

**COLORADO RIVER RECOVERY PROGRAM  
FY-2018-2019 SCOPE OF WORK**

Project No. 163

*Aspinall-related fish monitoring – Gunnison and Colorado rivers*

Reclamation Agreement number: R15PG00083

Reclamation Agreement term: October 1, 2014 – Sep. 30, 2019

Lead Agency: U.S. Fish and Wildlife Service  
Grand Junction Fish and Wildlife Conservation Office

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Category:

- Ongoing  
 Ongoing-revised project  
 Requested new project  
 Unsolicited proposal

Expected Funding Source:

- Annual funds  
 Capital funds  
 Other (explain)

I. Title of Proposal: Monitoring multiple life stages of the fish community in the lower Gunnison and upper Colorado rivers, with emphasis on Colorado pikeminnow and razorback sucker populations, in response to reoperation of the Aspinall Unit and implementation of the Selenium Management Plan.

II. Relationship to RIPRAP:

Gunnison River Action Plan: Gunnison River Mainstem

V. Monitor populations and habitat and conduct research to support recovery actions.

V.A. Conduct research to acquire life history information and enhance scientific techniques required to complete recovery actions.

Colorado River Action Plan: Colorado River Mainstem

V. Monitor populations and habitat and conduct research to support recovery actions.

V.A. Conduct research to acquire life history information and enhance scientific techniques required to complete recovery

actions.

### III. Study Background/Rationale and Hypotheses:

The Programmatic Biological Opinion (PBO) for water depletions in the Gunnison River Basin (USFWS 2009) stipulates that endangered fishes, as well as the entire fish community, be monitored to determine the status of the species before and after the Selenium Management Plan (SMP) is implemented and following reoperation of the Aspinall Unit reservoirs. The PBO calls for monitoring of multiple life stages and density estimates of Colorado pikeminnow and razorback sucker in the lower Gunnison and Colorado rivers.

Density estimates can be calculated by first developing population estimates through mark-recapture techniques. The standard for monitoring populations of Colorado River endangered fishes is to periodically develop population estimates using closed-model capture-recapture methods. Such estimates provide information on population status (abundance), and when repeated periodically over an extended period can also provide information on population trends. Such estimates have been made for Colorado River populations of Colorado pikeminnow and humpback chub.

Because sub-adult and adult Colorado pikeminnow and razorback sucker are few and/or difficult to locate in the Gunnison River (Burdick 1995), the approach used here was to first see (in the first two years of sampling: 2011 and 2012) if sufficient numbers of each could be captured to allow mark-recapture abundance estimation. This was to be accomplished with a limited sampling effort of only two electrofishing passes each year (see protocol below for fish community monitoring). It was anticipated that if sufficient numbers of endangered fish were caught to allow for generation of population estimates (and subsequently density estimates) annual sampling during 2013, 2014 and 2015 would be increased to five passes. Hence, the first two years were essentially a feasibility study for adult density estimation (number of individuals per unit area). Because 2011-2012 sampling failed to collect sufficient numbers of endangered fish to allow for generation of population estimates (and subsequently density estimates), monitoring in 2013 and outyears will continue to employ the less precise index of catch-per-unit-effort (number of fish caught per hour of electrofishing). This means continuing with two electrofishing passes per year, allowing comparison of catch rates through time, until such time that sufficient numbers of endangered fish are caught to allow for population and density estimates to be generated. The assumption inherent when using this index as a monitoring tool is that trends in catch rates are indicative of underlying trends in abundance, although the level of actual abundance is never known or estimated. Since numbers of endangered Colorado pikeminnow and razorback sucker collected in 2011-2016 were well below the levels needed for generating population estimates, sampling in 2018 and beyond will continue with two electrofishing passes.

The fish assemblage in the Gunnison River will also be monitored, using electrofishing catch-per-effort as an index to track trends in relative abundance of each species. Burdick (1995) conducted four passes of raft-based electrofishing to characterize the Gunnison River fish community in 1992 and 1993. He sampled once during pre-runoff, once during runoff, and twice during post-runoff. To allow comparison of our results with those of Burdick (1995), which were collected almost 20 years ago, we will use a similar sampling protocol but scale back the number of electrofishing passes to two each year and conduct these only during the post-runoff period. It is during these two electrofishing passes that capture rates of endangered fish will be assessed to determine if mark-recapture abundance estimation will be feasible in subsequent years (see above).

For young-of-the-year (YOY) and small-bodied fish monitoring, we propose to use beach seine sampling of backwaters during fall (late September-early October) using ISMP methodology (see McAda 1994). Burdick (1995) found that Gunnison River backwater habitat was very scarce and therefore he deviated from the ISMP protocol (sampling two backwaters in every five-mile segment) by sampling every backwater encountered. We propose to follow Burdick's modification of the ISMP methodology in this regard.

Concurrent with 2011-2014 fish community monitoring in the Gunnison River, tissue samples were collected to determine selenium concentrations in fish before and after implementation of the SMP. Muscle plug samples were collected from all adult Colorado pikeminnow, razorback sucker, and bonytail encountered. In addition, from 2011-2014, muscle plug samples were collected from common carp and roundtail chub, as well as whole-body samples of speckled dace (ubiquitous species) to insure that statistical comparisons could be made regarding selenium in fish tissue before and during SMP implementation.

In the Colorado River, downstream of the Gunnison River inflow, the population of adult Colorado pikeminnow is already being monitored (Project 127) with mark-recapture abundance estimation (see Osmundson and White 2014). During field sampling, razorback sucker capture-recapture data will continue to be collected; estimates of adult razorback sucker abundance will be developed from these data. In 2013, abundance estimates were developed for adult razorback sucker in the Colorado River for the years 2008, 2009, and 2010 (Osmundson in prep.). Distribution of any running ripe females collected will also be mapped to help ascertain spawning site locations. The assumption here is that improvement in flow regimes in the Gunnison River will have positive ramifications in the downstream Colorado River as well and hopefully result in benefits to endangered fish populations in both rivers.

Osmundson and Seal (2009) found increasing catch rates of razorback sucker larvae in the Colorado River from 2004 to 2007 and an apparent (non-significant) decrease in catch rates in the Gunnison River. Hand seine sampling for larval fish was performed from 2011-2016 in both rivers from mid-May to early-July, to

encompass the spawning season for razorback sucker. This work will be continued in 2018-2022. Larval hand seine sampling during the Colorado pikeminnow spawning period (mid-June to mid-August) was originally planned (though not budgeted for) in the 2011-2014 SOW. However, due to funding constraints related to sequestration and the lack of collections of adult Colorado pikeminnow precluded this activity being initiated between 2011 and 2014. Larval hand seine sampling will provide an index to reproductive success of each species using catch-per-effort (mean number per sample) of endangered fish larvae. For razorback sucker larvae, results can be compared with those provided earlier (2002-2007) by Osmundson and Seal (2009). Colorado pikeminnow larval catch rates in the Colorado River can be compared with results provided by Osmundson and Burnham (1998) for the years 1986-1994. If the Program Director's Office deems that conducting larval sampling for Colorado pikeminnow is a priority, then this SOW would need to be updated to reflect this additional work (manpower and equipment), as well as the necessary funding. We recommend that this decision be based upon adult Colorado pikeminnow becoming more abundant in Gunnison River collections prior to initiating larval collection activities.

Trends in large-bodied fish community composition and species relative abundance will also be monitored in the Colorado River in the 18-mile reach immediately downstream of the Gunnison River inflow. As in the Gunnison River, shoreline electrofishing will be used to generate annual catch-per-effort statistics as a monitoring index. The Interagency Standardized Monitoring Program (ISMP) of the 1980s and 1990s included an annual, adult, spring, electrofishing survey, but was designed to detect trends only in endangered species and thus no systematic sampling of the fish community was performed. The only systematic community sampling conducted under the auspices of the Recovery Program that could now serve as a baseline for future monitoring was the electrofishing sampling conducted in 1994 and 1995 as part of the food-availability study, Project No. 48-A (see Osmundson 1999). From 2011-2016, we replicated that sampling protocol and sample the reaches randomly selected and sampled at that time so results in coming years can be compared to those earlier catch rates. This work will also continue from 2018-2022.

#### IV. Study Goals, Objectives, End Product:

##### Goals

- 1) Continue the long-term, multi-life-stage, monitoring program for Colorado pikeminnow and razorback sucker populations in the Gunnison and Colorado rivers whereby population responses can be used to evaluate the effectiveness of implementation of Aspinall re-operation and the Selenium Management Program (SMP).
- 2) Determine selenium concentrations in endangered fish before and after implementation of the Selenium Management Program as a means to

assess whether environmental selenium reductions result in concomitant reductions in endangered fish. The performance and reporting of this work will be done with funding other than Recovery Program funds.

### Objectives

- 1) Continue long-term monitoring program for sub-adult and adult Colorado pikeminnow and razorback sucker in the lower Gunnison River while simultaneously bolstering existing monitoring efforts in the Colorado River by including abundance estimation of stocked razorback sucker.
- 2) Continue to evaluate reproductive success of endangered fish in the Gunnison and 18-mile reach of the Colorado rivers by performing early-life-phase abundance monitoring through systematic collections of larvae (hand seining) and young-of-the-year (beach seining).
- 3) Continue monitoring of the fish community in the Gunnison River and 18-mile reach of the upper Colorado River, including both large- (electrofishing) and small-bodied fish (beach-seining) using protocols modeled after Burdick (1995), Osmundson (1999) and ISMP young-of-year sampling (McAda et al. 1994).
- 4) Continue to determine selenium concentrations in Colorado pikeminnow, razorback sucker, and bonytail inhabiting the Gunnison River, downstream of delta, CO. The performance and reporting of this work will be done with funding other than Recovery Program funds.

### End Product

A final report detailing study findings, including results of endangered and sympatric fish community monitoring -- adult, YOY, and larval sampling (to be produced by GJ FWCO - Grand Junction). In addition, a report detailing the results of selenium concentrations found in fish samples (to be produced by Grand Junction, CO Ecological Services field station; work to be funded outside of the Recovery Program) will be provided to the Recovery Program as a courtesy, upon its completion.

#### Fish Community Monitoring Report:

Draft report ready for peer review on August 30, 2020.

Draft final ready for approval consideration October 31, 2020.

Report finalized November 31, 2020.

#### Larval Fish Monitoring Report:

Draft report ready for peer review on August 30, 2021.  
Draft final ready for approval consideration October 31, 2021.  
Report finalized November 31, 2021.

Contaminants Report (funded outside of the Recovery Program):  
Draft report ready for peer review on August 30, 2020.  
Draft final ready for approval consideration October 31, 2020.  
Report finalized November 31, 2020.

## V. Study Area:

Large-bodied fish, YOY, and larval fish will be sampled along shorelines and zero-velocity habitats of the lower Gunnison River from Hartland Diversion Dam (RM 59.9) downstream to a point immediately upstream from the Redlands Diversion Dam near Grand Junction (RM 3). In the Colorado River, large-bodied fish will be sampled in sub-reaches of the 18-mile reach extending downstream from the Gunnison River inflow (RM 171) downstream to the Colorado-Utah state line. Fall YOY sampling will occur throughout the same 18-mile reach and extend downstream to the Colorado-Utah line to stay consistent with the former ISMP YOY sampling area. Larval sampling in the Colorado River will be conducted from the Gunnison River inflow downstream Colorado/Utah stateline.

## VI. Study Methods/Approach:

### Gunnison River

Colorado pikeminnow and razorback sucker capture rates will be monitored by sampling the entirety of the Gunnison River study area. Larval sampling will be conducted four days per week from mid-May through the mid-July, or about 9 weeks each year. One complete pass can be made through the study area in four days. For larval seine sampling, the study area will be divided into 5-mile segments and 1-6 sites will be sampled per segment each week, depending on availability of low-velocity habitats, consistent with methods used by Osmundson and Seal (2009). An investigator will spend about five minutes at each site seining with a one-person, two-handled, fine-meshed seine. River-mile location of each site will be noted, as well as presence or absence of larvae. If larvae are found, they will be preserved in individually labeled bottles of 100% ethanol. Larval collections will be sent to the Larval Fish Laboratory at Colorado State University for specimen identification and archiving.

For YOY sampling, one trip will be made each fall during sometime between mid-September and mid-October, consistent with Burdick (1995). In general, the protocol used by the Interagency Standardized Monitoring Program (ISMP) for YOY sampling will be followed (see McAda et al. 1994). However, because backwater habitat is scarce in the Gunnison River, most if not all backwaters encountered will be sampled, rather than hoping to sample two in each 5-mile reach, as stipulated in the ISMP. Two non-overlapping hauls will be made in each

backwater. A 30-foot-long x 6-ft-deep 1/8 inch mesh seine or a 15-foot-long x 4-ft-deep 1/8 inch mesh seine will be used depending upon the size of the habitat to be sampled. Size of seine used at each backwater will be recorded to calculate area sampled. Fish that can be identified in the field will be counted and released; others will be preserved in 100% ethanol and sent to the Larval Fish Lab for enumeration. Area seined at each backwater will be recorded so that catch-per-effort can be calculated in terms of fish per unit area.

Large-bodied fish community sampling will follow the protocol established by Burdick (1995), who followed that of previous FWS investigators (Archer et al. 1980; Miller et al. 1982). The study area will be divided into the four primary study strata described by Burdick (1995) varying in length from 11.3 to 17.9 miles. Burdick selected one 5.5-mile sub-reach (starting mile selected from a random numbers table) within each stratum each time a pass was made; hence, sampling reaches were not consistent through time. Because we will make fewer annual passes than did Burdick, it is possible that such a method may not provide a good annual representation of the fish or habitat of each stratum, making among-year comparisons of catch rate difficult. We will therefore deviate from this protocol by sampling smaller sub-reaches within each stratum and spreading them out spatially so as to assure better geographic coverage and representation of each stratum. Three sub-reaches will be selected randomly within each stratum and each will consist of one riffle-run, meander sequence (approximately 0.5-2.0 miles long); these same three sub-reaches will be sampled each time an electrofishing pass is made. Most reaches (between available launch sites) in the Gunnison River downstream of Delta are long and electrofishing crews will need to camp as they proceed downriver. One week will be required to complete one shocking pass. Two post-runoff electrofishing passes will be completed annually, one in late July or early August and the other in either late September or early October.

Two 2-person crews will electrofish the right and left shorelines simultaneously, in a downstream direction, using either rafts or hard-bottomed boats. Electrofishing crews will attempt to collect all stunned fish within these sub-reaches. Fish will be worked up separately for each sub-reach and shocking time recorded for each. All fish collected in these sub-reaches will be identified by species, enumerated by life-stage (based on species-specific length classes), weighed (to the nearest gram), and measured (to the nearest mm total length {TL}). All T&E fish (bonytail, Colorado pikeminnow, and razorback sucker), as well as roundtail chub (in support of CPW's 3-species monitoring), collected in these sub-reaches will follow that same protocol, but they will also be checked for the presence of a PIT tag. Endangered fish species will have a muscle plug taken from them (see below). If no PIT tag is present in a T&E fish, one will be implanted. Roundtail chub will neither be PIT-tagged nor have muscle plugs taken. All native fish will be returned alive to the river.

