

**Sub-Adult and Adult Large-Bodied
Fish Community Monitoring
Fiscal Year 2017 Project Proposal
31 March 2016**

Principal Investigator:

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Contract or Agreement number(s):

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R13PG40051 for USFWS – Albuquerque, NM
R13AC40007 for UDWR – Moab, UT

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(a.k.a. Adult Monitoring)
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Background:

Studies performed before 1991 documented a native San Juan River fish fauna of eight species, including Colorado Pikeminnow (previously known as Colorado Squawfish), Razorback Sucker, and Roundtail Chub and provided baseline information on distribution and abundance of native and introduced fish species in the San Juan River. These studies indicated that at least one of the two endangered fish species (i.e., Colorado Pikeminnow) was still a viable member of the San Juan River fish community.

Between 1991 and 1998, the Main Channel Fish Community Monitoring study (called “Adult Monitoring” for short), greatly refined our understanding of the San Juan River fish community. The main sampling technique employed during the 1991-1998 Adult Monitoring study was raft-borne electrofishing, although radio telemetry was also heavily employed. Data collected during the 1991-1998 Adult Monitoring study provided information on specific habitat usage by rare fish species. In addition, data gathered during the 1991-1998 Adult Monitoring study aided in the selection of specific sites for detailed hydrologic measurements and larval drift sampling. Integration of 1991-1998 Adult Monitoring data along with data from Colorado Pikeminnow macrohabitat studies, Razorback Sucker experimental stocking studies, tributary and secondary channel studies, fish health studies, contaminants studies, habitat mapping studies, and non-native species interaction studies, helped provide a logical framework upon which to make flow recommendations for the reoperation of Navajo Reservoir that would benefit the San Juan River’s endangered fishes (as well as other members of the native fish community).

The Sub-Adult & Adult Large-Bodied Fish Community Monitoring study (also referred to as Adult Monitoring), which began in 1999, is a direct offshoot of the 1991-1998 Adult Monitoring study. This study is one of a suite of long-term monitoring efforts detailed in the San Juan River Basin Recovery Implementation Program’s (SJRBRIP) Monitoring Plan and Protocols (SJRBRIP 2012) that are designed to help evaluate progress of the two endangered fish species towards recovery under the SJRBRIP’s Long Range Plan (SJRBRIP 2014). The current Adult Monitoring study incorporates essentially the same monitoring protocols as did its 1991-1998 precursor study (e.g., sampling via raft-borne electrofishing). This allows for data collected during the current Adult Monitoring study to be validly combined with and compared to the older 1991-1998 Adult Monitoring data. The combination of these two data sets provides statistically-powerful, long-term trend data through which the SJRBRIP’s Biology Committee can view changes in the San Juan River’s large-bodied fish community over time. This long-term trend data allows the SJRBRIP Biology Committee to evaluate whether various management actions being implemented are having the desired effects on the San Juan River fish community. In addition, Adult Monitoring has proven to be an effective tool for monitoring populations of both stocked Razorback Sucker and Colorado Pikeminnow.

Relationship to the Recovery Program:

Adult Monitoring provides data for or makes possible (at least in part) the following Tasks under element numbers 1-5 of the Long Range Plan (SJRBRIP 2015): 1.1.1.1, 1.1.1.2, 1.2.1.1, 1.2.1.2, 2.3.1.4, 2.3.1.5, 2.3.1.6, 2.3.1.7, 2.3.2.1, 2.4.2.1, 2.6.1.1, 2.6.1.2, 2.6.1.3, 3.1.1.1, 3.1.1.3, 3.1.1.4, 3.1.1.5, 3.1.1.6, 3.1.1.7, 3.2.3.5, 4.1.1.1, 4.1.1.2, 4.1.1.3, 4.1.2.3, 4.1.2.4, 4.1.2.6, 4.1.3.1, 4.1.4.2, 4.1.5.1, 4.1.6.1, 4.1.6.2, 4.1.6.3, 4.1.7.1, 4.1.7.2, 4.4.1.1, 4.4.2.1, 4.4.2.2, 4.4.2.3, 4.4.3.1, 4.4.3.2, 4.4.3.3, 4.5.2.3, 5.2.2.2, 5.2.2.3, 5.2.2.4, and 5.2.2.5. The monitoring protocols discussed in the Methods section of this report reflect those that are currently included in the latest version of the revised SJRBRIP Monitoring Plan and Protocols (SJRBRIP 2012).

