

**COLORADO RIVER RECOVERY PROGRAM
FY 2016 - 2020 PROPOSED SCOPE OF WORK**

Project No.: 98a

Middle Yampa River northern pike removal and evaluation; Middle Yampa River (South Beach section) smallmouth bass removal and evaluation; backwater northern pike removal

Reclamation Agreement number: R13AP40029
Reclamation Agreement term: July 11, 2013 - September 30, 2017

Lead Agency: Colorado Parks and Wildlife

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Category:

- Ongoing project
- Ongoing-revised project
- Requested new project
- Unsolicited proposal

Expected Funding Source:

- Annual funds
- Capital funds
- Other (explain)

I. Title of Proposal:

Middle Yampa River northern pike removal and evaluation; Middle Yampa River smallmouth bass removal and evaluation; Middle Yampa River backwater northern pike removal

II. Relationship to RIPRAP:

This study will remove northern pike from the middle Yampa River and evaluate the efficiency of that effort. Smallmouth bass will also be removed from the entire Colorado Parks and Wildlife (CPW) study area and the efficiency of the removal evaluated. CPW will also remove northern pike from selected backwater areas prior to performing river passes

Green River Action Plan: Yampa and Little Snake rivers:

- III. Reduce negative impacts of nonnative fishes and sportfish management activities (nonnative and sportfish management).
- III.A.1. Implement Yampa Basin aquatic wildlife management plan in reaches of the Yampa River occupied by endangered fishes. Each control activity will be evaluated for effectiveness and then continue as needed.
- III.A.1.b. Control northern pike.

III. Study Background/Rationale and Considerations:

Study Background/Rationale:

Susceptibility of the Colorado River Basin to nonnative fish establishment has been attributed to the low diversity of the native fish fauna, a high degree of endemism of this fauna, and the highly altered physical habitat of the basin (Hawkins and Nesler 1991). Bezzerides and Bestgen (2002) report that the native fish fauna of the Colorado River Basin consists of at least 35 species, while at least 100 nonnative fishes have been introduced into the basin (Tyus and Saunders (2000). Twenty-eight of these nonnative fish species were identified as threats to native fishes through a survey of regional fisheries biologists (Hawkins and Nesler 1991). Of these 28 species, the northern pike (*Esox lucius*) was considered by biologists as the third greatest hazard to native fishes (Hawkins and Nesler 1991).

In Colorado, the northern pike is one of 40 known, introduced fish species currently existing within the Colorado River Basin (Nesler 2003). This species has been extensively introduced outside of the species' native range for use as a large sportfish, and as a predator to control other fishes (Scott and Crossman 1973). Northern pike were first introduced to the Yampa River Basin of Colorado in 1977 when less than 1,000 fingerling northern pike were released into Elkhead Reservoir to prey upon a large number of nonnative suckers present (Roehm 2004). Elkhead Creek is located approximately four miles upstream of Craig, and is the receiving stream of Elkhead Reservoir. This creek is tributary to the Yampa River. Movement of northern pike downstream was evidenced by collection of this species in the Yampa River, as early as 1979 (Tyus and Beard 1990). Northern pike numbers within the river had increased by the early 1980s (Wick et al. 1985; Tyus and Beard 1990). Subsequent downstream movement of northern pike into the Green River was first documented less than five years after initial release in Elkhead Reservoir (Tyus and Beard 1990). This species has since established itself as a self-sustaining population within the Yampa River.

Influences of such introductions on native fish fauna are cause for great concern, especially in areas occupied by endangered species. The Yampa River downstream of Craig is designated by the U.S. Fish and Wildlife Service (USFWS) as critical habitat for the federal- and state-listed Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), bonytail (*Gila elegans*), and razorback sucker (*Xyrauchen texanus*). Primary threats to these native species include competition

with and predation by nonnative fish species (USFWS 2002). The northern pike has been identified as one of two principal, nonnative hazards to juvenile and adult Colorado pikeminnow (USFWS 2002). Northern pike and Colorado pikeminnow share similar habitat in the spring and early summer during the spawning season. Both species also rely on native sympatric species, such as roundtail chub (*Gila robusta*), flannelmouth sucker (*Catostomus latipinnis*), bluehead sucker (*Catostomus discobolus*), and speckled dace (*Rhinichthys osculus yarrowi*) as prey (Tyus and Beard 1990; Nesler 1995). Further, Nesler (1995) found that the nonnative redbreasted shiner may also be a common prey item of northern pike and Colorado pikeminnow. Overall resource sharing between the two species may also increase the likelihood of northern pike predation on young and adult endangered fishes (Tyus and Beard 1990; Nesler 1995). Thus, the potential impacts of northern pike competition with, and predation of native, sympatric species (especially the Colorado pikeminnow) are severe.

This proposed study is one of several designed for removal of northern pike and smallmouth bass, and evaluation of such efforts within the upper Colorado River Basin. CPW and Colorado State University (CSU) have cooperatively developed the logistics within this proposal. These collaborative efforts will increase the efficiency and effectiveness of removing northern pike and smallmouth bass within the middle Yampa River. Evaluation of the removal efforts will assist the Upper Colorado Recovery Program in attaining nonnative fish management goals.

Study Considerations:

Colorado Parks and Wildlife will remove northern pike and incidental smallmouth bass from backwater areas prior to conducting river removal passes and will complete a minimum of three removal passes across 47.3 miles within the time frame that weather and river conditions allow. CPW may recommend to perform a northern pike population estimate using Floy tag mark-recapture methodology in 2016. CPW will work with CSU and the US Fish and Wildlife Service-Vernal office (USFWS) to complete four additional removal passes within Reach 1 and Reach 3. CPW will also participate in the Surge and the Extended Surge for smallmouth bass removal.

A crew of eight to nine people will be required to complete this project. Temporaries will be hired for 53, 40-hour work weeks (11.8 months). Four weeks (two weeks pre-sampling and two weeks post-sampling) will be devoted to crew training, preparation and maintenance of boats and equipment, and data entry. Temporaries will work fifteen weeks to twenty weeks on the river to capture and remove northern pike and smallmouth bass. Four to five additional weeks during the period allotted for river sampling will be dedicated to crew recovery, use of compensation time, and boat/equipment maintenance. Five weeks of this time are set aside for targeted smallmouth bass removal during the spawning period. Temporary employees will not be paid overtime wages, but application of federal health care mandates may result in increased costs for temporary employees.