In the sections of river separating sub-reaches, electrofishing will continue to be conducted. However, only T&E fish will be collected in these “in-between” sections of river. This will allow complete coverage for endangered fish sampling (see above). Handling protocols for T&E fish collected in these “in-between” areas will be the same as those listed above.

Muscle plugs will be taken from adult Colorado pikeminnow and razorback sucker following procedures specified by Williamson (1992). Muscle plugs will be taken using a 5-mm biopsy punch. A different punch will be used on each fish and discarded after use. Muscle plugs will be taken 1 to 2 cm below the dorsal fin by inserting the punch with a slight twisting motion. Tilting the punch allows the tissue sample to break off at the end. The sample will be emptied into sterile cryogenic vials, placed on dry (or wet) ice in the field until they are eventually frozen. Wounds will be disinfected using betadine swabs, to decrease the chance of infection. Selenium analyses will be conducted by neutron activation, which is the method of choice for selenium analysis on small biomass samples. Up to 30 muscle plug (MP) samples may be taken in a given year (10 adult razorback; 10 adult pikeminnow; 10 bonytail).

### Colorado River

The fish community sampling protocol established during Project 48-A (see Osmundson 1999) will be repeated in the 18-mile reach. At that time, the river from Rifle to Westwater was stratified by geomorphology and tributary input. On aerial photos, each of five strata was divided into multiple reaches, each consisting of one meander (riffle-run) sequence 0.5-1.2 miles long. The reaches were numbered and three study reaches were selected within each stratum using a random numbers table. The 18-mile reach was one of the strata and the three study reaches selected within the 18-mile reach then will continue to be sampled for this SOW. Both shorelines will be sampled with boat electrofishing. To keep effort consistent with the earlier methods, two netters will be stationed at the front of each boat. Fish will be identified, measured for TL, and weighed. Two boats with a crew of three people each will be needed. One deviation from the earlier design, however, will be to reduce costs by sampling only once per year in the fall (Sep-Oct), instead of both spring and fall.

In 2013, population estimates of razorback sucker (> 400 mm TL) were developed for the years 2008, 2009, and 2010 (Osmundson in prep.) from data collected during the Colorado pikeminnow monitoring project (Recovery Program Project No. 127). The preliminary estimates of were: 2008 – 2,035 (1,333-2738), 2009 – 1,680 (1,070-2,291), 2010 – 1,637 (1,179-2,095). Ninety-five percent CIs are in parenthesis. This will provide a baseline for adult razorback sucker monitoring. Estimates will again be calculated in 2017 for the years 2013, 2014, and 2015 also using data collected during the Colorado pikeminnow monitoring project (Recovery Program Project No. 127).



Larval sampling will follow the protocol outlined above for the Gunnison River, extending from mid-May through the first week of August for razorback larvae. If at some point it is deemed feasible to begin sampling for larval Colorado pikeminnow, that sampling would occur from mid-June through the end of August (pending available funding, personnel, and equipment). The 18-mile reach and from Loma downstream to the Colorado-Utah state line will be sampled for comparison with results of Osmundson and Seal (2009).

Fall YOY sampling will be restricted to the 18-mile reach and Loma downstream to the Colorado-Utah state line, following ISMP protocol with two seine hauls in each of two backwaters within each 5-mile reach (see McAda et al. 1994).

The Principal Investigator will train crew members, act as overall crew leader and actively participate in data collection efforts. Along with annual data collection efforts, additional time will be required prior to field sampling to ready equipment and train new crew members in motor boat operation and field techniques specific to this project and later to input and check data.

The Principal Investigator will work closely with a biostatistician familiar with running program MARK to estimate razorback sucker abundance in the Colorado River and abundance of both Colorado pikeminnow and razorback sucker in the Gunnison River if mark-recapture estimation proves feasible there.

## VII. Task Description and Schedule

### Description

- |          |   |
|----------|---|
| Task 1.  | Electrofish Gunnison River for endangered fish CPE, fish community monitoring, and fish tissue collection; two trips (late July or early August and again in mid-September to mid-October). |
| Task 2.  | Electrofish Colorado River for fish community monitoring; one trip (late September or early October).   |
| Task 3.  | Sample fish larvae (mid-May to early July): Colorado River  |
| Task 4.  | Sample fish larvae (mid-May to early July): Gunnison River  |
| Task 5.  | Sample YOY in the Gunnison River (one pass – in late September or early October)  |
| Task 6.  | Sample YOY in the Colorado River (one pass – in late September or early October)  |
| Task 7.  | Analyze tissue samples for selenium   |
| Task 8.  | Develop population estimates of razorback sucker in Colorado River  |
| Task 9.  | Analyze larval samples (Larval Fish Lab)  |
| Task 10. | Analyze data  |
| Task 11. | Write annual reports  |

- Task 12. Prepare final contaminants report (Barb Osmundson)
- Task 13. Prepare final fish monitoring report No. 1 (Large-bodied and YOY fish)
- Task 14. Prepare final fish monitoring report No. 2 (Larval fish)

Schedule

|   |      |
|---|------|
| Task 1, 2, 3, 4, 5, 6, 7, 9, 10, 11:        | 2018 |
| Task 1, 2, 3, 4, 5, 6, 7, 9, 10, 11,        | 2019 |
| Task 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13:    | 2020 |
| Task 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14: | 2021 |
| Task 1, 2, 3, 4, 5, 6, 7, 9, 10, 11:        | 2022 |

**VIII. FY-2018 Work (Eighth year of multi-year study)**

**Deliverables/Due Dates:** Annual Report for 2018 field work due 11/2018

## Budget

| <b>Task 1. Electrofish Gunnison River (two 5-day trips x 6 people/trip)</b> |  |                            |                                  |                       |             |                 |
|---|--|----------------------------|----------------------------------|-----------------------|-------------|-----------------|
| <b>Labor (Federal Salary + Benefits)</b>                                    |  |                            |                                  |                       |             |                 |
|   | <b>Title</b>   | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b>    | <b>Rate</b> | <b>Total</b>    |
|   | Fishery Biologist (GS-11)  | 1                          | 120                              | 120                   | \$52.80     | \$6,336         |
|   | Biological Technician Crew Leader (GS-7)   | 1                          | 80                               | 80                    | \$31.82     | \$2,546         |
|   | Biological Technician (GS-5)   | 4                          | 72                               | 288                   | \$22.94     | \$6,607         |
| <b>Labor Subtotal</b>   |  |                            |                                  |                       |             | <b>\$15,488</b> |
| <b>Travel</b>   |  |                            |                                  |                       |             |                 |
|   | <b>Per Diem (Camp Rate = \$28/day)</b>   | <b>Number of Personnel</b> | <b>Days Per Trip</b>             | <b>Trips Per Year</b> | <b>Rate</b> | <b>Total</b>    |
|   | 6 people x 5 days/trip x 2 trips   | 6                          | 5                                | 2                     | \$28.00     | \$1,680         |
| <b>Travel Subtotal</b>  |  |                            |                                  |                       |             | <b>\$1,680</b>  |
| <b>Equipment and Supplies</b>   |  |                            |                                  |                       |             |                 |
|   |  |                            |                                  | <b>Units</b>          | <b>Rate</b> | <b>Total</b>    |
|   | Generator repair/tune-up (4 hours @ \$75/hour)   |                            |                                  | 4                     | \$75.00     | \$300           |
|   | Raft trailer maintenance   |                            |                                  | 1                     | \$30.00     | \$30            |
|   | Repair raft frames - aluminum welding  |                            |                                  | 3                     | \$150.00    | \$450           |
|   | Spark plugs  |                            |                                  | 2                     | \$7.50      | \$15            |
|   | Boat Gas (5 gallons per day per boat)  |                            |                                  | 100                   | \$4.00      | \$400           |
|   | (2 boats per trip/5 days per trip/2 trips per year)  |                            |                                  |                       |             |                 |
| <b>Equipment and Supplies Subtotal</b>                                      |  |                            |                                  |                       |             | <b>\$1,195</b>  |
| <b>Vehicles</b>   |  |                            |                                  |                       |             |                 |
|   | <b>Vehicle maintenance and fuel (\$365/month lease = \$12.17 per day based on 30 days in an "average" month + \$0.42/mile)</b> | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b>    | <b>Rate</b> | <b>Total</b>    |

|  |   |                            |                                  |                    |             |                 |
|--|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
| 3 vehicles for boats 5 days/trip x 2 trips/year  |   | 3                          | 10                               | 30                 | \$12.17     | \$365           |
| 1 shuttle vehicle x 2 day/trip x 2 trips/year  |   | 1                          | 4                                | 4                  | \$12.17     | \$49            |
| 4 vehicles x 80 miles round-trip = 320 total miles   |   | 4                          | 80                               | 320                | \$0.42      | \$134           |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |             | <b>\$548</b>    |
| <b>Task 1 Total</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$18,912</b> |
| <b>Task 2 Electrofish 18-Mile Reach of the Colorado River (one 2-day trip x 4 people trip)</b> |   |                            |                                  |                    |             |                 |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Fishery Biologist (GS-11)   | 1                          | 16                               | 16                 | \$52.80     | \$845           |
|  | Biological Technician (GS-5)  | 2                          | 32                               | 64                 | \$22.94     | \$1,468         |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    |             | <b>\$2,313</b>  |
| <b>Travel - No per diem required for this task</b>   |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|  | Duraframe electrofishing dip nets   |                            |                                  | 2                  | \$300.00    | \$600           |
|  | Gas (10 gallons per day per boat) for outboards and generators  |                            |                                  | 20                 | \$4.00      | \$80            |
| <b>Equipment and Supplies Subtotal</b>   |   |                            |                                  |                    |             | <b>\$680</b>    |
| <b>Vehicles</b>  |   |                            |                                  |                    |             |                 |
|  | Vehicle maintenance and fuel (\$365/month lease = \$12.17 per day based on 30 days in an "average" month + \$0.42/mile) |                            |                                  |                    |             |                 |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|  | 2 vehicles for boats 2 days/trip x 1 trip/year  | 2                          | 2                                | 4                  | \$12.17     | \$49            |
|  | 1 shuttle vehicle x 2 day/trip x 1 trip/year  | 1                          | 2                                | 2                  | \$12.17     | \$24            |
|  | 3 vehicles x 23 miles round-trip x 2 days   | 3                          | 23                               | 138                | \$0.42      | \$58            |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |             | <b>\$131</b>    |

|  |   |   |                                  |                    |             |                 |       |
|--|---|---|----------------------------------|--------------------|-------------|-----------------|-------|
| <b>Task 2 Total</b>  |   |   |                                  |                    |             | <b>\$3,124</b>  |       |
| <b>Task 3. Sample larvae in the Gunnison River (4 days/week for 8 weeks)</b> |   |   |                                  |                    |             |                 |       |
| <b>Labor (Federal Salary + Benefits)</b>                                     |   |   |                                  |                    |             |                 |       |
|  | <b>Title</b>  | <b>Number of Personnel</b>                          | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |       |
|  | Biological Technician Crew Leader (GS-7)  | 1   | 200                              | 200                | \$31.82     | \$6,364         |       |
|  | Biological Technician (GS-5)  | 2   | 200                              | 400                | \$22.94     | \$9,176         |       |
| <b>Labor Subtotal</b>  |   |   |                                  |                    |             | <b>\$15,540</b> |       |
| <b>Travel - No per diem required for this task</b>                           |   |   |                                  |                    |             |                 |       |
|  |   |   |                                  |                    |             | <b>\$0</b>      |       |
| <b>Equipment and Supplies</b>  |   |   |                                  |                    |             |                 |       |
|  |   |   |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |       |
|  | Boat Gas (5 gallons per day per boat)   |   |                                  | 640                | \$4.00      | \$2,560         |       |
|  | Ethanol (95%) two 3-gallon containers   |   |                                  | 2                  | \$120.00    | \$240           |       |
|  | Sample bottles (\$325 per case)   |   |                                  | 1                  | \$325.00    | \$325           |       |
| <b>Equipment and Supplies Subtotal</b>                                       |   |   |                                  |                    |             | <b>\$3,125</b>  |       |
| <b>Vehicles</b>  |   |   |                                  |                    |             |                 |       |
|  | Vehicle maintenance and fuel (\$365/month lease = \$12.17 per day based on 30 days in an "average" month + \$0.42/mile) |   |                                  |                    |             |                 |       |
|  |   | <b>Number of Vehicles</b>                           | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |       |
|  |   | Delta to Escalante Section (2 vehicles) \$12.17/day | 2                                | 8                  | 16          | \$12.17         | \$195 |
|  |   | Delta to Escalante Section (2 vehicles) \$0.42/mile | 2                                | 640                | 1280        | \$0.42          | \$538 |
|  |   | Escalante to Bridgeport (2 vehicles) \$12.17/day    | 2                                | 8                  | 16          | \$12.17         | \$195 |
|  |   | Escalante to Bridgeport (2 vehicles) \$0.42/mile    | 2                                | 480                | 960         | \$0.42          | \$403 |
|  |   | Bridgeport to Whitewater (2 vehicles) \$12.17/day   | 2                                | 8                  | 16          | \$12.17         | \$195 |
|  |   | Bridgeport to Whitewater (2 vehicles) \$0.42/mile   | 2                                | 320                | 640         | \$0.42          | \$269 |

|  |  |                            |                         |                    |             |                 |
|--|--|----------------------------|-------------------------|--------------------|-------------|-----------------|
| Whitewater to Redlands Dame (2 vehicles) \$12.17/day                                     |  | 2                          | 8                       | 16                 | \$12.17     | \$195           |
| Whitewater to Redlands Dame (2 vehicles) \$0.42/mile                                     |  | 2                          | 160                     | 320                | \$0.42      | \$134           |
| <b>Vehicles subtotal</b>   |  |                            |                         |                    |             | <b>\$2,123</b>  |
| <b>Task 3 Total</b>  |  |                            |                         |                    |             |                 |
|  |  |                            |                         |                    |             |                 |
| <b>Task 4. Sample larvae in the Colorado River (2 10-hour days per week for 8 weeks)</b> |  |                            |                         |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>   |  |                            |                         |                    |             |                 |
|  | <b>Title</b>                               | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Fishery Biologist (GS-11)                  | 1                          | 200                     | 200                | \$52.80     | \$10,560        |
|  | Biological Technician (GS-5)               | 2                          | 128                     | 256                | \$22.94     | \$5,873         |
| <b>Labor Subtotal</b>  |  |                            |                         |                    |             | <b>\$16,433</b> |
| <b>Travel - No per diem required for this task</b>                                       |  |                            |                         |                    |             |                 |
|  |  |                            |                         |                    |             |                 |
| <b>Equipment and Supplies</b>  |  |                            |                         |                    |             |                 |
|  |  |                            |                         | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|  | Stearns Type III life jackets              |                            |                         | 3                  | \$70.00     | \$210           |
|  | Larval Seines                              |                            |                         | 3                  | \$200.00    | \$600           |
|  | Hip waders                                 |                            |                         | 2                  | \$50.00     | \$100           |
|  | Chest waders                               |                            |                         | 1                  | \$125.00    | \$125           |
|  | Boat Gas (5 gallons per day per boat)      |                            |                         | 200                | \$4.00      | \$800           |
|  | Ethanol (95%) one 3-gallon container       |                            |                         | 1                  | \$120.00    | \$120           |
|  | Sample bottles (\$325 per case)            |                            |                         | 1                  | \$325.00    | \$325           |
| <b>Equipment and Supplies Subtotal</b>   |  |                            |                         |                    |             | <b>\$2,280</b>  |
| <b>Vehicles</b>  |  |                            |                         |                    |             |                 |
|  | Vehicle maintenance and fuel (\$365/month) |                            |                         |                    |             |                 |