Description of Study Area:

As per the latest version of the SJRBRIP Monitoring Plan and Protocols (SJRBRIP 2012) the study area for Adult Monitoring extends from river mile (RM) 180.0 (just downstream of the Animas River confluence in Farmington, NM), downstream to RM 77.0 (just upstream of the Sand Island boat launch near Bluff, UT). The river section from RM 77.0 downstream to RM 2.9 (Clay Hills boat launch, just upstream of Lake Powell in UT) is scheduled to be sampled every fifth year. The last such sampling occurring in 2015, so that section of river should be sampled again in 2020.

In addition to sampling from the Animas River confluence to Sand Island boat launch, two additional river sections in NM will be sampled (5 total days of sampling). These two river sections would include: 1) the San Juan River from the Bloomfield Riverside Landing (RM 196.0) downstream to the Animas River confluence (RM 180.6) – three days of sampling; and, 2) the Animas River from Riverside Park in Aztec, NM downstream to the San Juan River confluence – two days of sampling. Because extremely low water levels in the Animas River preclude sampling this river section in the fall, Animas River sampling will be done in the spring (March/April) of each year.

Objectives:

- 1) Annually, during autumn, document fish community structure, species abundance (presented as catch/time, CPUE) and distribution, and size structure among populations of both native and nonnative large-bodied fishes in San Juan River. Specific emphasis shall be placed upon monitoring the population parameters among the rare San Juan River fish species -- Colorado Pikeminnow, Razorback Sucker, and Roundtail Chub (both wild and stocked fish).
- 2) Obtain data that will aid in the evaluation of the responses (e.g., year-to-year survival, reproduction, recruitment, growth, and condition factor) of both native and nonnative large-bodied fishes to management actions.
- 3) Continue to perform activities that support other studies and recovery actions being implemented by the SJRBRIP. These may include the following:
 - a. Remove nonnative fish species which prey upon and may compete with native fish species in the San Juan River.
 - b. Collect GPS waypoints in habitats where endangered Colorado Pikeminnow and Razorback Sucker are collected.
 - c. Collect tissue samples from various fish species for stable isotope, genetics, and contaminants studies.

Through the handling of large numbers of fish for other study objectives and because of its long-term dataset, Adult Monitoring provides chances to opportunistically observe and monitor other information on the San Juan River's large-bodied fish community. This includes, but is not limited to: 1) the incidence of disease and abnormalities among fish populations; 2) the distribution and abundance of nonnative white sucker and the rate of hybridization between this species and native sucker species; 3) hybridization rates among native sucker species, specifically the endangered Razorback Sucker and Flannelmouth Sucker; 4) negative interactions between Channel Catfish and native fish species, specifically endangered Colorado Pikeminnow and Razorback Sucker; and, 5) documenting episodic events, such as the invasion of the San Juan River by fish species from Lake Powell or collecting rare, but potentially important fish species, such as Grass Carp.

Methods:

Objectives 1-3: Two Adult Monitoring trips will take place in the fall of 2017. The first will sample the lower Animas River from Riverside Park in Aztec, NM downstream to the Animas-San Juan River confluence. These two days of sampling will occur sometime between late March and late April. The second sampling trip will sample from RM 196.0 (Bloomfield Riverside Landing) downstream to RM 77.0 (Sand Island boat landing). Sampling will begin in the first to second week of September and will be concluded by end of September. Raft-borne electrofishing will be the primary sampling technique for both sampling efforts.