IV. Study Goals, Objectives, End Product:

Study Goals:

- 1) To reduce the number of northern pike in backwaters adjacent to Craig prior to and during their spawning by setting gill nets in selected backwater areas that have been identified as problematic locations.
- 2) To reduce the number of northern pike occupying 47.3 river miles of critical habitat within the Yampa River downstream of Craig, Colorado (RM 134.2 – RM 60.6), thereby benefiting native fishes of the Yampa River Basin, as well as native fish communities downstream within the Green River Basin
- 3) To reduce the number of smallmouth bass occupying 47.3 river miles of critical habitat within the Yampa River downstream of Craig, Colorado for the benefit of Yampa and Green River native fishes.

Study Objectives:

- 1) To remove as many northern pike as possible within the study area via three or more removal passes and by netting the backwater areas at ice-off.
- 2) To perform a population estimate on northern pike after the backwater netting has concluded and mainstem efforts are commenced.
- 3) To calculate the number of northern pike removed.
- 4) To remove as many smallmouth bass as possible within Critical Habitat of the middle Yampa River, downstream of Craig, CO, thereby benefiting native fishes of the Yampa River basin as well as native fish communities downstream within the Green River Basin.
- 5) To implement disruption of nests and targeted removal of smallmouth bass during the SMB spawning (the Surge) in a coordinated effort with CSU, and with CSU as the lead.
- 6) To provide CSU with smallmouth bass data to estimate the number of smallmouth bass occupying Critical Habitat of the middle Yampa River.
- 7) To calculate the number of smallmouth bass removed.

End Product:

Annual Reports will be prepared and distributed to interested parties following the field season. Smallmouth bass data will be provided to CSU. Presentations will also be provided during the Annual Nonnative Fish Control Workshop, and at the Annual Recovery Program Researchers' Meeting.

V. Study Area:

The study area for this project will focus on 47.3 miles of the Yampa River just downstream of Craig, Colorado (RM 134.2) to just upstream of Cross Mountain Canyon (RM 60.6). Specific river segments to be sampled include: Reach 1, RM 134.2 (South Beach launch) to RM 124.0 (Round Bottom), Reach 2: RM 100.0 (upstream Government Bridge) to RM 91.0 (mouth of Little Juniper Canyon), Reach 3: RM 88.7 (downstream of Juniper Canyon) to RM 79.2 (old Maybell bridge launch), Reach 4: RM 79.2 to RM 71.0 (Sunbeam launch), and Reach 5: RM 71.0 to

RM 60.6 (just upstream of Cross Mountain launch). See Table 1 for a summary of Yampa River reaches . Northern pike will not be removed by CPW in 24 miles of river, RM 124 (Round Bottom) to RM 100 (near Government Bridge). CSU has established this reach as a smallmouth bass study area. These 24 miles have also been included in previous studies for northern pike removal. Therefore, CSU will remove northern pike within these stretches in conjunction with their smallmouth bass study. CSU will also remove smallmouth bass and northern pike from downstream of Cross Mountain Canyon (RM 55.5) to just downstream of the Little Snake River confluence (RM 50.5). CSU's northern pike data will be collated with CPW data and reported by CPW. Colorado Parks and Wildlife will also remove smallmouth across the entire CPW study area. Approximately two miles of river within Juniper Canyon will not be sampled, due to non-navigable riverine conditions.

Backwater areas within and above the study area (into the 98b study area as far upstream as Hayden) will be netted at ice-off in March and early April to remove as many NPK as possible pre-spawn.

VI. Study Methods/Approach:

All northern pike, smallmouth bass, roundtail chub, and Colorado pikeminnow captured will be identified, measured in total length to the nearest millimeter (mm), and weighed to the nearest gram (g). Capture locations for northern pike and smallmouth bass will be recorded to the nearest tenth of a river mile. Northern pike and smallmouth bass collected will be examined for the presence of FLOY tags, and fin clips. FLOY tag number and color will be recorded. FLOY tag numbers and color combinations will be updated annually. Northern pike taken on the first pass will be tagged with FLOY tags and released back into the water alive. Subsequent passes will lethally remove all northern pike taken.

Colorado pikeminnow and roundtail chub captured will be scanned to determine the presence of passive integrated transponder (PIT) tags. PIT tag number will be recorded and stored in the PIT tag reader for those fish encountered with PIT tags. Individuals without PIT tags will be implanted with a new PIT tag following the appropriate protocol; tags for Colorado pikeminnow will be provided by the USFWS. Capture locations for Colorado pikeminnow and roundtail chub will be recorded to the nearest tenth of a river mile. UTM's associated with capture locations will also be recorded, when possible. All Colorado pikeminnow and roundtail chub captured will be released alive, immediately. Any native fish captured that is visibly stressed will not be processed, but rather returned to the location of capture within the river, immediately.

Incidental contact with other nonnative game fish (including centrarchids and walleye, excluding channel catfish) will result in lethal removal. All dead fish will be disposed of in the Moffat County landfill south of Craig, Colorado.

Early spring backwater removals

Backwater areas in the vicinity of Craig that have been identified as known or likely northern pike concentration areas will be netted at ice-out in March and early April to remove northern pike as soon as it is possible to gain access to the river. Backwater areas in 98a and 98b sections of the Yampa River will be included in the netting effort. All northern pike and other nonnative fish taken by this tactic will be lethally removed and disposed in a landfill. The goal of this effort is to remove northern pike from the backwater areas before they have a chance to spawn and thus reduce the annual cohort contributed to the Yampa River northern pike population by in-channel spawning.

Mainstem Yampa River Electrofishing and Backwater Netting Removals

Capture and removal of northern pike within main channel and backwater habitat will be the focus of this sampling effort. Further, capture and removal of smallmouth bass across the entire study area will continue in 2015 and out-years pending Recovery Program direction. This study will occur between the middle of April and end of July. Ten day trips across two weeks (seven/eight days on the river and two/three days travel) will constitute one pass. A minimum of one pass will be completed for northern pike and smallmouth bass removal in Reach 2, Reach 4, and Reach 5. A minimum of eight removal passes will be completed in Reach 1 and Reach 3.