|   |   |                            |                                  |                    |             |                 |
|---|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
|   | lease = \$12.17 per day based on 30 days in an "average" month + \$0.42/mile)   |                            | <b>Days or Miles per Vehicle</b> |                    |             |                 |
|   |   | <b>Number of Vehicles</b>  |                                  | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|   | Redlands Dam to Redlands Parkway  | 2                          | 8                                | 16                 | \$12.17     | \$195           |
|   | Redlands Dam to Redlands Parkway  | 2                          | 160                              | 320                | \$0.42      | \$134           |
|   | Redlands Parkway to Loma  | 2                          | 8                                | 16                 | \$12.17     | \$195           |
|   | Redlands Parkway to Loma  | 2                          | 160                              | 320                | \$0.42      | \$134           |
| <b>Vehicles subtotal</b>  |   |                            |                                  |                    |             | <b>\$658</b>    |
| <b>Task 4 Total</b>   |   |                            |                                  |                    |             |                 |
|   |   |                            |                                  |                    |             | <b>\$19,371</b> |
| <b>Task 5. Sample YOY in the Gunnison River (one trip per year)</b> |   |                            |                                  |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                                  |                    |             |                 |
|   |   |                            | <b>Hours Per Person</b>          |                    |             |                 |
|   | <b>Title</b>  | <b>Number of Personnel</b> |                                  | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|   | Fishery Biologist (GS-11)   | 1                          | 48                               | 48                 | \$52.80     | \$2,534         |
|   | Biological Technician (GS-5)  | 3                          | 48                               | 144                | \$22.94     | \$3,303         |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             | <b>\$5,838</b>  |
| <b>Travel - No per diem required for this task</b>                  |   |                            |                                  |                    |             |                 |
|   |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>                                       |   |                            |                                  |                    |             |                 |
|   |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|   | Boat Gas  |                            |                                  | 100                | \$4.00      | \$400           |
|   | Ethanol (95%) one 3-gallon container  |                            |                                  | 1                  | \$120.00    | \$120           |
| <b>Equipment and Supplies Subtotal</b>                              |   |                            |                                  |                    |             | <b>\$520</b>    |
| <b>Vehicles</b>   |   |                            |                                  |                    |             |                 |
|   | Vehicle maintenance and fuel (\$365/month lease = \$12.17 per day based on 30 days in an "average" month + \$0.42/mile) |                            |                                  |                    |             |                 |
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |

|   |   |                            |                         |                    |                |
|---|---|----------------------------|-------------------------|--------------------|----------------|
| Delta to Escalante (2 vehicles) \$12.17/day                         | 2   | 1                          | 2                       | \$12.17            | \$24           |
| Delta to Escalante (2 vehicles) \$0.42/mile                         | 2   | 80                         | 160                     | \$0.42             | \$67           |
| Escalante to Bridgeport (2 vehicles) \$12.17/day                    | 2   | 1                          | 2                       | \$12.17            | \$24           |
| Escalante to Bridgeport (2 vehicles) \$0.42/mile                    | 2   | 60                         | 120                     | \$0.42             | \$50           |
| Bridgeport to Whitewater (2 vehicles) \$12.17/day                   | 2   | 1                          | 2                       | \$12.17            | \$24           |
| Bridgeport to Whitewater (2 vehicles) \$0.42/mile                   | 2   | 40                         | 80                      | \$0.42             | \$34           |
| Whitewater to Redlands Dame (2 vehicles) \$12.17/day                | 2   | 1                          | 2                       | \$12.17            | \$24           |
| Whitewater to Redlands Dame (2 vehicles) \$0.42/mile                | 2   | 20                         | 40                      | \$0.42             | \$17           |
| <b>Vehicles Subtotal</b>  |   |                            |                         |                    | <b>\$265</b>   |
| <b>Task 5 Total</b>   |   |                            |                         |                    |                |
|   |   |                            |                         |                    | <b>\$6,623</b> |
| <b>Task 6. Sample YOY in the Colorado River (one trip per year)</b> |   |                            |                         |                    |                |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                         |                    |                |
|   | <b>Title</b>                              | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b>    |
|   | Fishery Biologist (GS-11)                 | 1                          | 32                      | 32                 | \$52.80        |
|   | Biological Technician (GS-5)              | 3                          | 32                      | 96                 | \$22.94        |
|   | <b>Labor Subtotal</b>                     |                            |                         |                    | <b>\$3,892</b> |
| <b>Travel - No per diem required for this task</b>                  |   |                            |                         |                    |                |
|   |   |                            |                         |                    | <b>\$0</b>     |
| <b>Equipment and Supplies</b>                                       |   |                            |                         |                    |                |
|   |   |                            | <b>Units</b>            | <b>Rate</b>        | <b>Total</b>   |
|   | Boat Gas                                  |                            | 47                      | \$4.00             | \$188          |
|   | Ethanol (95%) one 3-gallon container      |                            | 1                       | \$120.00           | \$120          |
|   | <b>Equipment and Supplies Subtotal</b>    |                            |                         |                    | <b>\$308</b>   |
| <b>Vehicles</b>   | Vehicle maintenance and fuel (\$365/month |                            |                         |                    |                |



|   | lease = \$12.17 per day based on 30 days in an "average" month + \$0.42/mile) | Number of Vehicles         | Days or Miles per Vehicle | Total Units        | Rate        | Total          |
|---|---|----------------------------|---------------------------|--------------------|-------------|----------------|
|   | Redlands Dam to Redlands Parkway \$12.17/day                                  | 2                          | 1                         | 2                  | \$12.17     | \$24           |
|   | Redlands Dam to Redlands Parkway \$0.42/mile                                  | 2                          | 20                        | 40                 | \$0.42      | \$17           |
|   | Redlands Parkway to Loma \$12.17/day  | 2                          | 1                         | 2                  | \$12.17     | \$24           |
|   | Redlands Parkway to Loma \$0.42/mile  | 2                          | 20                        | 40                 | \$0.42      | \$17           |
|   | Loma to Stateline \$12.17/day   | 2                          | 1                         | 2                  | \$12.17     | \$24           |
|   | Loma to Stateline \$0.42/mile   | 2                          | 36                        | 72                 | \$0.42      | \$30           |
| <b>Vehicles subtotal</b>  |   |                            |                           |                    |             | <b>\$137</b>   |
| <b>Task 6 Total</b>   |   |                            |                           |                    |             | <b>\$4,337</b> |
| <b>Task 7. Analyze muscle plug samples to determine selenium concentrations (USFWS - Ecological Services)</b> |   |                            |                           |                    |             |                |
| <b>Task 7 Total</b>   |   |                            |                           |                    |             | <b>\$0</b>     |
| <b>Task 9. Analyze larval fish samples (CSU-LFL). Funded under a separate agreement.</b>                      |   |                            |                           |                    |             |                |
| <b>Task 9 Total</b>   |   |                            |                           |                    |             | <b>\$0</b>     |
| <b>Tasks 10 and 11. Input and analyze data, write annual report.</b>  |   |                            |                           |                    |             |                |
| <b>Labor (Federal Salary + Benefits)</b>  |   |                            |                           |                    |             |                |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>   | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>   |
|   | Fishery Biologist (GS-11)   | 1                          | 160                       | 160                | \$52.80     | \$8,448        |
| <b>Labor Subtotal</b>   |   |                            |                           |                    |             | <b>\$8,448</b> |
| <b>Tasks 10 and 11 Total</b>  |   |                            |                           |                    |             | <b>\$8,448</b> |
| <b>Project Management: Permitting, Coordination, Office and Administrative Support</b>                        |   |                            |                           |                    |             |                |
| <b>Labor (Federal Salary + Benefits)</b>  |   |                            |                           |                    |             |                |

|                                 | Title                              | Number of Personnel | Hours Per Person | Total Hours | Rate    | Total           |
|---------------------------------|------------------------------------|---------------------|------------------|-------------|---------|-----------------|
|                                 | Administrative Officer             | 1                   | 40               | 40          | \$42.14 | \$1,686         |
|                                 | Project Leader                     | 1                   | 40               | 40          | \$80.95 | \$3,238         |
| <b>Labor Subtotal</b>           |                                    |                     |                  |             |         | <b>\$4,924</b>  |
| <b>Project Management Total</b> |                                    |                     |                  |             |         | <b>\$4,924</b>  |
| <b>Totals by Task</b>           |                                    |                     |                  |             |         |                 |
|                                 | Task 1 (USFWS-GJFWCO)              |                     |                  |             |         | <b>\$18,912</b> |
|                                 | Task 2 (USFWS-GJFWCO)              |                     |                  |             |         | <b>\$3,124</b>  |
|                                 | Task 3 (USFWS-GJFWCO)              |                     |                  |             |         | <b>\$20,788</b> |
|                                 | Task 4 (USFWS-GJFWCO)              |                     |                  |             |         | <b>\$19,371</b> |
|                                 | Task 5 (USFWS-GJFWCO)              |                     |                  |             |         | <b>\$6,623</b>  |
|                                 | Task 6 (USFWS-GJFWCO)              |                     |                  |             |         | <b>\$4,337</b>  |
|                                 | Task 7 (USFWS-Ecological Services) |                     |                  |             |         | <b>\$0</b>      |
|                                 | Task 9 (CSU-LFL)                   |                     |                  |             |         | <b>\$0</b>      |
|                                 | Tasks 10 and 11 (USFWS-GJFWCO)     |                     |                  |             |         | <b>\$8,448</b>  |
|                                 | Project Management (USFWS-GJFWCO)  |                     |                  |             |         | <b>\$4,924</b>  |
| <b>FY 2018 Grand Total</b>      |                                    |                     |                  |             |         | <b>\$86,526</b> |

**FY 2019 (Ninth year of Multi-year Study)**

**Deliverable/Due Dates:** Annual Report for 2019 field work due 11/2019

**Budget**

| <b>Task 1. Electrofish Gunnison River (two 5-day trips x 6 people/trip)</b> |   |                            |                         |                       |             |                 |
|---|---|----------------------------|-------------------------|-----------------------|-------------|-----------------|
| <b>Labor (Federal Salary + Benefits)</b>                                    |   |                            |                         |                       |             |                 |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b>    | <b>Rate</b> | <b>Total</b>    |
|   | Fishery Biologist (GS-11)                           | 1                          | 120                     | 120                   | \$53.84     | \$6,461         |
|   | Biological Technician Crew Leader (GS-7)            | 1                          | 80                      | 80                    | \$32.46     | \$2,597         |
|   | Biological Technician (GS-5)                        | 4                          | 72                      | 288                   | \$23.40     | \$6,739         |
| <b>Labor Subtotal</b>   |   |                            |                         |                       |             | <b>\$15,797</b> |
| <b>Travel</b>   |   |                            |                         |                       |             |                 |
|   | <b>Per Diem (Camp Rate = \$28/day)</b>              | <b>Number of Personnel</b> | <b>Days Per Trip</b>    | <b>Trips Per Year</b> | <b>Rate</b> | <b>Total</b>    |
|   | 6 people x 5 days/trip x 2 trips                    | 6                          | 5                       | 2                     | \$28.00     | \$1,680         |
| <b>Travel Subtotal</b>  |   |                            |                         |                       |             | <b>\$1,680</b>  |
| <b>Equipment and Supplies</b>   |   |                            |                         |                       |             |                 |
|   |   |                            |                         | <b>Units</b>          | <b>Rate</b> | <b>Total</b>    |
|   | Generator repair/tune-up (4 hours @ \$76.50/hour)   |                            |                         | 4                     | \$76.50     | \$306           |
|   | Raft trailer maintenance                            |                            |                         | 1                     | \$30.60     | \$31            |
|   | Repair raft frames - aluminum welding               |                            |                         | 3                     | \$153.00    | \$459           |
|   | Spark plugs   |                            |                         | 2                     | \$7.65      | \$15            |
|   | Boat Gas (5 gallons per day per boat)               |                            |                         | 100                   | \$4.08      | \$408           |
|   | (2 boats per trip/5 days per trip/2 trips per year) |                            |                         |                       |             |                 |
| <b>Equipment and Supplies Subtotal</b>                                      |   |                            |                         |                       |             | <b>\$1,219</b>  |

| <b>Vehicles</b>  | Vehicle maintenance and fuel (\$372/month lease = \$12.41 per day based on 30 days in an "average" month + \$0.43/mile) |                            |                                  |                    |             |                 |
|--|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|  | 3 vehicles for boats 5 days/trip x 2 trips/year   | 3                          | 10                               | 30                 | \$12.41     | \$372           |
|  | 1 shuttle vehicle x 2 day/trip x 2 trips/year   | 1                          | 4                                | 4                  | \$12.41     | \$50            |
|  | 4 vehicles x 80 miles round-trip = 320 total miles  | 4                          | 80                               | 320                | \$0.43      | \$138           |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |             | <b>\$560</b>    |
| <b>Task 1 Total</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$19,255</b> |
| <b>Task 2 Electrofish 18-Mile Reach of the Colorado River (one 2-day trip x 4 people trip)</b> |   |                            |                                  |                    |             |                 |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Fishery Biologist (GS-11)   | 1                          | 16                               | 16                 | \$53.84     | \$861           |
|  | Biological Technician (GS-5)  | 2                          | 32                               | 64                 | \$23.40     | \$1,498         |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    |             | <b>\$2,359</b>  |
| <b>Travel - No per diem required for this task</b>   |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|  | Duraframe electrofishing dip nets   |                            |                                  | 2                  | \$306.00    | \$612           |
|  | Gas (10 gallons per day per boat) for outboards and generators  |                            |                                  | 20                 | \$4.08      | \$82            |
| <b>Equipment and Supplies Subtotal</b>   |   |                            |                                  |                    |             | <b>\$694</b>    |
| <b>Vehicles</b>  | Vehicle maintenance and fuel (\$372/month lease = \$12.41 per day based on 30 days in an "average" month + \$0.43/mile) |                            |                                  |                    |             |                 |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |

|  |   |                            |                                  |                    |             |                 |
|--|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
| 2 vehicles for boats 2 days/trip x 1 trip/year                               |   | 2                          | 2                                | 4                  | \$12.41     | \$50            |
| 1 shuttle vehicle x 2 day/trip x 1 trip/year                                 |   | 1                          | 2                                | 2                  | \$12.41     | \$25            |
| 3 vehicles x 23 miles round-trip x 2 days                                    |   | 3                          | 23                               | 138                | \$0.43      | \$59            |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |             | <b>\$134</b>    |
| <b>Task 2 Total</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$3,186</b>  |
| <b>Task 3. Sample larvae in the Gunnison River (4 days/week for 8 weeks)</b> |   |                            |                                  |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>                                     |   |                            |                                  |                    |             |                 |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Biological Technician Crew Leader (GS-7)  | 1                          | 200                              | 200                | \$32.46     | \$6,492         |
|  | Biological Technician (GS-5)  | 2                          | 200                              | 400                | \$23.40     | \$9,360         |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    |             | <b>\$15,852</b> |
| <b>Travel - No per diem required for this task</b>                           |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|  | Boat Gas (5 gallons per day per boat)   |                            |                                  | 640                | \$4.08      | \$2,611         |
|  | Ethanol (95%) two 3-gallon containers   |                            |                                  | 2                  | \$122.40    | \$245           |
|  | Sample bottles (\$325 per case)   |                            |                                  | 1                  | \$331.50    | \$332           |
| <b>Equipment and Supplies Subtotal</b>                                       |   |                            |                                  |                    |             | <b>\$3,188</b>  |
| <b>Vehicles</b>  |   |                            |                                  |                    |             |                 |
|  | Vehicle maintenance and fuel (\$372/month lease = \$12.41 per day based on 30 days in an "average" month + \$0.43/mile) |                            |                                  |                    |             |                 |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|  | Delta to Escalante Section (2 vehicles) \$12.41/day   | 2                          | 8                                | 16                 | \$12.41     | \$199           |
|  | Delta to Escalante Section (2 vehicles) \$0.43/mile   | 2                          | 640                              | 1280               | \$0.43      | \$550           |

|  |                                       |                            |                         |                    |                 |
|--|---------------------------------------|----------------------------|-------------------------|--------------------|-----------------|
| Escalante to Bridgeport (2 vehicles) \$12.41/day   | 2                                     | 8                          | 16                      | \$12.41            | \$199           |
| Escalante to Bridgeport (2 vehicles) \$0.43/mile   | 2                                     | 480                        | 960                     | \$0.43             | \$413           |
| Bridgeport to Whitewater (2 vehicles) \$12.41/day  | 2                                     | 8                          | 16                      | \$12.41            | \$199           |
| Bridgeport to Whitewater (2 vehicles) \$0.43/mile  | 2                                     | 320                        | 640                     | \$0.43             | \$275           |
| Whitewater to Redlands Dame (2 vehicles) \$12.41/day                                     | 2                                     | 8                          | 16                      | \$12.41            | \$199           |
| Whitewater to Redlands Dame (2 vehicles) \$0.43/mile                                     | 2                                     | 160                        | 320                     | \$0.43             | \$138           |
| <b>Vehicles subtotal</b>   |                                       |                            |                         |                    | <b>\$2,170</b>  |
| <b>Task 3 Total</b>  |                                       |                            |                         |                    |                 |
|  |                                       |                            |                         |                    | <b>\$21,210</b> |
| <b>Task 4. Sample larvae in the Colorado River (2 10-hour days per week for 8 weeks)</b> |                                       |                            |                         |                    |                 |
| <b>Labor (Federal Salary + Benefits)</b>   |                                       |                            |                         |                    |                 |
|  | <b>Title</b>                          | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b>     |
|  | Fishery Biologist (GS-11)             | 1                          | 200                     | 200                | \$53.84         |
|  | Biological Technician (GS-5)          | 2                          | 128                     | 256                | \$23.40         |
|  | <b>Labor Subtotal</b>                 |                            |                         |                    | <b>\$16,758</b> |
| <b>Travel - No per diem required for this task</b>                                       |                                       |                            |                         |                    |                 |
|  |                                       |                            |                         |                    | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |                                       |                            |                         |                    |                 |
|  | Streams Type III life jackets         |                            |                         | 3                  | \$71.40         |
|  | Larval Seines                         |                            |                         | 3                  | \$204.00        |
|  | Hip waders                            |                            |                         | 2                  | \$51.00         |
|  | Chest waders                          |                            |                         | 1                  | \$127.50        |
|  | Boat Gas (5 gallons per day per boat) |                            |                         | 200                | \$4.08          |
|  | Ethanol (95%) one 3-gallon container  |                            |                         | 1                  | \$122.40        |
|  | Sample bottles (\$325 per case)       |                            |                         | 1                  | \$331.50        |
|  |                                       |                            |                         |                    | \$332           |

|   |   |                            |                                  |                    |             |                |                 |
|---|---|----------------------------|----------------------------------|--------------------|-------------|----------------|-----------------|
| <b>Equipment and Supplies Subtotal</b>                              |   |                            |                                  |                    |             |                | <b>\$2,326</b>  |
| <b>Vehicles</b>   |   |                            |                                  |                    |             |                |                 |
|   | Vehicle maintenance and fuel (\$372/month lease = \$12.41 per day based on 30 days in an "average" month + \$0.43/mile) |                            |                                  |                    |             |                |                 |
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>   |                 |
|   | Redlands Dam to Redlands Parkway  | 2                          | 8                                | 16                 | \$12.41     | \$199          |                 |
|   | Redlands Dam to Redlands Parkway  | 2                          | 160                              | 320                | \$0.43      | \$138          |                 |
|   | Redlands Parkway to Loma  | 2                          | 8                                | 16                 | \$12.41     | \$199          |                 |
|   | Redlands Parkway to Loma  | 2                          | 160                              | 320                | \$0.43      | \$138          |                 |
| <b>Vehicles subtotal</b>  |   |                            |                                  |                    |             | <b>\$672</b>   |                 |
| <b>Task 4 Total</b>   |   |                            |                                  |                    |             |                | <b>\$19,756</b> |
| <b>Task 5. Sample YOY in the Gunnison River (one trip per year)</b> |   |                            |                                  |                    |             |                |                 |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                                  |                    |             |                |                 |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>   |                 |
|   | Fishery Biologist (GS-11)   | 1                          | 48                               | 48                 | \$53.84     | \$2,584        |                 |
|   | Biological Technician (GS-5)  | 3                          | 48                               | 144                | \$23.40     | \$3,370        |                 |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             | <b>\$5,954</b> |                 |
| <b>Travel - No per diem required for this task</b>                  |   |                            |                                  |                    |             |                | <b>\$0</b>      |
| <b>Equipment and Supplies</b>                                       |   |                            |                                  |                    |             |                |                 |
|   |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>   |                 |
|   | Boat Gas  |                            |                                  | 100                | \$4.08      | \$408          |                 |
|   | Ethanol (95%) one 3-gallon container  |                            |                                  | 1                  | \$122.40    | \$122          |                 |
| <b>Equipment and Supplies Subtotal</b>                              |   |                            |                                  |                    |             | <b>\$530</b>   |                 |

| <b>Vehicles</b>   | Vehicle maintenance and fuel (\$372/month lease = \$12.41 per day based on 30 days in an "average" month + \$0.43/mile) |                            |                                  |                    |             |                |
|---|---|----------------------------|----------------------------------|--------------------|-------------|----------------|
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>   |
|   | Delta to Escalante (2 vehicles) \$12.41/day   | 2                          | 1                                | 2                  | \$12.41     | \$25           |
|   | Delta to Escalante (2 vehicles) \$0.43/mile   | 2                          | 80                               | 160                | \$0.43      | \$69           |
|   | Escalante to Bridgeport (2 vehicles) \$12.41/day  | 2                          | 1                                | 2                  | \$12.41     | \$25           |
|   | Escalante to Bridgeport (2 vehicles) \$0.43/mile  | 2                          | 60                               | 120                | \$0.43      | \$52           |
|   | Bridgeport to Whitewater (2 vehicles) \$12.41/day   | 2                          | 1                                | 2                  | \$12.41     | \$25           |
|   | Bridgeport to Whitewater (2 vehicles) \$0.43/mile   | 2                          | 40                               | 80                 | \$0.43      | \$34           |
|   | Whitewater to Redlands Dame (2 vehicles) \$12.41/day  | 2                          | 1                                | 2                  | \$12.41     | \$25           |
|   | Whitewater to Redlands Dame (2 vehicles) \$0.43/mile  | 2                          | 20                               | 40                 | \$0.43      | \$17           |
| <b>Vehicles Subtotal</b>  |   |                            |                                  |                    |             | <b>\$271</b>   |
| <b>Task 5 Total</b>   |   |                            |                                  |                    |             | <b>\$6,756</b> |
| <b>Task 6. Sample YOY in the Colorado River (one trip per year)</b> |   |                            |                                  |                    |             |                |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                                  |                    |             |                |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>   |
|   | Fishery Biologist (GS-11)   | 1                          | 32                               | 32                 | \$53.84     | \$1,723        |
|   | Biological Technician (GS-5)  | 3                          | 32                               | 96                 | \$23.40     | \$2,246        |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             | <b>\$3,969</b> |
| <b>Travel - No per diem required for this task</b>                  |   |                            |                                  |                    |             | <b>\$0</b>     |
| <b>Equipment and Supplies</b>                                       |   |                            |                                  |                    |             |                |
|   | Boat Gas  |                            |                                  | 47                 | \$4.08      | \$192          |
|   | Ethanol (95%) one 3-gallon container  |                            |                                  | 1                  | \$122.40    | \$122          |



|   |   |                            |                                  |                    |             |              |                |
|---|---|----------------------------|----------------------------------|--------------------|-------------|--------------|----------------|
| <b>Equipment and Supplies Subtotal</b>  |   |                            |                                  |                    |             |              | <b>\$314</b>   |
| <b>Vehicles</b>   |   |                            |                                  |                    |             |              |                |
|   | Vehicle maintenance and fuel (\$372/month lease = \$12.41 per day based on 30 days in an "average" month + \$0.43/mile) |                            |                                  |                    |             |              |                |
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b> |                |
|   | Redlands Dam to Redlands Parkway \$12.41/day  | 2                          | 1                                | 2                  | \$12.41     | \$25         |                |
|   | Redlands Dam to Redlands Parkway \$0.43/mile  | 2                          | 20                               | 40                 | \$0.43      | \$17         |                |
|   | Redlands Parkway to Loma \$12.41/day  | 2                          | 1                                | 2                  | \$12.41     | \$25         |                |
|   | Redlands Parkway to Loma \$0.43/mile  | 2                          | 20                               | 40                 | \$0.43      | \$17         |                |
|   | Loma to Stateline \$12.41/day   | 2                          | 1                                | 2                  | \$12.41     | \$25         |                |
|   | Loma to Stateline \$0.43/mile   | 2                          | 36                               | 72                 | \$0.43      | \$31         |                |
| <b>Vehicles subtotal</b>  |   |                            |                                  |                    |             |              | <b>\$140</b>   |
| <b>Task 6 Total</b>   |   |                            |                                  |                    |             |              | <b>\$4,423</b> |
| <b>Task 7. Analyze muscle plug samples to determine selenium concentrations (USFWS - Ecological Services)</b> |   |                            |                                  |                    |             |              |                |
| <b>Task 7 Total</b>   |   |                            |                                  |                    |             |              | <b>\$0</b>     |
| <b>Task 9. Analyze larval fish samples (CSU-LFL). Funded under a separate agreement.</b>                      |   |                            |                                  |                    |             |              |                |
| <b>Task 9 Total</b>   |   |                            |                                  |                    |             |              | <b>\$0</b>     |
| <b>Tasks 10 and 11. Input and analyze data, write annual report.</b>  |   |                            |                                  |                    |             |              |                |
| <b>Labor (Federal Salary + Benefits)</b>  |   |                            |                                  |                    |             |              |                |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b> |                |
|   | Fishery Biologist (GS-11)   | 1                          | 160                              | 160                | \$53.84     | \$8,614      |                |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             |              | <b>\$8,614</b> |
| <b>Tasks 10 and 11 Total</b>  |   |                            |                                  |                    |             |              | <b>\$8,614</b> |

| <b>Project Management: Permitting, Coordination, Office and Administrative Support</b> |                                    |                            |                         |                    |             |                 |
|--|------------------------------------|----------------------------|-------------------------|--------------------|-------------|-----------------|
| <b>Labor (Federal Salary + Benefits)</b>   |                                    |                            |                         |                    |             |                 |
|  | <b>Title</b>                       | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Administrative Officer             | 1                          | 40                      | 40                 | \$42.98     | \$1,719         |
|  | Project Leader                     | 1                          | 40                      | 40                 | \$82.57     | \$3,303         |
| <b>Labor Subtotal</b>  |                                    |                            |                         |                    |             | <b>\$5,022</b>  |
| <b>Project Management Total</b>  |                                    |                            |                         |                    |             | <b>\$5,022</b>  |
| <b>Totals by Task</b>  |                                    |                            |                         |                    |             |                 |
|  | Task 1 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$19,255</b> |
|  | Task 2 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$3,186</b>  |
|  | Task 3 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$21,210</b> |
|  | Task 4 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$19,756</b> |
|  | Task 5 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$6,756</b>  |
|  | Task 6 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$4,423</b>  |
|  | Task 7 (USFWS-Ecological Services) |                            |                         |                    |             | <b>\$0</b>      |
|  | Task 9 (CSU-LFL)                   |                            |                         |                    |             | <b>\$0</b>      |
|  | Tasks 10 and 11 (USFWS-GJFWCO)     |                            |                         |                    |             | <b>\$8,614</b>  |
|  | Project Management (USFWS-GJFWCO)  |                            |                         |                    |             | <b>\$5,022</b>  |
| <b>FY 2019 Grand Total</b>   |                                    |                            |                         |                    |             | <b>\$88,223</b> |