Electrofishing will follow the methods set forth above and in the SJRBRIP Monitoring Plan and Protocols (SJRBRIP 2012). Two oar-powered rafts, with one netter each, will electrofish in a continuous downstream fashion, with one raft on each shoreline. Depending upon water levels in the lower Animas River in the spring, only one electrofishing raft may be used in the lower Animas River (instead of two) at the Principal Investigator's discretion. Netters will net all stunned fish that can possibly be collected, regardless of species or body size. Trailing or "chase" rafts will not be used to collect fish. No outboard motors will be used. Sampling crews will consist of approximately 2-4 people for spring sampling (2 per electrofishing raft) and 8-10 people for fall sampling (4 for electrofishing, 2-3 for baggage rafts, and 2-3 for other research elements that are being done simultaneously with our sampling). Electrofishing will sample two out of every three miles (approximately 130 total sampled river miles each fall). All fish collected will be enumerated by species and life stage at the end of every sampled mile. Every fourth sampled mile (known as a "designated mile" or DM), all fish collected will be weighed and measured. All native fish collected will be returned alive to the river. All nonnative fish collected will be removed from the river. All nonnative predatory fishes (e.g. - Walleye, Striped Bass, Largemouth Bass, Smallmouth Bass) collected will be weighed and measured, and may have stomach samples taken, before being removed from the river. Tag numbers, total length, and weight will be recorded on all recaptured, FLOY-tagged fish (both native and nonnative), as well as any rare fish collected. Colorado Pikeminnow, Razorback Sucker, and Roundtail Chub greater than 150 mm TL will be implanted with 134 kHz PIT (Passive Integrated Transponder) tags. Notes will be kept on any parasites and/or abnormalities observed on collected fishes.

The U.S. Fish and Wildlife Service (USFWS) will assume the lead responsibility for Adult Monitoring trips and other cooperating agencies will provide personnel and equipment as needed. Costs for cooperating agencies are included in this budget.

Products:

An interim progress report for Adult Monitoring data collected during 2017 is scheduled to be available

by 31 March 2018. The final version of this interim progress report which incorporates comments received is scheduled to be completed by 1 June 2018. Data files containing PIT tag information on the federally-listed endangered fish species (Colorado Pikeminnow and Razorback Sucker) collected during this Adult Monitoring trip will be submitted for inclusion in the SJRBRIP's integrated database by 31 December 2017. Data files containing the remainder of the information (e.g., data on common fish species) collected during this Adult Monitoring trip will be submitted for inclusion in the SJRBRIP's integrated database by 31 March 2018.

Qualifications of Personnel Included in the Budget:

Principal Biologist (GS-11) – Benjamin Schleicher, USFWS-CRFP

Ben has seven years with the USFWS-CRFP performing fisheries research and management in the Colorado and San Juan River basins, leading crews on daily and multi-day trips dealing with endangered species population estimates, nonnative fish removal, and riverwide fish community monitoring. He also spent two years with the UDWR-Moab performing the same tasks in the Colorado, Green, and San Juan River basins. In summer 2012, Ben took over as principal fish biologist for Region 6 of the USFWS in charge of performing fisheries research and management associated with the San Juan River Recovery Implementation Program (SJRBRIP). Specific to the San Juan River Basin recovery Implementation Program, Ben has been involved in a number of areas including: 1) long-term augmentation and monitoring of the San Juan River's two endangered fish populations; 2) performing and analyzing the effects of nonnative fish removal operations; and, 3) performing Razorback Sucker surveys in Lake Powell. Ben co-authored the 2012 Sub-Adult and Adult Large-Bodied Fish Community Monitoring Adult Monitoring report and was sole author of this report in 2013. Ben also was a co-author of the 2011 and 2012 San Juan River arm of Lake Powell Razorback Sucker Survey reports. Ben took over as the USFWS's Region 6 representative on the SJRBRIP Biology Committee in May 2013.