In some years, one pass (the second pass) during the study will be designated for tagging and releasing northern pike. In order to integrate USFWS's study area into a combined northern pike estimate, CPW would normally initiate a northern pike tagging pass on April 20th, when USFWS plans to start on the river. This would likely be CPW's second pass overall. As such, the third pass would constitute the recapture pass and the second removal pass for northern pike. The smallmouth bass marking pass would commence when CSU initiated their third pass, a date which has not yet been determined. For 2016 and potentially future years, all mark-recapture runs will be removal only (mark-recapture estimates will not be performed), pending Recovery Program direction on population estimates.

All smallmouth bass captured during removal passes will be euthanized and either deposited in Rio Blanco County Landfill or donated to CSU for research purposes.

Two, three-person electrofishing crews will utilize jon boats with outboard jet units within each river segment to perform sampling in the main channel. Each crew will simultaneously move downstream with ETS electrofishing equipment. One crew will work one side of the river, while the second crew will work the other side. Island perimeters will also be electrofished. No river segment will be electrofished on consecutive days to allow for fish recovery and redistribution. A third, chase boat, will be operated by two additional crew members to process northern pike and other fish captured at a maximum of 2.0 mile intervals, depending on the number of fish caught.

Backwaters where CPW has obtained permission to sample will also be included within the study. Both crews will sample backwater areas along both sides of the river. A trammel net will be used with a block and shock technique. Backwater habitats will be sampled until the river recedes and habitat is no longer accessible. Output power will be adjusted within backwaters based upon changes in river conductivity. Additionally, output power will be reduced during the boat approach to the blocked mouth. Both processes will minimize the potential for electrofishing injuries to fish.

Data collected will be analyzed to determine northern pike and smallmouth bass population estimates (only in estimate years), fish densities, length frequency distributions, catch per unit effort, and movement. Length frequencies and catch per unit effort will also be determined for Colorado pikeminnow and roundtail chub. Annual Reports will include the data analyses mentioned above for all years of study in which comparable methodology and data exists. Data collected regarding Colorado pikeminnow will be provided to the USFWS.

The Surge

As has been the case since 2010, CPW will assist CSU with a targeted intensive smallmouth bass removal effort during the smallmouth bass spawning period. This will include the use of three electrofishing boats and a crew of four to five employees. Previous work has shown that adult smallmouth bass are most vulnerable to our sampling gear during this period and increased rates of removal can be achieved. Further, this effort aims to exploit our ability to interfere with the spawning process by increasing the frequency of electrofishing during the spawning period, in identified reaches used for spawning by smallmouth bass. For more information regarding the surge effort see SOW #125.

The Extended Surge

Intensive removal of smallmouth bass during their spawning period has become known as “The Surge”, an activity that concentrates the efforts of several agencies in reaches with spawning habitat. In 2012, the Surge began on May 30th and stopped 20 days later on June 19th when flows declined to base flow levels below 1000 cfs. Flows below 1000 cfs are unsafe for navigation when using hard bottom aluminum electrofishing boats. Recent work by Bestgen and Hill showed that smallmouth bass spawning continues for about 4 weeks which often includes 2-3 weeks after flows decline to or below 1000 cfs. In order to maximize the disruption of spawning this Task extends The Surge below the 1000-cfs threshold by switching to electrofishing rafts. We will also try other gear as needed including small aluminum electrofishing boats, trammel nets, and angling over nests. This extended work will be done by CSU-LFL and CPW crews and will focus on the same spawning reaches as The Surge. We are planning for this extended period to occur for an additional 2-3 weeks after flow declines below 1000 cfs. Fish will be shocked by two electrofishing crews with two boats, one on each side of the river. Colorado Parks and Wildlife and CSU-

LFL will each contribute two electrofishing rafts and one chase raft. Colorado Parks and Wildlife will contribute four or more people and CSU-LFL will contribute six people to this effort. For more information regarding the extended surge effort see SOW #125.

VII. Task Description and Schedule:

Task 1. Establish landowner contacts, obtain permission to access property and backwaters for fish sampling.

Schedule: February - March 15, 2016

Task 2. Plan logistics, hire and train personnel, order and maintain equipment, and prepare for sampling.

Schedule: February-April 2016

Task 3. Execute early spring backwater removals in the Craig area covering 98a and 98b sections of river.

Schedule: March - April 15, 2016

Task 4. Sample study area to capture and remove northern pike and smallmouth bass. Limited data entry.

Schedule: April 15 – June 15, 2016

Task 5. “The Surge” -Targeted Removal During Bass Spawn:

Schedule: June 15-July 7, 2016

Task 5.5 “The Extended Surge” – Low Flow Targeted Removal During Bass Spawn completed using electrofishing rafts.

Schedule: July 2016

Task 6. Maintenance of equipment, data entry, data analysis, and preparation of final report. Present findings during the Annual Nonnative Fish Control Workshop, and at the Annual Recovery Program Researchers Meeting.

Schedule: August-December 2016, January 2017;

VIII. Deliverables, Due Dates, and Budget by Fiscal Year:

FY-2016 Work:

Changes in Number of Removal Passes and Allocation of Effort

The removal effort expended for both species since 2010 will be slightly reduced, but increased for smallmouth bass specifically to account for recommendations to target smallmouth bass during their spawning period and when flows have dropped below the threshold that render aluminum bottomed john boats unsafe for river use. Once

flows reach this threshold, we will switch to other gear until smallmouth bass spawning has ceased.

Additional Costs to Scope of Work

The additional costs associated with 98a level of effort in the FY16 scope of work are a result of early spring backwater netting and extending the Surge. These costs are associated with the need for additional personnel time, travel per diem, and lodging. Further, one of the four seasonal technicians required for this project was switched from Technician I wages (\$14.19/hour) to Technician II wages (\$16.40/hour). This is to account for the anticipated return of a seasonal employee who has worked on this project for three years, and who fulfills a higher level of responsibility than the other Technician I's. For planning purposes the \$14.19/hour rate for three Technician I's and the \$16.40/hour rate for one Technician II was used for the FY16 budget. FY16 temporary employee salaries increase by 2.5% (includes extended surge).