**FY 2020 (Tenth Year of Multi-year Study)**

**Deliverables/Due Dates:** Annual Report for 2020 field work due 11/2020

**Budget**

| <b>Task 1. Electrofish Gunnison River (two 5-day trips x 6 people/trip)</b> |   |                            |                         |                       |             |                 |
|---|---|----------------------------|-------------------------|-----------------------|-------------|-----------------|
| <b>Labor (Federal Salary + Benefits)</b>                                    |   |                            |                         |                       |             |                 |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b>    | <b>Rate</b> | <b>Total</b>    |
|   | Fishery Biologist (GS-11)                           | 1                          | 120                     | 120                   | \$54.92     | \$6,590         |
|   | Biological Technician Crew Leader (GS-7)            | 1                          | 80                      | 80                    | \$33.11     | \$2,649         |
|   | Biological Technician (GS-5)                        | 4                          | 72                      | 288                   | \$23.87     | \$6,875         |
| <b>Labor Subtotal</b>   |   |                            |                         |                       |             | <b>\$16,114</b> |
| <b>Travel</b>   |   |                            |                         |                       |             |                 |
|   | <b>Per Diem (Camp Rate = \$28/day)</b>              | <b>Number of Personnel</b> | <b>Days Per Trip</b>    | <b>Trips Per Year</b> | <b>Rate</b> | <b>Total</b>    |
|   | 6 people x 5 days/trip x 2 trips                    | 6                          | 5                       | 2                     | \$28.00     | \$1,680         |
| <b>Travel Subtotal</b>  |   |                            |                         |                       |             | <b>\$1,680</b>  |
| <b>Equipment and Supplies</b>   |   |                            |                         |                       |             |                 |
|   |   |                            |                         | <b>Units</b>          | <b>Rate</b> | <b>Total</b>    |
|   | Generator repair/tune-up (4 hours @ \$78.03/hour)   |                            |                         | 4                     | \$78.03     | \$312           |
|   | Raft trailer maintenance                            |                            |                         | 1                     | \$31.21     | \$31            |
|   | Repair raft frames - aluminum welding               |                            |                         | 3                     | \$156.06    | \$468           |
|   | Spark plugs   |                            |                         | 2                     | \$7.80      | \$16            |
|   | Boat Gas (5 gallons per day per boat)               |                            |                         | 100                   | \$4.16      | \$416           |
|   | (2 boats per trip/5 days per trip/2 trips per year) |                            |                         |                       |             |                 |
| <b>Equipment and Supplies Subtotal</b>                                      |   |                            |                         |                       |             | <b>\$1,243</b>  |

| <b>Vehicles</b>  | Vehicle maintenance and fuel (\$380/month lease = \$12.66 per day based on 30 days in an "average" month + \$0.44/mile) |                            |                                  |                    |             |                 |
|--|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|  | 3 vehicles for boats 5 days/trip x 2 trips/year   | 3                          | 10                               | 30                 | \$12.66     | \$380           |
|  | 1 shuttle vehicle x 2 day/trip x 2 trips/year   | 1                          | 4                                | 4                  | \$12.66     | \$51            |
|  | 4 vehicles x 80 miles round-trip = 320 total miles  | 4                          | 80                               | 320                | \$0.44      | \$141           |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |             | <b>\$571</b>    |
| <b>Task 1 Total</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$19,608</b> |
| <b>Task 2 Electrofish 18-Mile Reach of the Colorado River (one 2-day trip x 4 people trip)</b> |   |                            |                                  |                    |             |                 |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Fishery Biologist (GS-11)   | 1                          | 16                               | 16                 | \$54.92     | \$879           |
|  | Biological Technician (GS-5)  | 2                          | 32                               | 64                 | \$23.87     | \$1,528         |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    |             | <b>\$2,406</b>  |
| <b>Travel - No per diem required for this task</b>   |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|  | Duraframe electrofishing dip nets   |                            |                                  | 2                  | \$312.12    | \$624           |
|  | Gas (10 gallons per day per boat) for outboards and generators  |                            |                                  | 20                 | \$4.16      | \$83            |
| <b>Equipment and Supplies Subtotal</b>   |   |                            |                                  |                    |             | <b>\$707</b>    |
| <b>Vehicles</b>  | Vehicle maintenance and fuel (\$380/month lease = \$12.66 per day based on 30 days in an "average" month + \$0.44/mile) |                            |                                  |                    |             |                 |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |

|  |   |                            |                                  |                    |             |                 |
|--|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
| 2 vehicles for boats 2 days/trip x 1 trip/year                               |   | 2                          | 2                                | 4                  | \$12.66     | \$51            |
| 1 shuttle vehicle x 2 day/trip x 1 trip/year                                 |   | 1                          | 2                                | 2                  | \$12.66     | \$25            |
| 3 vehicles x 23 miles round-trip x 2 days                                    |   | 3                          | 23                               | 138                | \$0.44      | \$61            |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |             | <b>\$137</b>    |
| <b>Task 2 Total</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$3,251</b>  |
| <b>Task 3. Sample larvae in the Gunnison River (4 days/week for 8 weeks)</b> |   |                            |                                  |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>                                     |   |                            |                                  |                    |             |                 |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Biological Technician Crew Leader (GS-7)  | 1                          | 200                              | 200                | \$33.11     | \$6,622         |
|  | Biological Technician (GS-5)  | 2                          | 200                              | 400                | \$23.87     | \$9,548         |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    |             | <b>\$16,170</b> |
| <b>Travel - No per diem required for this task</b>                           |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|  | Boat Gas (5 gallons per day per boat)   |                            |                                  | 640                | \$4.16      | \$2,662         |
|  | Ethanol (95%) two 3-gallon containers   |                            |                                  | 2                  | \$124.85    | \$250           |
|  | Sample bottles (\$325 per case)   |                            |                                  | 1                  | \$338.13    | \$338           |
| <b>Equipment and Supplies Subtotal</b>                                       |   |                            |                                  |                    |             | <b>\$3,250</b>  |
| <b>Vehicles</b>  |   |                            |                                  |                    |             |                 |
|  | Vehicle maintenance and fuel (\$380/month lease = \$12.66 per day based on 30 days in an "average" month + \$0.44/mile) |                            |                                  |                    |             |                 |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|  | Delta to Escalante Section (2 vehicles) \$12.66/day   | 2                          | 8                                | 16                 | \$12.66     | \$203           |
|  | Delta to Escalante Section (2 vehicles) \$0.44/mile   | 2                          | 640                              | 1280               | \$0.44      | \$563           |

|  |                                       |                            |                         |                    |                 |              |
|--|---------------------------------------|----------------------------|-------------------------|--------------------|-----------------|--------------|
| Escalante to Bridgeport (2 vehicles) \$12.66/day   | 2                                     | 8                          | 16                      | \$12.66            | \$203           |              |
| Escalante to Bridgeport (2 vehicles) \$0.44/mile   | 2                                     | 480                        | 960                     | \$0.44             | \$422           |              |
| Bridgeport to Whitewater (2 vehicles) \$12.66/day  | 2                                     | 8                          | 16                      | \$12.66            | \$203           |              |
| Bridgeport to Whitewater (2 vehicles) \$0.44/mile  | 2                                     | 320                        | 640                     | \$0.44             | \$282           |              |
| Whitewater to Redlands Dame (2 vehicles) \$12.66/day                                     | 2                                     | 8                          | 16                      | \$12.66            | \$203           |              |
| Whitewater to Redlands Dame (2 vehicles) \$0.44/mile                                     | 2                                     | 160                        | 320                     | \$0.44             | \$141           |              |
| <b>Vehicles subtotal</b>   |                                       |                            |                         |                    | <b>\$2,218</b>  |              |
| <b>Task 3 Total</b>  |                                       |                            |                         |                    |                 |              |
|  |                                       |                            |                         |                    | <b>\$21,638</b> |              |
| <b>Task 4. Sample larvae in the Colorado River (2 10-hour days per week for 8 weeks)</b> |                                       |                            |                         |                    |                 |              |
| <b>Labor (Federal Salary + Benefits)</b>   |                                       |                            |                         |                    |                 |              |
|  | <b>Title</b>                          | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b>     | <b>Total</b> |
|  | Fishery Biologist (GS-11)             | 1                          | 200                     | 200                | \$54.92         | \$10,984     |
|  | Biological Technician (GS-5)          | 2                          | 128                     | 256                | \$23.89         | \$6,116      |
| <b>Labor Subtotal</b>  |                                       |                            |                         |                    |                 |              |
|  |                                       |                            |                         |                    | <b>\$17,100</b> |              |
| <b>Travel - No per diem required for this task</b>                                       |                                       |                            |                         |                    |                 |              |
|  |                                       |                            |                         |                    | <b>\$0</b>      |              |
| <b>Equipment and Supplies</b>  |                                       |                            |                         |                    |                 |              |
|  | Streams Type III life jackets         |                            |                         | 3                  | \$72.83         | \$218        |
|  | Larval Seines                         |                            |                         | 3                  | \$208.08        | \$624        |
|  | Hip waders                            |                            |                         | 2                  | \$52.02         | \$104        |
|  | Chest waders                          |                            |                         | 1                  | \$130.05        | \$130        |
|  | Boat Gas (5 gallons per day per boat) |                            |                         | 200                | \$4.16          | \$832        |
|  | Ethanol (95%) one 3-gallon container  |                            |                         | 1                  | \$124.85        | \$125        |
|  | Sample bottles (\$338.13 per case)    |                            |                         | 1                  | \$338.13        | \$338        |

|   |   |                            |                                  |                    |             |                 |
|---|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
| <b>Equipment and Supplies Subtotal</b>                              |   |                            |                                  |                    |             | <b>\$2,372</b>  |
| <b>Vehicles</b>   |   |                            |                                  |                    |             |                 |
|   | Vehicle maintenance and fuel (\$380/month lease = \$12.66 per day based on 30 days in an "average" month + \$0.44/mile) |                            |                                  |                    |             |                 |
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|   | Redlands Dam to Redlands Parkway  | 2                          | 8                                | 16                 | \$12.66     | \$203           |
|   | Redlands Dam to Redlands Parkway  | 2                          | 160                              | 320                | \$0.44      | \$141           |
|   | Redlands Parkway to Loma  | 2                          | 8                                | 16                 | \$12.66     | \$203           |
|   | Redlands Parkway to Loma  | 2                          | 160                              | 320                | \$0.44      | \$141           |
| <b>Vehicles subtotal</b>  |   |                            |                                  |                    |             | <b>\$687</b>    |
| <b>Task 4 Total</b>   |   |                            |                                  |                    |             | <b>\$20,158</b> |
| <b>Task 5. Sample YOY in the Gunnison River (one trip per year)</b> |   |                            |                                  |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                                  |                    |             |                 |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|   | Fishery Biologist (GS-11)   | 1                          | 48                               | 48                 | \$54.92     | \$2,636         |
|   | Biological Technician (GS-5)  | 3                          | 48                               | 144                | \$23.87     | \$3,437         |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             | <b>\$6,073</b>  |
| <b>Travel - No per diem required for this task</b>                  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>                                       |   |                            |                                  |                    |             |                 |
|   |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|   | Boat Gas  |                            |                                  | 100                | \$4.16      | \$416           |
|   | Ethanol (95%) one 3-gallon container  |                            |                                  | 1                  | \$124.85    | \$125           |
| <b>Equipment and Supplies Subtotal</b>                              |   |                            |                                  |                    |             | <b>\$541</b>    |

| <b>Vehicles</b>   | Vehicle maintenance and fuel (\$380/month lease = \$12.66 per day based on 30 days in an "average" month + \$0.44/mile) |                            |                                  |                    |             |                |
|---|---|----------------------------|----------------------------------|--------------------|-------------|----------------|
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>   |
|   | Delta to Escalante (2 vehicles) \$12.66/day   | 2                          | 1                                | 2                  | \$12.66     | \$25           |
|   | Delta to Escalante (2 vehicles) \$0.44/mile   | 2                          | 80                               | 160                | \$0.44      | \$70           |
|   | Escalante to Bridgeport (2 vehicles) \$12.66/day  | 2                          | 1                                | 2                  | \$12.66     | \$25           |
|   | Escalante to Bridgeport (2 vehicles) \$0.44/mile  | 2                          | 60                               | 120                | \$0.44      | \$53           |
|   | Bridgeport to Whitewater (2 vehicles) \$12.66/day   | 2                          | 1                                | 2                  | \$12.66     | \$25           |
|   | Bridgeport to Whitewater (2 vehicles) \$0.44/mile   | 2                          | 40                               | 80                 | \$0.44      | \$35           |
|   | Whitewater to Redlands Dame (2 vehicles) \$12.66/day  | 2                          | 1                                | 2                  | \$12.66     | \$25           |
|   | Whitewater to Redlands Dame (2 vehicles) \$0.44/mile  | 2                          | 20                               | 40                 | \$0.44      | \$18           |
| <b>Vehicles Subtotal</b>  |   |                            |                                  |                    |             | <b>\$277</b>   |
| <b>Task 5 Total</b>   |   |                            |                                  |                    |             |                |
|   |   |                            |                                  |                    |             | <b>\$6,892</b> |
| <b>Task 6. Sample YOY in the Colorado River (one trip per year)</b> |   |                            |                                  |                    |             |                |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                                  |                    |             |                |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>   |
|   | Fishery Biologist (GS-11)   | 1                          | 32                               | 32                 | \$54.92     | \$1,757        |
|   | Biological Technician (GS-5)  | 3                          | 32                               | 96                 | \$23.87     | \$2,292        |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             | <b>\$4,049</b> |
| <b>Travel - No per diem required for this task</b>                  |   |                            |                                  |                    |             |                |
|   |   |                            |                                  |                    |             | <b>\$0</b>     |
| <b>Equipment and Supplies</b>                                       |   |                            |                                  |                    |             |                |
|   |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>   |
|   | Boat Gas  |                            |                                  | 47                 | \$4.16      | \$196          |
|   | Ethanol (95%) one 3-gallon container  |                            |                                  | 1                  | \$124.85    | \$125          |



|   |   |                            |                                  |                    |             |              |                 |
|---|---|----------------------------|----------------------------------|--------------------|-------------|--------------|-----------------|
| <b>Equipment and Supplies Subtotal</b>  |   |                            |                                  |                    |             |              | <b>\$320</b>    |
|   |   |                            |                                  |                    |             |              |                 |
| <b>Vehicles</b>   | Vehicle maintenance and fuel (\$380/month lease = \$12.66 per day based on 30 days in an "average" month + \$0.44/mile) |                            |                                  |                    |             |              |                 |
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b> |                 |
|   | Redlands Dam to Redlands Parkway \$12.66/day  | 2                          | 1                                | 2                  | \$12.66     | \$25         |                 |
|   | Redlands Dam to Redlands Parkway \$0.44/mile  | 2                          | 20                               | 40                 | \$0.44      | \$18         |                 |
|   | Redlands Parkway to Loma \$12.66/day  | 2                          | 1                                | 2                  | \$12.66     | \$25         |                 |
|   | Redlands Parkway to Loma \$0.44/mile  | 2                          | 20                               | 40                 | \$0.44      | \$18         |                 |
|   | Loma to Stateline \$12.66/day   | 2                          | 1                                | 2                  | \$12.66     | \$25         |                 |
|   | Loma to Stateline \$0.44/mile   | 2                          | 36                               | 72                 | \$0.44      | \$32         |                 |
| <b>Vehicles subtotal</b>  |   |                            |                                  |                    |             |              | <b>\$143</b>    |
|   |   |                            |                                  |                    |             |              |                 |
| <b>Task 6 Total</b>   |   |                            |                                  |                    |             |              | <b>\$4,512</b>  |
|   |   |                            |                                  |                    |             |              |                 |
| <b>Task 7. Analyze muscle plug samples to determine selenium concentrations (USFWS - Ecological Services)</b>                                 |   |                            |                                  |                    |             |              |                 |
| <b>Task 7 Total</b>   |   |                            |                                  |                    |             |              | <b>\$0</b>      |
|   |   |                            |                                  |                    |             |              |                 |
| <b>Task 9. Analyze larval fish samples (CSU-LFL). Funded under a separate agreement.</b>  |   |                            |                                  |                    |             |              |                 |
| <b>Task 9 Total</b>   |   |                            |                                  |                    |             |              | <b>\$0</b>      |
|   |   |                            |                                  |                    |             |              |                 |
| <b>Tasks 10, 11 and 13. Input and analyze data, write annual report, prepare draft and final large-bodied and YOY fish monitoring report.</b> |   |                            |                                  |                    |             |              |                 |
| <b>Labor (Federal Salary + Benefits)</b>  |   |                            |                                  |                    |             |              |                 |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b> |                 |
|   | Fishery Biologist (GS-11)   | 1                          | 520                              | 520                | \$54.92     | \$28,558     |                 |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             |              | <b>\$28,558</b> |
| <b>Tasks 10 and 11 Total</b>  |   |                            |                                  |                    |             |              | <b>\$28,558</b> |