Principal Biologist (GS-14) -- Dale Ryden, USFWS-CRFP

Dale has 26 years of experience performing fisheries research and management in the Colorado, Gunnison and San Juan rivers. For over 22 years, Dale was the principal fish biologist for Region 6 of the USFWS in charge of performing fisheries research and management associated with the San Juan River Recovery Implementation Program (SJRBRIP). During his involvement with the SJRBRIP, Dale's responsibilities have ranged across a number of areas including: 1) initial reintroduction efforts for Razorback Sucker in the mainstem San Juan River; 2) long-term augmentation and monitoring of the San Juan River's two endangered fish populations; 3) annually monitoring the riverwide distribution and abundance of the entire large-bodied fish community in the San Juan River; 4) determining habitat use and preference and locating spawning areas of stocked Razorback Sucker and both stocked and wild Colorado Pikeminnow via radio-telemetry; and, 5) performing and analyzing the effects of nonnative fish removal operations. Dale has authored two peer-reviewed journal articles on his work in the San Juan River basin, as well as over 35 agency reports, and numerous augmentation plans and addendums. He co-authored a genetics management plan for the endangered Colorado Pikeminnow and Razorback Sucker in the San Juan River and has been a contributing author to both the flow recommendations report for the reoperation of Navajo Reservoir and the long-term monitoring protocols document currently being used by the SJRBRIP. During the development of the flow recommendations document, Dale acted as the chairman for the Native Fishes Workgroup. He is the Project Leader for the Colorado River Fishery Project office in Grand Junction, CO. From 2011-2013, Dale was the USFWS's Region 6 representative on the SJRBRIP Biology Committee. In May 2013, Dale became the USFWS's Region 6 representative on the SJRBRIP Coordination Committee.

Biological Technician Crew Leader (GS-6) – USFWS-CRFP

Our Crew Leaders have a minimum of three years with the USFWS-CRFP performing fisheries research and management in the Colorado and San Juan River Basins. They have all led single and multi-day trips conducting sampling for endangered and other native fishes, as well as conducting non-native fish removal efforts. Our Crew Leaders also assist biologists at the Ouray National Fish Hatchery – Grand Valley Unit with day to day operations and fish culture.

Biological Technicians (GS-5) – USFWS-CRFP

All have at least a BS degree in biology. Depending upon the individual, they have up to 3 years of experience performing fisheries research and management in the Colorado River Basin, including the San Juan River.

Projected Duration Of Project:

The Adult Monitoring study began in 1991 (see Introduction for details). It has continued, annually, with a consistent sampling regime every year since that time. This has allowed for the compilation of one of the longest-running and most statistically powerful fisheries databases available to the SJRBRIP. The Adult Monitoring study was modified with just very slight changes (e.g., a reduction in sampling frequency from every RM to two out of every three RM's) when it was incorporated as an integral part of the long-term San Juan River Monitoring Plan and Protocols (Propst et al. 2000) and a second time (to sample only RM 180.0-77.0) with the development of the SJRBRIP's Monitoring Plan and Protocols (SJRBRIP 2012). The suite of long-term monitoring studies are scheduled to run through the termination of the San Juan River Recovery Implementation Program.

Literature Cited:

San Juan River Basin Recovery Implementation Program. 2012. San Juan River Basin Recovery Implementation Program Monitoring Plan and Protocols. San Juan River Basin Recovery Implementation Program, U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

San Juan River Basin Recovery Implementation Program. 2015. Long-Range Plan. San Juan River Basin Recovery Implementation Program, U.S. Fish and Wildlife Service, Albuquerque, New Mexico.

Fiscal Year 2017 Estimated Budget:

Costs for participation of the U.S. Fish Wildlife Service, Colorado River Fishery Project (USFWS-CRFP) office, Grand Junction, CO.