Budgetary numbers projected beyond 2016 reflect increasing uncertainty in how the Program will progress through the years in the face of continuing work to eliminate Elkhead Reservoir fish escapement via spillway net installation. There is also uncertainty as to how the Affordable Care Act will affect temporary employee costs and how inflation might affect the overall cost of performing nonnative fish removal work.

FY 2016 Estimated budget:
 Temporary employee salaries increase by 2.5%.

FY-2016 Budget by Task:								
2.5% increase in temp salaries	Tech 1 Wage:			\$14.49				
	Tech II Wage:			\$16.81				
	Benefits:			18.8145%				
	Indirect:			31.1800%				
Task 1.								
Two Wildlife Manager IIIs:						Subtotals	Task Totals	
	Lodging:	Each	Nights	Positions				
		\$89.00	10	2		\$1,780.00		
	Per diem:	Each	Days	Positions				
		\$46.00	10	2		\$920.00		
					Task 1 Total:	\$2,700.00	\$2,700	
Task 2.								
Labor: One seasonal technician (Technician I)								
	Hours	Salary/hr	Benefits	Indirect	Positions			
	120	\$14.49	\$327	\$644	3	\$8,130.33		
Labor: One seasonal technician (Technician II)								
	Hours	Salary/hr	Benefits	Indirect	Positions			
	120	\$16.81	\$380	\$747	1	\$3,144.03		
Equipment								
Four ETS MBS-1DP-RLY-COS replacement units						\$26,472.00		
ETS factory calibration and shipping @ \$160 each						\$320.00		
Two Honda 6500 watt generators @ \$2,549 each						\$5,098.00		
Two belly boats and air pumps @ \$100 each and \$75 each						\$350.00		
Two replacement boat trailers for 18' jet boats						\$7,023.00		
Fifteen Gill nets @ \$250 each						\$3,750.00		
Fifteen block nets @ \$250 each						\$3,750.00		
Thirty floats @ \$15 each						\$450.00		
Dip nets; fish measuring boards; fish scales ; net pens								
24 nets at \$79 each						\$1,896.00		
5 measuring boards @ \$42 each						\$210.00		
8 spring scales @ \$53/each =						\$424.00		
Two net pens @ \$100 each						\$200.00		
Digital Scales @ \$375 each						\$750.00		
Weigh boats @ \$25.00 each						\$50.00		
FLOY tags, guns, and needles (per FLOY Tag)								
2,000 tags @ \$520/1,000 tags						\$1,040.00		
5 guns @ \$50/each						\$250.00		

	12 needles @ \$8/each					\$96.00	
Waders, lifejackets, rain gear, electrofishing gloves							
	5 pairs of waders/boots @ \$479/each					\$2,395.00	
	5 lifejackets @ \$116/each					\$580.00	
	5 sets of heavy duty rain coats and pants @ \$200 each					\$1,000.00	
	16 pairs of gloves @ \$30/each					\$480.00	
Maintenance of boats and trailers (includes replacement,							
repair and maintenance of boat and trailer parts:							
	3 tune-ups @ \$100/ each					\$300.00	
	6 spare jet sleeves/liners @ \$42/each					\$252.00	
	3 spare impellers @ \$450/each					\$1,350.00	
	9 spare water pumps and kits @ \$60/each					\$450.00	
	6 spare throttle and steering cables@\$45/each					\$270.00	
	2 spare batteries @ \$50/each					\$100.00	
	6 trailer bunks @ \$50/each					\$300.00	
	trailer lights and bearings					\$250.00	
	Injection motor oil and grease					\$800.00	
Boat fuel: 3 @ \$1,400/each							
Generator motor oil and fuel; misc. parts, tools, field gear							
Maintenance of electrofishing arrays							
	Replacement anodes, cathodes, plugs, booms, wiring, and hardware						
					Task 2 Total:	\$79,224.35	\$79,224
Task 3.							
Four seasonal technicians (Technician I's):				9, 40 hour weeks			
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$14.49	\$327	\$644	3	\$8,130.33	
	Lodging:	Nights	Each	Positions			
5 nights/trip x 3 trips		15	\$89.00	3	\$4,005	\$4,005	
	Per diem:	Days	Each	Positions			
5 days /trip x 3 trips		15	\$46.00	3	\$2,070	\$2,070.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
5 nights/trip x 3 trips		15	\$89.00	1	\$1,335	\$1,335.00	
	Per diem:	Days	Each	Positions			
5 days /trip x 3 trips		15	\$46.00	1	\$690	\$690.00	
					Task 3 Total:	\$16,230.33	\$16,230
Task 4.							
Three seasonal technicians (Technician I's):				6, 40 hour weeks			
	Hours	Salary	Benefits	Indirect	Positions		

	240	\$14.49	\$654	\$1,288	3	\$16,260.65	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00	
One seasonal technician (Technician II)				6, 40 hour weeks			
	Hours	Salary/hr	Benefits	Indirect	Positions		
	240	\$16.81	\$759	\$1,495	1	\$6,288.05	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
Four Wildlife Manager III's:							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	4	\$8,544	\$8,544.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	4	\$4,416	\$4,416.00	
				Task 4 Total:	\$48,468.70	\$48,469	
Task 5.							
Three seasonal technicians:							
	Hours	Salary	Benefits	Indirect	Positions		
	200	\$14.49	\$545	\$1,074	3	\$13,550.54	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00	
One seasonal Technician (Technician II)							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	200	\$16.81	\$633	\$1,245	1	\$5,240.04	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
				Task 5 Total:	\$34,990.59	\$34,991	
Task 5.5							
Three seasonal technicians (Technician I):							

	Hours	Salary	Benefits	Indirect	Positions		
	120	\$14.49	\$327	\$644	3	\$8,130.33	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	3	\$4,140	\$4,140.00	
One seasonal technician (Technician II):							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	120	\$16.81	\$380	\$747	1	\$3,144.03	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
					Task 5.5 Total:	\$28,854.35	\$28,854
Task 6.							
Three seasonal technicians (Technician Is)							
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$14.49	\$327	\$644	3	\$8,130.33	
One seasonal technician (Technician II):							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	120	\$16.81	\$380	\$747	1	\$3,144.03	
					Task 6 Total:	\$11,274.35	\$11,274
Task 1:	\$2,700						
Task 2:	\$79,224						
Task 3:	\$16,230						
Task 4:	\$48,469						
Task 5:	\$34,991						
Task 5.5:	\$28,854						
Task 6:	\$11,274						
	\$221,743						

FY 2017 Estimated budget:
 Temporary employee salaries increase by 2.5%.