| <b>Project Management: Permitting, Coordination, Office and Administrative Support</b> |                                    |                            |                         |                    |             |                  |
|--|------------------------------------|----------------------------|-------------------------|--------------------|-------------|------------------|
| <b>Labor (Federal Salary + Benefits)</b>   |                                    |                            |                         |                    |             |                  |
|  | <b>Title</b>                       | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>     |
|  | Administrative Officer             | 1                          | 40                      | 40                 | \$43.84     | \$1,754          |
|  | Project Leader                     | 1                          | 40                      | 40                 | \$84.22     | \$3,369          |
| <b>Labor Subtotal</b>  |                                    |                            |                         |                    |             | <b>\$5,122</b>   |
| <b>Project Management Total</b>  |                                    |                            |                         |                    |             | <b>\$5,122</b>   |
| <b>Totals by Task</b>  |                                    |                            |                         |                    |             |                  |
|  | Task 1 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$19,608</b>  |
|  | Task 2 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$3,251</b>   |
|  | Task 3 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$21,638</b>  |
|  | Task 4 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$20,158</b>  |
|  | Task 5 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$6,892</b>   |
|  | Task 6 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$4,512</b>   |
|  | Task 7 (USFWS-Ecological Services) |                            |                         |                    |             | <b>\$0</b>       |
|  | Task 9 (CSU-LFL)                   |                            |                         |                    |             | <b>\$0</b>       |
|  | Tasks 10, 11, 13 (USFWS-GJFWCO)    |                            |                         |                    |             | <b>\$28,558</b>  |
|  | Project Management (USFWS-GJFWCO)  |                            |                         |                    |             | <b>\$5,122</b>   |
| <b>FY 2020 Grand Total</b>   |                                    |                            |                         |                    |             | <b>\$109,740</b> |

**FY 2021 (Eleventh Year of Multi-year Study)**

**Deliverables/Due Dates:** Annual report for 2021 field work due 11/2021. Complete 2<sup>nd</sup> large-bodied and YOY report.

**Budget**

| <b>Task 1. Electrofish Gunnison River (two 5-day trips x 6 people/trip)</b> |   |                            |                         |                       |             |                 |
|---|---|----------------------------|-------------------------|-----------------------|-------------|-----------------|
| <b>Labor (Federal Salary + Benefits)</b>                                    |   |                            |                         |                       |             |                 |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b>    | <b>Rate</b> | <b>Total</b>    |
|   | Fishery Biologist (GS-11)                           | 1                          | 120                     | 120                   | \$56.02     | \$6,722         |
|   | Biological Technician Crew Leader (GS-7)            | 1                          | 80                      | 80                    | \$33.77     | \$2,702         |
|   | Biological Technician (GS-5)                        | 4                          | 72                      | 288                   | \$24.35     | \$7,013         |
| <b>Labor Subtotal</b>   |   |                            |                         |                       |             | <b>\$16,437</b> |
| <b>Travel</b>   |   |                            |                         |                       |             |                 |
|   | <b>Per Diem (Camp Rate = \$28/day)</b>              | <b>Number of Personnel</b> | <b>Days Per Trip</b>    | <b>Trips Per Year</b> | <b>Rate</b> | <b>Total</b>    |
|   | 6 people x 5 days/trip x 2 trips                    | 6                          | 5                       | 2                     | \$28.00     | \$1,680         |
| <b>Travel Subtotal</b>  |   |                            |                         |                       |             | <b>\$1,680</b>  |
| <b>Equipment and Supplies</b>   |   |                            |                         |                       |             |                 |
|   |   |                            |                         | <b>Units</b>          | <b>Rate</b> | <b>Total</b>    |
|   | Generator repair/tune-up (4 hours @ \$79.59/hour)   |                            |                         | 4                     | \$79.59     | \$318           |
|   | Raft trailer maintenance                            |                            |                         | 1                     | \$31.83     | \$32            |
|   | Repair raft frames - aluminum welding               |                            |                         | 3                     | \$159.18    | \$478           |
|   | Spark plugs   |                            |                         | 2                     | \$7.96      | \$16            |
|   | Boat Gas (5 gallons per day per boat)               |                            |                         | 100                   | \$4.24      | \$424           |
|   | (2 boats per trip/5 days per trip/2 trips per year) |                            |                         |                       |             |                 |
| <b>Equipment and Supplies Subtotal</b>                                      |   |                            |                         |                       |             | <b>\$1,268</b>  |

| <b>Vehicles</b>  | Vehicle maintenance and fuel (\$387/month lease = \$12.91 per day based on 30 days in an "average" month + \$0.45/mile) |                            |                                  |                    |             |                 |
|--|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|  | 3 vehicles for boats 5 days/trip x 2 trips/year   | 3                          | 10                               | 30                 | \$12.91     | \$387           |
|  | 1 shuttle vehicle x 2 day/trip x 2 trips/year   | 1                          | 4                                | 4                  | \$12.91     | \$52            |
|  | 4 vehicles x 80 miles round-trip = 320 total miles  | 4                          | 80                               | 320                | \$0.45      | \$144           |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |             | <b>\$583</b>    |
| <b>Task 1 Total</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$19,967</b> |
| <b>Task 2 Electrofish 18-Mile Reach of the Colorado River (one 2-day trip x 4 people trip)</b> |   |                            |                                  |                    |             |                 |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Fishery Biologist (GS-11)   | 1                          | 16                               | 16                 | \$56.02     | \$896           |
|  | Biological Technician (GS-5)  | 2                          | 32                               | 64                 | \$24.35     | \$1,558         |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    |             | <b>\$2,455</b>  |
| <b>Travel - No per diem required for this task</b>   |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|  | Duraframe electrofishing dip nets   |                            |                                  | 2                  | \$318.36    | \$637           |
|  | Gas (10 gallons per day per boat) for outboards and generators  |                            |                                  | 20                 | \$4.24      | \$85            |
| <b>Equipment and Supplies Subtotal</b>   |   |                            |                                  |                    |             | <b>\$722</b>    |
| <b>Vehicles</b>  | Vehicle maintenance and fuel (\$387/month lease = \$12.91 per day based on 30 days in an "average" month + \$0.45/mile) |                            |                                  |                    |             |                 |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |

|  |   |                            |                                  |                    |             |                 |
|--|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
| 2 vehicles for boats 2 days/trip x 1 trip/year                               |   | 2                          | 2                                | 4                  | \$12.91     | \$52            |
| 1 shuttle vehicle x 2 day/trip x 1 trip/year                                 |   | 1                          | 2                                | 2                  | \$12.91     | \$26            |
| 3 vehicles x 23 miles round-trip x 2 days                                    |   | 3                          | 23                               | 138                | \$0.45      | \$62            |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |             | <b>\$140</b>    |
| <b>Task 2 Total</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$3,316</b>  |
| <b>Task 3. Sample larvae in the Gunnison River (4 days/week for 8 weeks)</b> |   |                            |                                  |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>                                     |   |                            |                                  |                    |             |                 |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Biological Technician Crew Leader (GS-7)  | 1                          | 200                              | 200                | \$33.77     | \$6,754         |
|  | Biological Technician (GS-5)  | 2                          | 200                              | 400                | \$24.35     | \$9,740         |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    |             | <b>\$16,494</b> |
| <b>Travel - No per diem required for this task</b>                           |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|  | Boat Gas (5 gallons per day per boat)   |                            |                                  | 640                | \$4.24      | \$2,714         |
|  | Ethanol (95%) two 3-gallon containers   |                            |                                  | 2                  | \$127.35    | \$255           |
|  | Sample bottles (\$344.89 per case)  |                            |                                  | 1                  | \$344.89    | \$345           |
| <b>Equipment and Supplies Subtotal</b>                                       |   |                            |                                  |                    |             | <b>\$3,313</b>  |
| <b>Vehicles</b>  |   |                            |                                  |                    |             |                 |
|  | Vehicle maintenance and fuel (\$387/month lease = \$12.91 per day based on 30 days in an "average" month + \$0.45/mile) |                            |                                  |                    |             |                 |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|  | Delta to Escalante Section (2 vehicles) \$12.91/day   | 2                          | 8                                | 16                 | \$12.91     | \$207           |
|  | Delta to Escalante Section (2 vehicles) \$0.45/mile   | 2                          | 640                              | 1280               | \$0.45      | \$576           |

|  |                                       |                            |                         |                    |                 |              |
|--|---------------------------------------|----------------------------|-------------------------|--------------------|-----------------|--------------|
| Escalante to Bridgeport (2 vehicles) \$12.91/day   | 2                                     | 8                          | 16                      | \$12.91            | \$207           |              |
| Escalante to Bridgeport (2 vehicles) \$0.45/mile   | 2                                     | 480                        | 960                     | \$0.45             | \$432           |              |
| Bridgeport to Whitewater (2 vehicles) \$12.91/day  | 2                                     | 8                          | 16                      | \$12.91            | \$207           |              |
| Bridgeport to Whitewater (2 vehicles) \$0.45/mile  | 2                                     | 320                        | 640                     | \$0.45             | \$288           |              |
| Whitewater to Redlands Dame (2 vehicles) \$12.91/day                                     | 2                                     | 8                          | 16                      | \$12.91            | \$207           |              |
| Whitewater to Redlands Dame (2 vehicles) \$0.45/mile                                     | 2                                     | 160                        | 320                     | \$0.45             | \$144           |              |
| <b>Vehicles subtotal</b>   |                                       |                            |                         |                    | <b>\$2,266</b>  |              |
| <b>Task 3 Total</b>  |                                       |                            |                         |                    |                 |              |
|  |                                       |                            |                         |                    | <b>\$22,073</b> |              |
| <b>Task 4. Sample larvae in the Colorado River (2 10-hour days per week for 8 weeks)</b> |                                       |                            |                         |                    |                 |              |
| <b>Labor (Federal Salary + Benefits)</b>   |                                       |                            |                         |                    |                 |              |
|  | <b>Title</b>                          | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b>     | <b>Total</b> |
|  | Fishery Biologist (GS-11)             | 1                          | 200                     | 200                | \$56.02         | \$11,204     |
|  | Biological Technician (GS-5)          | 2                          | 128                     | 256                | \$24.35         | \$6,234      |
| <b>Labor Subtotal</b>  |                                       |                            |                         |                    | <b>\$17,438</b> |              |
| <b>Travel - No per diem required for this task</b>                                       |                                       |                            |                         |                    |                 |              |
|  |                                       |                            |                         |                    | <b>\$0</b>      |              |
| <b>Equipment and Supplies</b>  |                                       |                            |                         |                    |                 |              |
|  | Streams Type III life jackets         |                            |                         | 3                  | \$74.29         | \$223        |
|  | Larval Seines                         |                            |                         | 3                  | \$212.24        | \$637        |
|  | Hip waders                            |                            |                         | 2                  | \$53.06         | \$106        |
|  | Chest waders                          |                            |                         | 1                  | \$132.65        | \$133        |
|  | Boat Gas (5 gallons per day per boat) |                            |                         | 200                | \$4.24          | \$848        |
|  | Ethanol (95%) one 3-gallon container  |                            |                         | 1                  | \$127.35        | \$127        |
|  | Sample bottles (\$325 per case)       |                            |                         | 1                  | \$344.89        | \$345        |

|   |   |                            |                                  |                    |             |                 |
|---|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
| <b>Equipment and Supplies Subtotal</b>                              |   |                            |                                  |                    |             | <b>\$2,419</b>  |
| <b>Vehicles</b>   |   |                            |                                  |                    |             |                 |
|   | Vehicle maintenance and fuel (\$387/month lease = \$12.91 per day based on 30 days in an "average" month + \$0.45/mile) |                            |                                  |                    |             |                 |
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|   | Redlands Dam to Redlands Parkway  | 2                          | 8                                | 16                 | \$12.91     | \$207           |
|   | Redlands Dam to Redlands Parkway  | 2                          | 160                              | 320                | \$0.45      | \$144           |
|   | Redlands Parkway to Loma  | 2                          | 8                                | 16                 | \$12.91     | \$207           |
|   | Redlands Parkway to Loma  | 2                          | 160                              | 320                | \$0.45      | \$144           |
| <b>Vehicles subtotal</b>  |   |                            |                                  |                    |             | <b>\$701</b>    |
| <b>Task 4 Total</b>   |   |                            |                                  |                    |             | <b>\$20,557</b> |
| <b>Task 5. Sample YOY in the Gunnison River (one trip per year)</b> |   |                            |                                  |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                                  |                    |             |                 |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|   | Fishery Biologist (GS-11)   | 1                          | 48                               | 48                 | \$56.02     | \$2,689         |
|   | Biological Technician (GS-5)  | 3                          | 48                               | 144                | \$24.35     | \$3,506         |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             | <b>\$6,195</b>  |
| <b>Travel - No per diem required for this task</b>                  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>                                       |   |                            |                                  |                    |             |                 |
|   |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|   | Boat Gas  |                            |                                  | 100                | \$4.24      | \$424           |
|   | Ethanol (95%) one 3-gallon container  |                            |                                  | 1                  | \$127.35    | \$127           |
| <b>Equipment and Supplies Subtotal</b>                              |   |                            |                                  |                    |             | <b>\$551</b>    |

| <b>Vehicles</b>   | Vehicle maintenance and fuel (\$387/month lease = \$12.91 per day based on 30 days in an "average" month + \$0.45/mile) |                            |                                  |                    |             |                |
|---|---|----------------------------|----------------------------------|--------------------|-------------|----------------|
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>   |
|   | Delta to Escalante Section (2 vehicles) \$12.91/day   | 2                          | 1                                | 2                  | \$12.91     | \$26           |
|   | Delta to Escalante Section (2 vehicles) \$0.45/mile   | 2                          | 80                               | 160                | \$0.45      | \$72           |
|   | Escalante to Bridgeport (2 vehicles) \$12.91/day  | 2                          | 1                                | 2                  | \$12.91     | \$26           |
|   | Escalante to Bridgeport (2 vehicles) \$0.45/mile  | 2                          | 60                               | 120                | \$0.45      | \$54           |
|   | Bridgeport to Whitewater (2 vehicles) \$12.91/day   | 2                          | 1                                | 2                  | \$12.91     | \$26           |
|   | Bridgeport to Whitewater (2 vehicles) \$0.45/mile   | 2                          | 40                               | 80                 | \$0.45      | \$36           |
|   | Whitewater to Redlands Dame (2 vehicles) \$12.91/day  | 2                          | 1                                | 2                  | \$12.91     | \$26           |
|   | Whitewater to Redlands Dame (2 vehicles) \$0.45/mile  | 2                          | 20                               | 40                 | \$0.45      | \$18           |
| <b>Vehicles Subtotal</b>  |   |                            |                                  |                    |             | <b>\$283</b>   |
| <b>Task 5 Total</b>   |   |                            |                                  |                    |             | <b>\$7,030</b> |
| <b>Task 6. Sample YOY in the Colorado River (one trip per year)</b> |   |                            |                                  |                    |             |                |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                                  |                    |             |                |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>   |
|   | Fishery Biologist (GS-11)   | 1                          | 32                               | 32                 | \$56.02     | \$1,793        |
|   | Biological Technician (GS-5)  | 3                          | 32                               | 96                 | \$24.35     | \$2,338        |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             | <b>\$4,130</b> |
| <b>Travel - No per diem required for this task</b>                  |   |                            |                                  |                    |             | <b>\$0</b>     |
| <b>Equipment and Supplies</b>                                       |   |                            |                                  |                    |             |                |
|   | Boat Gas  |                            |                                  | 47                 | \$4.24      | \$199          |
|   | Ethanol (95%) one 3-gallon container  |                            |                                  | 1                  | \$127.35    | \$127          |