(Based on projected FY-2016 costs)

Note 1: The FY-17 and outyear costs have been adjusted for the GS-5 Bio Tech line items to reflect new guidance from Office of Personnel Management (OPM) to the USFWS requiring the USFWS to provide health insurance to all federal employees, regardless of grade level or appointment type, if they work for the federal government longer than 60 days (480 total hours).

Note 2: As per conversations with the San Juan River Biology Committee on the 25 March 2015 conference call, costs have been added to this budget to reflect the separate springtime sampling that will occur in the lower Animas River.

Personnel/Labor Costs (Federal Salary + Benefits)

Objectives 1-3: Logistics, Electrofishing, Removal of Nonnative Fish

Principal Biologist (GS-11) – 224 hours @ \$50.84/hr	\$ 11,388.00
(1 person X 10 days planning & organization)	
<u>Animas River sampling - spring:</u>	
(1 person X 3 days/trip X 1 trip – work from hotel)	
<u>San Juan River sampling - fall:</u>	
(1 person X 5 days/trip X 1 trip – work from hotel)	
(1 person X 10 days/trip X 1 trip – camping)	
Bio. Tech. Crew Leader (GS-7) - 120 hours @ \$34.71/hr	\$ 6,768.00
<u>San Juan River sampling - fall:</u>	
(1 person X 5 days/trip X 1 trip – work from hotel)	
(1 person X 10 days/trip X 1 trip – camping)	
(+ 50 hours overtime at \$52.06/hr = \$2,603.00)	
Bio. Tech. Crew Leader (GS-6) - 120 hours @ \$33.74/hr	\$ 6,580.00
<u>San Juan River sampling - fall:</u>	
(1 person X 5 days/trip X 1 trip – work from hotel)	
(1 person X 10 days/trip X 1 trip – camping)	
(+ 50 hours overtime at \$50.62/hr = \$2,531.00)	
Biological Technicians (GS-5) – 312 hours @ \$25.70/hr	\$ 13,068.00
<u>Animas River sampling - spring:</u>	
(3 person X 3 days/trip X 1 trip – work from hotel)	
(+ 9 hours overtime each at \$38.55/hr = \$1,041.00)	
<u>San Juan River sampling – fall:</u>	
(2 person X 5 days/trip X 1 trip – work from hotel)	
(2 person X 10 days/trip X 1 trip – camping)	
(+ 52 hours overtime each at \$38.55/hr = \$4,009.00)	
Sub Total	\$ 37,804.00

Permitting; Coordination; Data Input, Analysis, Management & Presentation; Report Writing; Office & Administrative Support (Federal Salary + Benefits)

Administrative Officer (GS-9) – 200 hours @ \$46.06/hr	\$ 9,212.00
Principal Biologist (GS-11) – 400 hours @ \$50.84/hr	\$ 20,336.00
Project Leader (GS-14) – 320 hours @ \$85.92/hr	<u>\$ 27,494.00</u>
Sub Total	\$ 57,042.00

Travel and Per Diem (Based on Published FY-2016 Federal Per Diem Rates)

Hotel Costs	
15 nights @ \$89/night (in Farmington, NM)	\$ 1,335.00
5 nights @ \$114/night (in Cortez, CO)	\$ 555.00
12 nights @ \$89/night (in Farmington, NM)	\$ 1,068.00
Per Diem (Hotel Rate)	
3 days X 5 people X \$51/day (in Farmington, NM)	\$ 765.00
1 days X 5 people X \$59/day (in Cortez, CO)	\$ 295.00
3 days X 4 people X \$51/day (in Farmington, NM)	\$ 612.00
Per Diem (Camping Rate)	
15 days X 5 people X \$28/day	\$ 2,100.00
Sub Total	\$ 6,730.00

Equipment and Supplies

Vehicle Maintenance & Gasoline (@ \$365/month lease = \$12.17 per day based on 30 days in an "average" month + \$0.33/mile)