FY-2017 Budget by Task:								
2.5% increase in temp salaries				Tech 1 Wage:	\$14.85			
				Tech II Wage:	\$17.23			
				Benefits:	18.8145%			
				Indirect:	31.1800%			
Task 1.								
Two Wildlife Manager IIIs:						Subtotals	Task Totals	
	Lodging:	Each	Nights	Positions				
		\$89.00	10	2		\$1,780.00		
	Per diem:	Each	Days	Positions				
		\$46.00	10	2		\$920.00		
					Task 1 Total:	\$2,700.00	\$2,700	
Task 2.								
Labor: One seasonal technician (Technician I)								
	Hours	Salary/hr	Benefits	Indirect	Positions			
	120	\$14.85	\$335	\$660	3	\$8,332.32		
Labor: One seasonal technician (Technician II)								
	Hours	Salary/hr	Benefits	Indirect	Positions			
	120	\$17.23	\$389	\$766	1	\$3,222.58		
Equipment								
Replace two 18' Clark boats purchased in 2004						\$14,000.00		
ETS factory calibration and shipping @ \$160 each						\$320.00		
Two Honda 6500 watt generators @ \$2,549 each						\$5,098.00		
Replace two 150 hp Mercury outboard jets						\$15,078.00		
One replacement boat trailer for 17' jet boat						\$3,500.00		
Fifteen Gill nets @ \$250 each						\$3,750.00		
Fifteen block nets @ \$250 each						\$3,750.00		
Thirty floats @ \$15 each						\$450.00		
Dip nets; fish measuring boards; fish scales ; net pens								
24 nets at \$79 each						\$1,896.00		
5 measuring boards @ \$42 each						\$210.00		
8 spring scales @ \$53/each =						\$424.00		
Two net pens @ \$100 each						\$200.00		
Digital Scales @ \$375 each						\$750.00		
Weigh boats @ \$25.00 each						\$50.00		
FLOY tags, guns, and needles (per FLOY Tag)								
2,000 tags @ \$520/1,000 tags						\$1,040.00		

	5 guns @ \$50/each					\$250.00	
	12 needles @ \$8/each					\$96.00	
Waders, lifejackets, rain gear, electrofishing gloves							
	5 pairs of waders/boots @ \$479/each					\$2,395.00	
	5 lifejackets @ \$116/each					\$580.00	
	5 sets of heavy duty rain coats and pants @ \$200 each					\$1,000.00	
	16 pairs of gloves @ \$30/each					\$480.00	
Maintenance of boats and trailers (includes replacement,							
	repair and maintenance of boat and trailer parts:						
	3 tune-ups @ \$100/ each					\$300.00	
	6 spare jet sleeves/liners @ \$42/each					\$252.00	
	3 spare impellers @ \$450/each					\$1,350.00	
	9 spare water pumps and kits @ \$60/each					\$450.00	
	6 spare throttle and steering cables@\$45/each					\$270.00	
	2 spare batteries @ \$50/each					\$100.00	
	6 trailer bunks @ \$50/each					\$300.00	
	trailer lights and bearings					\$250.00	
	Injection motor oil and grease					\$800.00	
Boat fuel: 3 @ \$1,400/each						\$4,200.00	
Generator motor oil and fuel; misc. parts, tools, field gear						\$1,450.00	
Maintenance of electrofishing arrays						\$1,644.00	
	Replacement anodes, cathodes, plugs, booms, wiring, and hardware						
					Task 2 Total:	\$78,237.90	\$78,238
Task 3.							
Four seasonal technicians (Technician I's):				9, 40 hour weeks			
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$14.85	\$335	\$660	3	\$8,332.32	
	Lodging:	Nights	Each	Positions			
5 nights/trip x 3 trips		15	\$89.00	3	\$4,005	\$4,005	
	Per diem:	Days	Each	Positions			
5 days /trip x 3 trips		15	\$46.00	3	\$2,070	\$2,070.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
5 nights/trip x 3 trips		15	\$89.00	1	\$1,335	\$1,335.00	
	Per diem:	Days	Each	Positions			
5 days /trip x 3 trips		15	\$46.00	1	\$690	\$690.00	
					Task 3 Total:	\$16,432.32	\$16,432

Task 4.								
Three seasonal technicians (Technician I's):					6, 40 hour weeks			
	Hours	Salary	Benefits	Indirect	Positions			
	240	\$14.85	\$671	\$1,320	3	\$16,664.64		
	Lodging:	Nights	Each	Positions				
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00		
	Per diem:	Days	Each	Positions				
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00		
One seasonal technician (Technician II)					6, 40 hour weeks			
	Hours	Salary/hr	Benefits	Indirect	Positions			
	240	\$17.23	\$778	\$1,532	1	\$6,445.16		
	Lodging:	Nights	Each	Positions				
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00		
	Per diem:	Days	Each	Positions				
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00		
Four Wildlife Manager III's:								
	Lodging:	Nights	Each	Positions				
8 nights/trip x 3 trips		24	\$89.00	4	\$8,544	\$8,544.00		
	Per diem:	Days	Each	Positions				
8 nights/trip x 3 trips		24	\$46.00	4	\$4,416	\$4,416.00		
						Task 4 Total:	\$49,029.80	
							\$49,030	
Task 5.								
Three seasonal technicians:								
	Hours	Salary	Benefits	Indirect	Positions			
	220	\$14.85	\$615	\$1,210	3	\$15,275.92		
	Lodging:	Nights	Each	Positions				
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00		
	Per diem:	Days	Each	Positions				
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00		
One seasonal Technician (Technician II)								
	Hours	Salary/hr	Benefits	Indirect	Positions			
	220	\$17.23	\$713	\$1,404	1	\$5,908.06		
	Lodging:	Nights	Each	Positions				
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00		
	Per diem:	Days	Each	Positions				
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00		
Wildlife Manager III								
	Lodging:	Nights	Each	Positions				
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00		
	Per diem:	Days	Each	Positions				