|   |   |                            |                                  |                    |             |              |                |
|---|---|----------------------------|----------------------------------|--------------------|-------------|--------------|----------------|
| <b>Equipment and Supplies Subtotal</b>  |   |                            |                                  |                    |             |              | <b>\$327</b>   |
| <b>Vehicles</b>   |   |                            |                                  |                    |             |              |                |
|   | Vehicle maintenance and fuel (\$387/month lease = \$12.91 per day based on 30 days in an "average" month + \$0.45/mile) |                            |                                  |                    |             |              |                |
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b> |                |
|   | Redlands Dam to Redlands Parkway \$12.91/day  | 2                          | 1                                | 2                  | \$12.91     | \$26         |                |
|   | Redlands Dam to Redlands Parkway \$0.45/mile  | 2                          | 20                               | 40                 | \$0.45      | \$18         |                |
|   | Redlands Parkway to Loma \$12.91/day  | 2                          | 1                                | 2                  | \$12.91     | \$26         |                |
|   | Redlands Parkway to Loma \$0.45/mile  | 2                          | 20                               | 40                 | \$0.45      | \$18         |                |
|   | Loma to Stateline \$12.91/day   | 2                          | 1                                | 2                  | \$12.91     | \$26         |                |
|   | Loma to Stateline \$0.45/mile   | 2                          | 36                               | 72                 | \$0.45      | \$32         |                |
| <b>Vehicles subtotal</b>  |   |                            |                                  |                    |             |              | <b>\$146</b>   |
| <b>Task 6 Total</b>   |   |                            |                                  |                    |             |              | <b>\$4,603</b> |
| <b>Task 7. Analyze muscle plug samples to determine selenium concentrations (USFWS - Ecological Services)</b> |   |                            |                                  |                    |             |              |                |
| <b>Task 7 Total</b>   |   |                            |                                  |                    |             |              | <b>\$0</b>     |
| <b>Task 8. Develop population estimate of razorback sucker in Colorado River</b>                              |   |                            |                                  |                    |             |              |                |
| <b>Labor (Federal Salary + Benefits)</b>  |   |                            |                                  |                    |             |              |                |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b> |                |
|   | Fishery Biologist (GS-11)   | 1                          | 80                               | 80                 | \$56.02     | \$4,482      |                |
|   | Bio-statistician (CSU-LFL)  | 1                          | 32                               | 32                 | \$143.26    | \$4,584      |                |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             |              | <b>\$9,066</b> |
| <b>Tasks 8 Total</b>  |   |                            |                                  |                    |             |              | <b>\$9,066</b> |
| <b>Task 9. Analyze larval fish samples (CSU-LFL). Funded under a separate agreement.</b>                      |   |                            |                                  |                    |             |              |                |

|  |                                    |                            |                         |                    |             |                 |
|--|------------------------------------|----------------------------|-------------------------|--------------------|-------------|-----------------|
| <b>Task 9 Total</b>  |                                    |                            |                         |                    |             | <b>\$0</b>      |
| <b>Tasks 10, 11 and 14. Input and analyze data, write annual report, prepare draft and final larval fish report.</b> |                                    |                            |                         |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>   |                                    |                            |                         |                    |             |                 |
|  | <b>Title</b>                       | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Fishery Biologist (GS-11)          | 1                          | 560                     | 560                | \$56.02     | \$31,371        |
| <b>Labor Subtotal</b>  |                                    |                            |                         |                    |             | <b>\$31,371</b> |
| <b>Tasks 10, 11 and 14 Total</b>   |                                    |                            |                         |                    |             | <b>\$31,371</b> |
| <b>Project Management: Permitting, Coordination, Office and Administrative Support</b>                               |                                    |                            |                         |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>   |                                    |                            |                         |                    |             |                 |
|  | <b>Title</b>                       | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Administrative Officer             | 1                          | 40                      | 40                 | \$44.72     | \$1,789         |
|  | Project Leader                     | 1                          | 40                      | 40                 | \$85.90     | \$3,436         |
| <b>Labor Subtotal</b>  |                                    |                            |                         |                    |             | <b>\$5,225</b>  |
| <b>Project Management Total</b>  |                                    |                            |                         |                    |             | <b>\$5,225</b>  |
| <b>Totals by Task</b>  |                                    |                            |                         |                    |             |                 |
|  | Task 1 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$19,967</b> |
|  | Task 2 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$3,316</b>  |
|  | Task 3 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$22,073</b> |
|  | Task 4 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$20,557</b> |
|  | Task 5 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$7,030</b>  |
|  | Task 6 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$4,603</b>  |
|  | Task 7 (USFWS-Ecological Services) |                            |                         |                    |             | <b>\$0</b>      |
|  | Task 8 (USFWS-GJFWCO and CSU-LFL)  |                            |                         |                    |             | <b>\$9,066</b>  |

|                            |                                    |  |  |  |  |                  |
|----------------------------|------------------------------------|--|--|--|--|------------------|
|                            | Task 9 (CSU-LFL)                   |  |  |  |  | <b>\$0</b>       |
|                            | Tasks 10, 11 and 14 (USFWS-GJFWCO) |  |  |  |  | <b>\$31,371</b>  |
|                            | Project Management (USFWS-GJFWCO)  |  |  |  |  | <b>\$5,225</b>   |
|                            |                                    |  |  |  |  |                  |
| <b>FY 2021 Grand Total</b> |                                    |  |  |  |  | <b>\$123,209</b> |

**FY 2022 (Twelfth Year of Multi-year Study)**

**Deliverables/Due Dates:** Annual report for 2022 field work due 11/2022 and complete 2<sup>nd</sup> larval fishes report.

**Budget**

|   |  |                            |                         |                       |             |                 |
|---|--|----------------------------|-------------------------|-----------------------|-------------|-----------------|
| <b>Task 1. Electrofish Gunnison River (two 5-day trips x 6 people/trip)</b> |  |                            |                         |                       |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>                                    |  |                            |                         |                       |             |                 |
|   | <b>Title</b>                             | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b>    | <b>Rate</b> | <b>Total</b>    |
|   | Fishery Biologist (GS-11)                | 1                          | 120                     | 120                   | \$57.14     | \$6,857         |
|   | Biological Technician Crew Leader (GS-7) | 1                          | 80                      | 80                    | \$34.45     | \$2,756         |
|   | Biological Technician (GS-5)             | 4                          | 72                      | 288                   | \$24.84     | \$7,154         |
| <b>Labor Subtotal</b>   |  |                            |                         |                       |             | <b>\$16,767</b> |
| <b>Travel</b>   |  |                            |                         |                       |             |                 |
|   | <b>Per Diem (Camp Rate = \$28/day)</b>   | <b>Number of Personnel</b> | <b>Days Per Trip</b>    | <b>Trips Per Year</b> | <b>Rate</b> | <b>Total</b>    |
|   | 6 people x 5 days/trip x 2 trips         | 6                          | 5                       | 2                     | \$28.00     | \$1,680         |
| <b>Travel Subtotal</b>  |  |                            |                         |                       |             | <b>\$1,680</b>  |
| <b>Equipment and Supplies</b>   |  |                            |                         |                       |             |                 |
|   |  |                            |                         | <b>Units</b>          | <b>Rate</b> | <b>Total</b>    |

|  |   |                            |                                  |                    |                 |              |
|--|---|----------------------------|----------------------------------|--------------------|-----------------|--------------|
|  | Generator repair/tune-up (4 hours @ \$81.18/hour)   |                            | 4                                | \$81.18            | \$325           |              |
|  | Raft trailer maintenance  |                            | 1                                | \$32.47            | \$32            |              |
|  | Repair raft frames - aluminum welding   |                            | 3                                | \$162.36           | \$487           |              |
|  | Spark plugs   |                            | 2                                | \$8.12             | \$16            |              |
|  | Boat Gas (5 gallons per day per boat)   |                            | 100                              | \$4.32             | \$432           |              |
|  | (2 boats per trip/5 days per trip/2 trips per year)   |                            |                                  |                    |                 |              |
| <b>Equipment and Supplies Subtotal</b>   |   |                            |                                  |                    | <b>\$1,293</b>  |              |
| <b>Vehicles</b>  |   |                            |                                  |                    |                 |              |
|  | Vehicle maintenance and fuel (\$395/month lease = \$13.17 per day based on 30 days in an "average" month + \$0.46/mile) |                            |                                  |                    |                 |              |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b>     | <b>Total</b> |
|  | 3 vehicles for boats 5 days/trip x 2 trips/year   | 3                          | 10                               | 30                 | \$13.17         | \$395        |
|  | 1 shuttle vehicle x 2 day/trip x 2 trips/year   | 1                          | 4                                | 4                  | \$13.17         | \$53         |
|  | 4 vehicles x 80 miles round-trip = 320 total miles  | 4                          | 80                               | 320                | \$0.46          | \$147        |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    | <b>\$595</b>    |              |
| <b>Task 1 Total</b>  |   |                            |                                  |                    |                 |              |
|  |   |                            |                                  |                    | <b>\$20,334</b> |              |
| <b>Task 2 Electrofish 18-Mile Reach of the Colorado River (one 2-day trip x 4 people trip)</b> |   |                            |                                  |                    |                 |              |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b>     | <b>Total</b> |
|  | Fishery Biologist (GS-11)   | 1                          | 16                               | 16                 | \$57.14         | \$914        |
|  | Biological Technician (GS-5)  | 2                          | 32                               | 64                 | \$24.84         | \$1,590      |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    | <b>\$2,504</b>  |              |
| <b>Travel - No per diem required for this task</b>   |   |                            |                                  |                    |                 |              |
|  |   |                            |                                  |                    | <b>\$0</b>      |              |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    |                 |              |
|  |   |                            |                                  | <b>Units</b>       | <b>Rate</b>     | <b>Total</b> |

|  |   |                            |                                  |                    |             |                 |
|--|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
|  | Duraframe electrofishing dip nets   |                            |                                  | 2                  | \$324.37    | \$649           |
|  | Gas (10 gallons per day per boat) for outboards and generators  |                            |                                  | 20                 | \$4.32      | \$86            |
| <b>Equipment and Supplies Subtotal</b>                                       |   |                            |                                  |                    |             | <b>\$735</b>    |
| <b>Vehicles</b>  |   |                            |                                  |                    |             |                 |
|  | Vehicle maintenance and fuel (\$395/month lease = \$13.17 per day based on 30 days in an "average" month + \$0.46/mile) |                            |                                  |                    |             |                 |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|  | 2 vehicles for boats 2 days/trip x 1 trip/year  | 2                          | 2                                | 4                  | \$13.17     | \$53            |
|  | 1 shuttle vehicle x 2 day/trip x 1 trip/year  | 1                          | 2                                | 2                  | \$13.17     | \$26            |
|  | 3 vehicles x 23 miles round-trip x 2 days   | 3                          | 23                               | 138                | \$0.46      | \$63            |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |             | <b>\$143</b>    |
| <b>Task 2 Total</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$3,382</b>  |
| <b>Task 3. Sample larvae in the Gunnison River (4 days/week for 8 weeks)</b> |   |                            |                                  |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>                                     |   |                            |                                  |                    |             |                 |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Biological Technician Crew Leader (GS-7)  | 1                          | 200                              | 200                | \$34.45     | \$6,890         |
|  | Biological Technician (GS-5)  | 2                          | 200                              | 400                | \$24.84     | \$9,936         |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    |             | <b>\$16,826</b> |
| <b>Travel - No per diem required for this task</b>                           |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  |                    |             | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    |             |                 |
|  |   |                            |                                  | <b>Units</b>       | <b>Rate</b> | <b>Total</b>    |
|  | Boat Gas (5 gallons per day per boat)   |                            |                                  | 640                | \$4.32      | \$2,765         |
|  | Ethanol (95%) two 3-gallon containers   |                            |                                  | 2                  | \$129.90    | \$260           |
|  | Sample bottles (\$325 per case)   |                            |                                  | 1                  | \$351.79    | \$352           |

|  |   |                            |                                  |                    |              |              |                 |
|--|---|----------------------------|----------------------------------|--------------------|--------------|--------------|-----------------|
| <b>Equipment and Supplies Subtotal</b>   |   |                            |                                  |                    |              |              | <b>\$3,376</b>  |
| <b>Vehicles</b>  |   |                            |                                  |                    |              |              |                 |
|  | Vehicle maintenance and fuel (\$395/month lease = \$13.17 per day based on 30 days in an "average" month + \$0.46/mile) |                            |                                  |                    |              |              |                 |
|  |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b>  | <b>Total</b> |                 |
|  | Delta to Escalante Section (2 vehicles) \$13.17/day   | 2                          | 8                                | 16                 | \$13.17      | \$211        |                 |
|  | Delta to Escalante Section (2 vehicles) \$0.46/mile   | 2                          | 640                              | 1280               | \$0.46       | \$589        |                 |
|  | Escalante to Bridgeport (2 vehicles) \$13.17/day  | 2                          | 8                                | 16                 | \$13.17      | \$211        |                 |
|  | Escalante to Bridgeport (2 vehicles) \$0.46/mile  | 2                          | 480                              | 960                | \$0.46       | \$442        |                 |
|  | Bridgeport to Whitewater (2 vehicles) \$13.17/day   | 2                          | 8                                | 16                 | \$13.17      | \$211        |                 |
|  | Bridgeport to Whitewater (2 vehicles) \$0.46/mile   | 2                          | 320                              | 640                | \$0.46       | \$294        |                 |
|  | Whitewater to Redlands Dame (2 vehicles) \$13.17/day  | 2                          | 8                                | 16                 | \$13.17      | \$211        |                 |
|  | Whitewater to Redlands Dame (2 vehicles) \$0.46/mile  | 2                          | 160                              | 320                | \$0.46       | \$147        |                 |
| <b>Vehicles subtotal</b>   |   |                            |                                  |                    |              |              | <b>\$2,315</b>  |
| <b>Task 3 Total</b>  |   |                            |                                  |                    |              |              | <b>\$22,517</b> |
| <b>Task 4. Sample larvae in the Colorado River (2 10-hour days per week for 8 weeks)</b> |   |                            |                                  |                    |              |              |                 |
| <b>Labor (Federal Salary + Benefits)</b>   |   |                            |                                  |                    |              |              |                 |
|  | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b>  | <b>Total</b> |                 |
|  | Fishery Biologist (GS-11)   | 1                          | 200                              | 200                | \$57.14      | \$11,428     |                 |
|  | Biological Technician (GS-5)  | 2                          | 128                              | 256                | \$24.84      | \$6,359      |                 |
| <b>Labor Subtotal</b>  |   |                            |                                  |                    |              |              | <b>\$17,787</b> |
| <b>Travel - No per diem required for this task</b>                                       |   |                            |                                  |                    |              |              | <b>\$0</b>      |
| <b>Equipment and Supplies</b>  |   |                            |                                  |                    | <b>Units</b> | <b>Rate</b>  | <b>Total</b>    |