Animas River sampling - spring:

1 trip from Grand Junction, CO to Farmington, NM X 2 trucks X 3 days/trip – work from hotel (296 miles one-way = 592 miles round-trip X 2 trucks = 1,184 total miles) = \$390	\$ 390.00
3 days sampling on lower Animas River – work from hotel (30 miles/day X 3 days X 2 trucks = 180 miles) = \$59 (2 trucks X 3 days/trip X 1 trip X \$12.17/day) = \$73	\$ 132.00

San Juan River sampling - fall:

1 trip from Grand Junction, CO to Farmington, NM X 1 truck X 6 days/trip, sample from Animas river confluence downstream to Shiprock, NM – work from hotel (296 miles one-way = 592 miles round-trip) = \$195 (+ 70 miles shuttling/day X 5 days = 350 miles) = \$116 (1 truck X 6 days/trip X 1 trip X \$12.17/day) = \$73	\$ 384.00
3 additional days sampling on San Juan River upstream of Animas River confluence – work from hotel (30 miles/day X 3 days X 1 trucks = 90 miles) = \$30 (1 trucks X 3 days X \$12.17/day) = \$37	\$ 67.00
1 trip from Grand Junction, CO to Cortez, CO to Shiprock, NM to Mexican Hat, UT and back to Grand Junction, CO X 2 trucks X 10 days per trip – camping portion (610 miles/trip X 1 trip X 2 trucks = 1,220 miles) = \$403 (2 trucks X 10 days/trip X 1 trip X \$12.17/day) = \$243	\$ 646.00

Generator Gasoline

Animas River sampling - spring:

(30 gallons/trip X 1 trip @ \$4.00/gallon) – work from hotel: 3 days sampling on lower Animas River	\$ 120.00
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San Juan River sampling - fall:

(50 gallons/trip X 1 trip @ \$4.00/gallon) – work from hotel 5 days @ 5 gallons/day X 2 raft X 1 trip	\$ 200.00
(30 gallons/trip X 1 trip @ \$4.00/gallon) – work from hotel:	\$ 120.00

3 additional days sampling on San Juan River upstream of Animas River confluence	
3 days @ 5 gallons/day X 2 raft X 1 trip (120 gallons/trip X 1 trips @ \$4.00/gallon) – camping portion	\$ 480.00
4 days @ 5 gallons/day X 1 raft X 1 trip	
5 days @ 5 gallons/day X 4 rafts X 1 trip	
Equipment Maintenance, Repair, & Replacement	\$ 5,045.00
Exact use of the money in this line item will vary from year to year depending on what equipment needs to be maintained, repaired, or replaced, but use of these funds for a “typical” field season for one study would include the following:	
Annual trailer maintenance & safety inspection = \$175	
Replace/repair trailer suspension, trailer lights, winch handle/straps/gears, trailer jack stand wheel bearings	
Replace trailer tires – 2 per year @ \$100 each = \$200	
Spark plugs for generators – 5 at \$7 each = \$35	
Synthetic oil for generators - 5 quarts at \$7 each = \$35	
Generator repair/tune-up - 5 hrs @ \$75/hr = \$375	
Hip boots – 2 pair at \$50/pair = \$100	
Breathable chest waders - 2 pair @ \$125/pair = \$250	
Stearns Type III life jackets – 3 @ \$70 each = \$210	
Electrical Gloves - 3 pairs @ \$65/pair = \$195	
Dura-Frame electrofishing dip nets – 2 @ \$300 each = \$600	
Raft trailer maintenance	
Signal light pigtail adapters – 2 @ \$30 each = \$60	
Repair raft frame	
Aluminum welding – 3 hours @ \$150/hr = \$450	
Raft repair kits	
Raft glue (urethane/hypalon) – Four 4-oz. cans @ \$22.50/can = \$90	
NRS raft patch material – 5 feet @ \$37/ft = \$185	
Acetone – 1 gallons @ \$17.50/gallon = \$17.50	
Toluene – 1 gallon @ \$17.50/gallon = \$17.50	
Replace any missing NRS HD-brand tie-down straps, each boat needs:	
Ten 2-ft straps @ \$4.20 each = \$42	
Five 3-ft straps @ \$4.30 each = \$21.50	
Ten 4-ft straps @ \$4.70 each = \$47	
Five 6-ft straps @ \$5.05 each = \$25.25	
Five 9-ft straps @ \$5.7 each = \$28.50	
Five 12-ft straps @ \$6.15 each = \$30.75	
Replace any missing D-style carabiners, each boat needs:	
10 @ \$7.50 each = \$75	
Mesh rig bag – 1 @ \$50 each = \$50	
Yeti 125-quart coolers – 1 @ \$500 each = \$500	
Rafting oars, oar blades, and oar rowing sleeves	
Carlisle 10-foot oar shafts – 2 @ \$90 each = \$180	
Carlisle Oars blades – 4 @ \$65 each = \$260	
Oar sleeves – 4 @ \$12 each = \$48	
5-gallon plastic gasoline jerry cans – 5 @ \$20 each = \$100	