8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
					Task 5 Total:	\$37,383.98	\$37,384
Task 5.5							
Three seasonal technicians (Technician I):							
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$14.85	\$335	\$660	3	\$8,332.32	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	3	\$4,140	\$4,140.00	
One seasonal technician (Technician II):							
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$17.23	\$389	\$766	1	\$3,222.58	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
					Task 5.5 Total:	\$29,134.90	\$29,135
Task 6.							
Three seasonal technicians (Technician Is)							
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$14.85	\$335	\$660	3	\$8,332.32	
One seasonal technician (Technician II):							
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$17.23	\$389	\$766	1	\$3,222.58	
					Task 6 Total:	\$11,554.90	\$11,555
Task 1:	\$2,700						
Task 2:	\$78,238						
Task 3:	\$16,432						
Task 4:	\$49,030						
Task 5:	\$37,384						
Task 5.5:	\$29,135						
Task 6:	\$11,555						
	\$224,474						

FY 2018 Estimated budget:
 Temporary employee salaries increase by 2.5%.

FY-2018 Budget by Task:								
2.5% increase in temp salaries			Tech I Wage:	\$15.22				
			Tech II Wage:	\$17.66				
			Benefits:	18.8145%				
			Indirect:	31.1800%				
Task 1.								
Two Wildlife Manager IIIs:						Subtotals	Task Totals	
	Lodging:	Each	Nights	Positions				
		\$89.00	10	2		\$1,780.00		
	Per diem:	Each	Days	Positions				
		\$46.00	10	2		\$920.00		
					Task 1 Total:	\$2,700.00	\$2,700	
Task 2.								
Labor: One seasonal technician (Technician I)								
	Hours	Salary/hr	Benefits	Indirect	Positions			
	120	\$15.22	\$344	\$677	3	\$8,539.93		
Labor: One seasonal technician (Technician II)								
	Hours	Salary/hr	Benefits	Indirect	Positions			
	120	\$17.66	\$399	\$785	1	\$3,303.00		
Equipment								
Replace one 18' and one 17' Clark boats purchased in 2004						\$14,000.00		
ETS factory calibration and shipping @ \$160 each						\$320.00		
Two Honda 6500 watt generators @ \$2,549 each						\$5,098.00		
Replace two 150 hp Mercury outboard jets						\$15,078.00		
One replacement boat trailer for 18' jet boat						\$3,500.00		
Fifteen Gill nets @ \$250 each						\$3,750.00		
Fifteen block nets @ \$250 each						\$3,750.00		
Thirty floats @ \$15 each						\$450.00		
Dip nets; fish measuring boards; fish scales ; net pens								
	24 nets at \$79 each					\$1,896.00		
	5 measuring boards @ \$42 each					\$210.00		
	8 spring scales @ \$53/each =					\$424.00		
	Two net pens @ \$100 each					\$200.00		
	Digital Scales @ \$375 each					\$750.00		
	Weigh boats @ \$25.00 each					\$50.00		
FLOY tags, guns, and needles (per FLOY Tag)								
	2,000 tags @ \$520/1,000 tags					\$1,040.00		
	5 guns @ \$50/each					\$250.00		
	12 needles @ \$8/each					\$96.00		

Waders, lifejackets, rain gear, electrofishing gloves								
5 pairs of waders/boots @ \$479/each						\$2,395.00		
5 lifejackets @ \$116/each						\$580.00		
5 sets of heavy duty rain coats and pants @ \$200 each						\$1,000.00		
16 pairs of gloves @ \$30/each						\$480.00		
Maintenance of boats and trailers (includes replacement,								
repair and maintenance of boat and trailer parts:								
3 tune-ups @ \$100/ each						\$300.00		
6 spare jet sleeves/liners @ \$42/each						\$252.00		
3 spare impellers @ \$450/each						\$1,350.00		
9 spare water pumps and kits @ \$60/each						\$450.00		
6 spare throttle and steering cables@\$45/each						\$270.00		
2 spare batteries @ \$50/each						\$100.00		
6 trailer bunks @ \$50/each						\$300.00		
trailer lights and bearings						\$250.00		
Injection motor oil and grease						\$800.00		
Boat fuel: 3 @ \$1,400/each						\$4,200.00		
Generator motor oil and fuel; misc. parts, tools, field gear						\$1,450.00		
Maintenance of electrofishing arrays						\$3,957.00		
Replacement anodes, cathodes, plugs, booms, wiring, and hardware								
						Task 2 Total:	\$80,838.93	\$80,839
Task 3.								
Four seasonal technicians (Technician I's):					9, 40 hour weeks			
	Hours	Salary	Benefits	Indirect	Positions			
	120	\$15.22	\$344	\$677	3	\$8,539.93		
	Lodging:	Nights	Each	Positions				
5 nights/trip x 3 trips		15	\$89.00	3	\$4,005	\$4,005		
	Per diem:	Days	Each	Positions				
5 days /trip x 3 trips		15	\$46.00	3	\$2,070	\$2,070.00		
Wildlife Manager III								
	Lodging:	Nights	Each	Positions				
5 nights/trip x 3 trips		15	\$89.00	1	\$1,335	\$1,335.00		
	Per diem:	Days	Each	Positions				
5 days /trip x 3 trips		15	\$46.00	1	\$690	\$690.00		
						Task 3 Total:	\$16,639.93	\$16,640
Task 4.								
Three seasonal technicians (Technician I's):					6, 40 hour weeks			
	Hours	Salary	Benefits	Indirect	Positions			

