX. Reviewers

Dave Irving, Project Leader, Utah Fisheries Office, Vernal, Utah. March 2009.

X. References