River bags

NRS 3.8 heavy-duty Bill's Bag – 1 @ \$100 each = \$100

Clavey (green 7 X 17) dry bag – 3 @ \$22 each = \$66

Clavey (blue 10 X 24) dry bag) – 4 @ \$26 each = \$104

20 lb. propane tanks – 3 @ \$20 each = \$60

Pesola brand spring scales

20010 Micro-Line 10 gram – 1 @ \$50 = \$50

20060 Micro-Line 60 gram – 1 @ \$46 = \$46

20100 Micro-Line 100 gram – 1 @ \$46 = \$46

40300 Medio-Line 300 gram – 1 @ \$54 = \$54

40600 Medio-Line 600 gram – 1 @ \$54 = \$54

42500 Medio-Line 2,500 gram – 2 @ \$56 = \$112

41002 Medio-Line 1,000 gram – 3 @ \$54 = \$108

80005 Macro-Line 5 kg – 1 @ \$107 = \$107

80010 Macro-Line 10 kg – 1 @ \$109 = \$109

Other potential uses for these same funds could include replacing hand tools (ratchet and sockets, screw drivers, vise grips, pliers, Allen wrenches, crescent wrenches, hammer, etc.), WD-40, bailing wire, duct tape, electrical supplies (12 and 14 gage wire for the boats, junction boxes, extra male & female plugs, wire nuts, fuses, Ohm meter, electrical tape), batteries (C, AA and AAA), camp stoves, lanterns, lantern mantles, small "pony" propane bottles for lanterns, Gott 5-gallon water jugs, shovels, 5-gallon buckets, cargo nets, fix chips or cracks in vehicle windshields, bulbs, lenses, and wiring to fix trailer lights and pigtales, new electrofishing spheres, wire rope for replacing electrofishing "witches brooms," 2-man dome tents, NRS Canyon Box for dry storage, camping kitchen gear (roll-up camp tables, anodized dutch ovens, plates, bowls, cups, silverware), data books, Rite-In-The-Rain data sheets, pencils, repair/replace river maps, etc.

Sub Total	\$ 7,584.00
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USFWS-CRFP (Grand Junction, CO) Total	\$109,160.00
USFWS Region 6 Administrative Overhead (3.00%)	<u>\$ 3,275.00</u>
USFWS Region 6 Total	\$112,435.00

Funding for Participation by Other Agencies: (These figures are submitted to USFWS-CRFP by the listed cooperating agencies)

USFWS-NMFWCO - Albuquerque, NM (Region 2)	
See Attached Budget for Line Item Breakdowns	\$ 13,614.00
Utah Division of Wildlife Resources - Moab, UT	
See Attached Budget for Line Item Breakdowns	<u>\$ 5,799.00</u>
	\$ 19,413.00

FY-2017 WORKPLAN TOTAL	\$131,848.00
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Under the heading "Funding for participation of other agencies." Cost for participation of the U.S. Fish and Wildlife Service, New Mexico Fish and Wildlife Conservation Office, NM in FY-2017.