	240	\$15.22	\$687	\$1,353	3	\$17,079.86	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00	
One seasonal technician (Technician II)				6, 40 hour weeks			
	Hours	Salary/hr	Benefits	Indirect	Positions		
	240	\$17.66	\$797	\$1,570	1	\$6,606.01	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
Four Wildlife Manager III's:							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	4	\$8,544	\$8,544.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	4	\$4,416	\$4,416.00	
				Task 4 Total:		\$49,605.86	\$49,606
Task 5.							
Three seasonal technicians:							
	Hours	Salary	Benefits	Indirect	Positions		
	220	\$15.22	\$630	\$1,240	3	\$15,656.54	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00	
One seasonal Technician (Technician II)							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	220	\$17.66	\$731	\$1,439	1	\$6,055.51	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
				Task 5 Total:		\$37,912.04	\$37,912
Task 5.5							
Three seasonal technicians (Technician I):							

	Hours	Salary	Benefits	Indirect	Positions		
	120	\$15.22	\$344	\$677	3	\$8,539.93	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	3	\$4,140	\$4,140.00	
One seasonal technician (Technician II):							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	120	\$17.66	\$399	\$785	1	\$3,303.00	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
					Task 5.5 Total:	\$29,422.93	\$29,423
Task 6.							
Three seasonal technicians (Technician Is)							
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$15.22	\$344	\$677	3	\$8,539.93	
One seasonal technician (Technician II):							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	120	\$17.66	\$399	\$785	1	\$3,303.00	
					Task 6 Total:	\$11,842.93	\$11,843
Task 1:	\$2,700						
Task 2:	\$80,839						
Task 3:	\$16,640						
Task 4:	\$49,606						
Task 5:	\$37,912						
Task 5.5:	\$29,423						
Task 6:	\$11,843						
	\$228,963						

FY 2019 Estimated budget:

Temporary employee salaries increase by 2.5%.

FY-2019 Budget by Task:								
2.5% increase in temp salaries			Tech I Wage:	\$15.60				
			Tech II Wage:	\$18.10				
			Benefits:	18.8145%				
			Indirect:	31.1800%				
Task 1.								
Two Wildlife Manager IIIs:						Subtotals	Task Totals	
	Lodging:	Each	Nights	Positions				
		\$89.00	10	2		\$1,780.00		
	Per diem:	Each	Days	Positions				
		\$46.00	10	2		\$920.00		
					Task 1 Total:	\$2,700.00	\$2,700	
Task 2.								
Labor: One seasonal technician (Technician I)								
	Hours	Salary/hr	Benefits	Indirect	Positions			
	120	\$15.60	\$352	\$694	3	\$8,753.15		
Labor: One seasonal technician (Technician II)								
	Hours	Salary/hr	Benefits	Indirect	Positions			
	120	\$18.10	\$409	\$805	1	\$3,385.30		
Equipment								
Replace one 18' and one 17' Clark boats purchased in 2004						\$14,000.00		
ETS factory calibration and shipping @ \$160 each						\$320.00		
Two Honda 6500 watt generators @ \$2,549 each						\$5,098.00		
Replace two 150 hp Mercury outboard jets						\$15,078.00		
One replacement boat trailer for 18' jet boat						\$3,500.00		
Fifteen Gill nets @ \$250 each						\$3,750.00		
Fifteen block nets @ \$250 each						\$3,750.00		
Thirty floats @ \$15 each						\$450.00		
Dip nets; fish measuring boards; fish scales ; net pens								
	24 nets at \$79 each					\$1,896.00		
	5 measuring boards @ \$42 each					\$210.00		
	8 spring scales @ \$53/each =					\$424.00		
	Two net pens @ \$100 each					\$200.00		
	Digital Scales @ \$375 each					\$750.00		
	Weigh boats @ \$25.00 each					\$50.00		
FLOY tags, guns, and needles (per FLOY Tag)								
	2,000 tags @ \$520/1,000 tags					\$1,040.00		
	5 guns @ \$50/each					\$250.00		
	12 needles @ \$8/each					\$96.00		

Waders, lifejackets, rain gear, electrofishing gloves								
	5 pairs of waders/boots @ \$479/each						\$2,395.00	
	5 lifejackets @ \$116/each						\$580.00	
	5 sets of heavy duty rain coats and pants @ \$200 each						\$1,000.00	
	16 pairs of gloves @ \$30/each						\$480.00	
Maintenance of boats and trailers (includes replacement,								
	repair and maintenance of boat and trailer parts:							
	3 tune-ups @ \$100/ each						\$300.00	
	6 spare jet sleeves/liners @ \$42/each						\$252.00	
	3 spare impellers @ \$450/each						\$1,350.00	
	9 spare water pumps and kits @ \$60/each						\$450.00	
	6 spare throttle and steering cables@ \$45/each						\$270.00	
	2 spare batteries @ \$50/each						\$100.00	
	6 trailer bunks @ \$50/each						\$300.00	
	trailer lights and bearings						\$250.00	
	Injection motor oil and grease						\$800.00	
Boat fuel: 3 @ \$1,400/each							\$4,200.00	
Generator motor oil and fuel; misc. parts, tools, field gear							\$3,798.00	
Maintenance of electrofishing arrays							\$3,957.00	
Replacement anodes, cathodes, plugs, booms, wiring, and hardware								
					Task 2 Total:	\$83,482.44	\$83,482	
Task 3.								
Four seasonal technicians (Technician I's):				9, 40 hour weeks				
	Hours	Salary	Benefits	Indirect	Positions			
	120	\$15.60	\$352	\$694	3	\$8,753.15		
	Lodging:	Nights	Each	Positions				
5 nights/trip x 3 trips		15	\$89.00	3	\$4,005	\$4,005		
	Per diem:	Days	Each	Positions				
5 days /trip x 3 trips		15	\$46.00	3	\$2,070	\$2,070.00		
Wildlife Manager III								
	Lodging:	Nights	Each	Positions				
5 nights/trip x 3 trips		15	\$89.00	1	\$1,335	\$1,335.00		
	Per diem:	Days	Each	Positions				
5 days /trip x 3 trips		15	\$46.00	1	\$690	\$690.00		
						Task 3 Total:	\$16,853.15	\$16,853
Task 4.								
Three seasonal technicians (Technician I's):				6, 40 hour weeks				
	Hours	Salary	Benefits	Indirect	Positions			
	240	\$15.60	\$704	\$1,387	3	\$17,506.29		