|   |   |                            |                                  |                    |             |                 |
|---|---|----------------------------|----------------------------------|--------------------|-------------|-----------------|
|   | Streams Type III life jackets   |                            |                                  | 3                  | \$75.78     | \$227           |
|   | Larval Seines   |                            |                                  | 3                  | \$216.48    | \$649           |
|   | Hip waders  |                            |                                  | 2                  | \$54.12     | \$108           |
|   | Chest waders  |                            |                                  | 1                  | \$135.30    | \$135           |
|   | Boat Gas (5 gallons per day per boat)   |                            |                                  | 200                | \$4.32      | \$864           |
|   | Ethanol (95%) one 3-gallon container  |                            |                                  | 1                  | \$129.90    | \$130           |
|   | Sample bottles (\$351.79 per case)  |                            |                                  | 1                  | \$351.79    | \$352           |
| <b>Equipment and Supplies Subtotal</b>                              |   |                            |                                  |                    |             | <b>\$2,466</b>  |
| <b>Vehicles</b>   |   |                            |                                  |                    |             |                 |
|   | Vehicle maintenance and fuel (\$395/month lease = \$13.17 per day based on 30 days in an "average" month + \$0.46/mile) |                            |                                  |                    |             |                 |
|   |   | <b>Number of Vehicles</b>  | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b> | <b>Total</b>    |
|   | Redlands Dam to Redlands Parkway  | 2                          | 8                                | 16                 | \$13.17     | \$211           |
|   | Redlands Dam to Redlands Parkway  | 2                          | 160                              | 320                | \$0.46      | \$147           |
|   | Redlands Parkway to Loma  | 2                          | 8                                | 16                 | \$13.17     | \$211           |
|   | Redlands Parkway to Loma  | 2                          | 160                              | 320                | \$0.46      | \$147           |
| <b>Vehicles subtotal</b>  |   |                            |                                  |                    |             | <b>\$716</b>    |
| <b>Task 4 Total</b>   |   |                            |                                  |                    |             |                 |
|   |   |                            |                                  |                    |             | <b>\$20,969</b> |
| <b>Task 5. Sample YOY in the Gunnison River (one trip per year)</b> |   |                            |                                  |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                                  |                    |             |                 |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b>          | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|   | Fishery Biologist (GS-11)   | 1                          | 48                               | 48                 | \$57.14     | \$2,743         |
|   | Biological Technician (GS-5)  | 3                          | 48                               | 144                | \$24.84     | \$3,577         |
| <b>Labor Subtotal</b>   |   |                            |                                  |                    |             | <b>\$6,320</b>  |

|   |   |                            |                         |                    |                           |                                  |                    |              |              |                |
|---|---|----------------------------|-------------------------|--------------------|---------------------------|----------------------------------|--------------------|--------------|--------------|----------------|
| <b>Travel - No per diem required for this task</b>                  |   |                            |                         |                    |                           |                                  |                    |              |              | <b>\$0</b>     |
|   |   |                            |                         |                    |                           |                                  |                    |              |              |                |
| <b>Equipment and Supplies</b>                                       |   |                            |                         |                    |                           |                                  |                    | <b>Units</b> | <b>Rate</b>  | <b>Total</b>   |
|   | Boat Gas  |                            |                         |                    |                           |                                  |                    | 100          | \$4.32       | \$432          |
|   | Ethanol (95%) one 3-gallon container  |                            |                         |                    |                           |                                  |                    | 1            | \$129.90     | \$130          |
| <b>Equipment and Supplies Subtotal</b>                              |   |                            |                         |                    |                           |                                  |                    |              |              | <b>\$562</b>   |
|   |   |                            |                         |                    |                           |                                  |                    |              |              |                |
| <b>Vehicles</b>   | Vehicle maintenance and fuel (\$395/month lease = \$13.17 per day based on 30 days in an "average" month + \$0.46/mile) |                            |                         |                    |                           |                                  |                    |              |              |                |
|   |   |                            |                         |                    | <b>Number of Vehicles</b> | <b>Days or Miles per Vehicle</b> | <b>Total Units</b> | <b>Rate</b>  | <b>Total</b> |                |
|   | Delta to Escalante (2 vehicles) \$13.17/day   |                            |                         |                    | 2                         | 1                                | 2                  | \$13.17      | \$26         |                |
|   | Delta to Escalante (2 vehicles) \$0.46/mile   |                            |                         |                    | 2                         | 80                               | 160                | \$0.46       | \$74         |                |
|   | Escalante to Bridgeport (2 vehicles) \$13.17/day  |                            |                         |                    | 2                         | 1                                | 2                  | \$13.17      | \$26         |                |
|   | Escalante to Bridgeport (2 vehicles) \$0.46/mile  |                            |                         |                    | 2                         | 60                               | 120                | \$0.46       | \$55         |                |
|   | Bridgeport to Whitewater (2 vehicles) \$13.17/day   |                            |                         |                    | 2                         | 1                                | 2                  | \$13.17      | \$26         |                |
|   | Bridgeport to Whitewater (2 vehicles) \$0.46/mile   |                            |                         |                    | 2                         | 40                               | 80                 | \$0.46       | \$37         |                |
|   | Whitewater to Redlands Dame (2 vehicles) \$13.17/day  |                            |                         |                    | 2                         | 1                                | 2                  | \$13.17      | \$26         |                |
|   | Whitewater to Redlands Dame (2 vehicles) \$0.46/mile  |                            |                         |                    | 2                         | 20                               | 40                 | \$0.46       | \$18         |                |
| <b>Vehicles Subtotal</b>  |   |                            |                         |                    |                           |                                  |                    |              |              | <b>\$289</b>   |
|   |   |                            |                         |                    |                           |                                  |                    |              |              |                |
| <b>Task 5 Total</b>   |   |                            |                         |                    |                           |                                  |                    |              |              | <b>\$7,171</b> |
|   |   |                            |                         |                    |                           |                                  |                    |              |              |                |
| <b>Task 6. Sample YOY in the Colorado River (one trip per year)</b> |   |                            |                         |                    |                           |                                  |                    |              |              |                |
| <b>Labor (Federal Salary + Benefits)</b>                            |   |                            |                         |                    |                           |                                  |                    |              |              |                |
|   | <b>Title</b>  | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b>               | <b>Total</b>                     |                    |              |              |                |
|   | Fishery Biologist (GS-11)   | 1                          | 32                      | 32                 | \$57.14                   | \$1,828                          |                    |              |              |                |
|   | Biological Technician (GS-5)  | 3                          | 32                      | 96                 | \$24.84                   | \$2,385                          |                    |              |              |                |



|   |   |                           |                                  |  |                    |             |  |              |             |                |
|---|---|---------------------------|----------------------------------|--|--------------------|-------------|--|--------------|-------------|----------------|
| <b>Labor Subtotal</b>   |   |                           |                                  |  |                    |             |  |              |             | <b>\$4,213</b> |
| <b>Travel - No per diem required for this task</b>  |   |                           |                                  |  |                    |             |  |              |             |                |
|   |   |                           |                                  |  |                    |             |  |              |             | <b>\$0</b>     |
| <b>Equipment and Supplies</b>   |   |                           |                                  |  |                    |             |  | <b>Units</b> | <b>Rate</b> | <b>Total</b>   |
|   | Boat Gas  |                           |                                  |  |                    |             |  | 47           | \$4.32      | \$203          |
|   | Ethanol (95%) one 3-gallon container  |                           |                                  |  |                    |             |  | 1            | \$127.35    | \$127          |
| <b>Equipment and Supplies Subtotal</b>  |   |                           |                                  |  |                    |             |  |              |             | <b>\$330</b>   |
| <b>Vehicles</b>   |   |                           |                                  |  |                    |             |  |              |             |                |
|   | Vehicle maintenance and fuel (\$395/month lease = \$13.17 per day based on 30 days in an "average" month + \$0.46/mile) |                           |                                  |  |                    |             |  |              |             |                |
|   |   | <b>Number of Vehicles</b> | <b>Days or Miles per Vehicle</b> |  | <b>Total Units</b> | <b>Rate</b> |  | <b>Total</b> |             |                |
|   | Redlands Dam to Redlands Parkway \$13.17/day  |                           |                                  |  | 2                  | 1           |  | 2            | \$13.17     | \$26           |
|   | Redlands Dam to Redlands Parkway \$0.46/mile  |                           |                                  |  | 2                  | 20          |  | 40           | \$0.46      | \$18           |
|   | Redlands Parkway to Loma \$13.17/day  |                           |                                  |  | 2                  | 1           |  | 2            | \$13.17     | \$26           |
|   | Redlands Parkway to Loma \$0.46/mile  |                           |                                  |  | 2                  | 20          |  | 40           | \$0.46      | \$18           |
|   | Loma to Stateline \$13.17/day   |                           |                                  |  | 2                  | 1           |  | 2            | \$13.17     | \$26           |
|   | Loma to Stateline \$0.46/mile   |                           |                                  |  | 2                  | 36          |  | 72           | \$0.46      | \$33           |
| <b>Vehicles subtotal</b>  |   |                           |                                  |  |                    |             |  |              |             | <b>\$149</b>   |
| <b>Task 6 Total</b>   |   |                           |                                  |  |                    |             |  |              |             |                |
|   |   |                           |                                  |  |                    |             |  |              |             | <b>\$4,692</b> |
| <b>Task 7. Analyze muscle plug samples to determine selenium concentrations (USFWS - Ecological Services)</b> |   |                           |                                  |  |                    |             |  |              |             |                |
| <b>Task 7 Total</b>   |   |                           |                                  |  |                    |             |  |              |             | <b>\$0</b>     |
| <b>Task 9. Analyze larval fish samples (CSU-LFL). Funded under a separate agreement.</b>                      |   |                           |                                  |  |                    |             |  |              |             |                |
| <b>Task 9 Total</b>   |   |                           |                                  |  |                    |             |  |              |             | <b>\$0</b>     |

|  |                                    |                            |                         |                    |             |                 |
|--|------------------------------------|----------------------------|-------------------------|--------------------|-------------|-----------------|
| <b>Tasks 10 and 11. Input and analyze data, write annual report.</b>                   |                                    |                            |                         |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>   |                                    |                            |                         |                    |             |                 |
|  | <b>Title</b>                       | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Fishery Biologist (GS-11)          | 1                          | 160                     | 160                | \$57.14     | \$9,142         |
| <b>Labor Subtotal</b>  |                                    |                            |                         |                    |             | <b>\$9,142</b>  |
| <b>Tasks 10 and 11 Total</b>   |                                    |                            |                         |                    |             | <b>\$9,142</b>  |
| <b>Project Management: Permitting, Coordination, Office and Administrative Support</b> |                                    |                            |                         |                    |             |                 |
| <b>Labor (Federal Salary + Benefits)</b>   |                                    |                            |                         |                    |             |                 |
|  | <b>Title</b>                       | <b>Number of Personnel</b> | <b>Hours Per Person</b> | <b>Total Hours</b> | <b>Rate</b> | <b>Total</b>    |
|  | Administrative Officer             | 1                          | 40                      | 40                 | \$45.61     | \$1,824         |
|  | Project Leader                     | 1                          | 40                      | 40                 | \$87.62     | \$3,505         |
| <b>Labor Subtotal</b>  |                                    |                            |                         |                    |             | <b>\$5,329</b>  |
| <b>Project Management Total</b>  |                                    |                            |                         |                    |             | <b>\$5,329</b>  |
| <b>Totals by Task</b>  |                                    |                            |                         |                    |             |                 |
|  | Task 1 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$20,334</b> |
|  | Task 2 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$3,382</b>  |
|  | Task 3 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$22,517</b> |
|  | Task 4 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$20,969</b> |
|  | Task 5 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$7,171</b>  |
|  | Task 6 (USFWS-GJFWCO)              |                            |                         |                    |             | <b>\$4,692</b>  |
|  | Task 7 (USFWS-Ecological Services) |                            |                         |                    |             | <b>\$0</b>      |
|  | Task 9 (CSU-LFL)                   |                            |                         |                    |             | <b>\$0</b>      |
|  | Tasks 10 and 11 (USFWS-GJFWCO)     |                            |                         |                    |             | <b>\$9,142</b>  |

|                            |                                   |  |  |  |  |                 |
|----------------------------|-----------------------------------|--|--|--|--|-----------------|
|                            | Project Management (USFWS-GJFWCO) |  |  |  |  | \$5,329         |
|                            |                                   |  |  |  |  |                 |
| <b>FY 2022 Grand Total</b> |                                   |  |  |  |  | <b>\$93,537</b> |

IX. Budget Summary:

|                 |             |
|-----------------|-------------|
| FY-2018         |             |
| USFWS- GJFWCO   | \$ 86,526   |
| USFWS-ES        | \$ 0        |
| Larval Fish Lab | <u>\$ 0</u> |
| 2018 Total      | \$ 86,526   |

|                 |           |
|-----------------|-----------|
| FY-2019         |           |
| USFWS- GJFWCO   | \$ 88,223 |
| USFWS-ES        | \$ 0      |
| Larval Fish Lab | \$ 0      |
| 2019 Total      | \$ 88,223 |

|                 |             |
|-----------------|-------------|
| FY-2020         |             |
| USFWS- GJFWCO   | \$109,740   |
| USFWS-ES        | \$ 0        |
| Larval Fish Lab | <u>\$ 0</u> |
| 2020 Total      | \$109,740   |

|               |                 |
|---------------|-----------------|
| FY-2021       |                 |
| USFWS- GJFWCO | \$114,143       |
| USFWS-ES      | \$ 0            |
| CSU-LFL       | <u>\$ 9,066</u> |
| 2021 Total    | \$123,209       |

|                 |             |
|-----------------|-------------|
| FY-2022         |             |
| USFWS- GJFWCO   | \$ 93,537   |
| USFWS-ES        | \$ 0        |
| Larval Fish Lab | <u>\$ 0</u> |
| 2022 Total      | \$ 93,537   |

5-Year Total = \$501,235

X. Reviewers: Program staff and Biology Committee

## XI. References

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