Personnel/Labor Costs (Federal Salary + Benefits)

Fish Biologist (GS-9)– 17 days @ \$325/day (1 person x 12 days x 1 trip; Shiprock to Mexican Hat) (1 person x 5 days x 1 trip; Animas to Shiprock)	\$ 5,525
Biological Science Technician – 17 days @ \$184/day	\$ 3,128
Supervisory Fish Biologist (GS-13) – 2 days @ \$561/day (Project participation oversight and contract management)	\$ 1,122
Administrative Officer (GS-9) – 1 day @ \$343/day	<u>\$ 343</u>
Sub Total	\$ 10,118

Travel and Per Diem (Based on Published FY-2016 Federal Per Diem Rates)

Hotel Costs – 12 nights (6 nights x 2 rooms @ \$89/night; Farmington, NM)	\$ 1,068
Per Diem	
Camping Rate - 20 days @ \$29/day (2 people x 10 days x 1 trip)	\$ 580
Hotel Rate – 10 days @ \$51.00/day	<u>\$ 510</u>
Sub Total	\$ 2,158

Equipment

Vehicle Maintenance & Gasoline (@ \$0.58/mile) (660 miles round trip from Albuquerque, NM to Mexican Hat, UT + 100 miles shuttling)	\$ 441
Equipment Maintenance, Repair, & Replacement (e.g., life jackets, hip boots, generator repair, rubber gloves, dip nets, aluminum welding, raft repair, etc.)	<u>\$ 500</u>
Sub Total	\$ 941

USFWS-NMFWCO (Albuquerque) Total **\$ 13,217**

USFWS Region 2 Regional Office Administrative Overhead (3%) **\$ 397**

USFWS Region 2 Total **\$ 13,614**

FY 2017 Costs for UDWR- Moab

Participation in San Juan River Large-Bodied Fish Community Monitoring (1person X 10 days)
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Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$34.79	0	\$0
Biologist	\$33.92	70	\$2,374
Technician	\$17.13	70	\$1,199
		subtotal	\$3,574

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (2 trucks for 1% of total fleet costs)	\$40,800.00	0.01	\$408
In-state per diem (1 person, 10 days, 1 pass)	\$40.00	10	\$400
Out-of-state Per Diem (travel day)	\$46.00	1	\$46
Hotel (Cortez, CO)	\$89.00	1	\$89
Camping reimbursement	\$25.00	9	\$225
		subtotal	\$1,168

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$100
Sampling gear repair/replacement:			\$125
Boating gear repair/replacement:			\$125
Fuel for generator	\$4.00	25	\$100
		subtotal	\$450

Total Expenses	\$5,192
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Administrative Overhead (17% on all personnel services)	\$607
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UDWR-Moab Total FY 2017	\$5,799
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^a The State of Utah motorpool vehicles cost approximately \$6,800/year/vehicle (includes fleet rental, mileage, and gas), which is based on the average annual cost for all trucks used in our program.

^b Includes, but is not limited to, tents, sleeping pads, toilet system, cookware, stoves, propane, charcoal, satellite phone and service, drybags, coolers, first aid supplies.

^c Includes, but is not limited to dip nets, tags, tagging equipment, electrofishing units, electrofishing wiring, anodes, cathodes, generators, data loggers, etc...

^d Includes, but is not limited to, raft repair/replacement, oars, oar hardware, raft frame repair, dry boxes, straps, etc...

^{b,c,d} Estimated costs are based on actual costs from previous years plus an estimated 3% cost of living increase each year following.