	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00	
One seasonal technician (Technician II)				6, 40 hour weeks			
	Hours	Salary/hr	Benefits	Indirect	Positions		
	240	\$18.10	\$817	\$1,609	1	\$6,770.60	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
Four Wildlife Manager IIIs:							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	4	\$8,544	\$8,544.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	4	\$4,416	\$4,416.00	
					Task 4 Total:	\$50,196.89	\$50,197
Task 5.							
Three seasonal technicians:							
	Hours	Salary	Benefits	Indirect	Positions		
	220	\$15.60	\$646	\$1,271	3	\$16,047.43	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00	
One seasonal Technician (Technician II)							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	220	\$18.10	\$749	\$1,475	1	\$6,206.38	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
					Task 5 Total:	\$38,453.81	\$38,454
Task 5.5							
Three seasonal technicians (Technician I):							
	Hours	Salary	Benefits	Indirect	Positions		

	120	\$15.60	\$352	\$694	3	\$8,753.15	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	3	\$4,140	\$4,140.00	
One seasonal technician (Technician II):							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	120	\$18.10	\$409	\$805	1	\$3,385.30	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
					Task 5.5 Total:	\$29,718.44	\$29,718
Task 6.							
Three seasonal technicians (Technician Is)							
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$15.60	\$352	\$694	3	\$8,753.15	
One seasonal technician (Technician II):							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	120	\$18.10	\$409	\$805	1	\$3,385.30	
					Task 6 Total:	\$12,138.44	\$12,138
Task 1:	\$2,700						
Task 2:	\$83,482						
Task 3:	\$16,853						
Task 4:	\$50,197						
Task 5:	\$38,454						
Task 5.5:	\$29,718						
Task 6:	\$12,138						
	\$233,543						

FY 2020 Estimated budget:
 Temporary employee salaries increase by 2.5%.

FY-2020 Budget by Task:						
2.5% increase in temp salaries			Tech I Wage:	\$15.99		
			Tech II Wage:	\$18.55		
			Benefits:	18.8145%		
			Indirect:	31.1800%		
Task 1.						
Two Wildlife Manager IIIs:						Subtotals
	Lodging:	Each	Nights	Positions		Task Totals
		\$89.00	10	2		\$1,780.00
	Per diem:	Each	Days	Positions		
		\$46.00	10	2		\$920.00
					Task 1 Total:	\$2,700.00
Task 2.						
Labor: One seasonal technician (Technician I)						
	Hours	Salary/hr	Benefits	Indirect	Positions	
	120	\$15.99	\$361	\$711	3	\$8,971.97
Labor: One seasonal technician (Technician II)						
	Hours	Salary/hr	Benefits	Indirect	Positions	
	120	\$18.55	\$419	\$825	1	\$3,469.46
Equipment						
Replace one 18' and one 17' Clark boats purchased in 2004						\$14,000.00
ETS factory calibration and shipping @ \$160 each						\$320.00
Two Honda 6500 watt generators @ \$2,549 each						\$5,098.00
Replace two 150 hp Mercury outboard jets						\$15,078.00
One replacement boat trailer for 18' jet boat						\$3,500.00
Fifteen Gill nets @ \$250 each						\$3,750.00
Fifteen block nets @ \$250 each						\$3,750.00
Thirty floats @ \$15 each						\$450.00
Dip nets; fish measuring boards; fish scales ; net pens						
	24 nets at \$79 each					\$1,896.00
	5 measuring boards @ \$42 each					\$210.00
	8 spring scales @ \$53/each =					\$424.00
	Two net pens @ \$100 each					\$200.00
	Digital Scales @ \$375 each					\$750.00
	Weigh boats @ \$25.00 each					\$50.00
FLOY tags, guns, and needles (per FLOY Tag)						
	2,000 tags @ \$520/1,000 tags					\$1,040.00
	5 guns @ \$50/each					\$250.00

	12 needles @ \$8/each					\$96.00	
Waders, lifejackets, rain gear, electrofishing gloves							
	5 pairs of waders/boots @ \$479/each					\$2,395.00	
	5 lifejackets @ \$116/each					\$580.00	
	5 sets of heavy duty rain coats and pants @ \$200 each					\$1,000.00	
	16 pairs of gloves @ \$30/each					\$480.00	
Maintenance of boats and trailers (includes replacement,							
repair and maintenance of boat and trailer parts:							
	3 tune-ups @ \$100/ each					\$300.00	
	6 spare jet sleeves/liners @ \$42/each					\$252.00	
	3 spare impellers @ \$450/each					\$1,350.00	
	9 spare water pumps and kits @ \$60/each					\$450.00	
	6 spare throttle and steering cables@\$45/each					\$270.00	
	2 spare batteries @ \$50/each					\$100.00	
	6 trailer bunks @ \$50/each					\$300.00	
	trailer lights and bearings					\$250.00	
	Injection motor oil and grease					\$800.00	
Boat fuel: 3 @ \$1,400/each							
Generator motor oil and fuel; misc. parts, tools, field gear							
						\$6,180.00	
Maintenance of electrofishing arrays							
						\$3,957.00	
	Replacement anodes, cathodes, plugs, booms, wiring, and hardware						
					Task 2 Total:	\$86,167.44	\$86,167
Task 3.							
Four seasonal technicians (Technician I's):				9, 40 hour weeks			
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$15.99	\$361	\$711	3	\$8,971.97	
	Lodging:	Nights	Each	Positions			
5 nights/trip x 3 trips		15	\$89.00	3	\$4,005	\$4,005	
	Per diem:	Days	Each	Positions			
5 days /trip x 3 trips		15	\$46.00	3	\$2,070	\$2,070.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
5 nights/trip x 3 trips		15	\$89.00	1	\$1,335	\$1,335.00	
	Per diem:	Days	Each	Positions			
5 days /trip x 3 trips		15	\$46.00	1	\$690	\$690.00	
					Task 3 Total:	\$17,071.97	\$17,072
Task 4.							
Three seasonal technicians (Technician I's):				6, 40 hour weeks			
	Hours	Salary	Benefits	Indirect	Positions		

	240	\$15.99	\$722	\$1,422	3	\$17,943.95	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00	
One seasonal technician (Technician II)				6, 40 hour weeks			
	Hours	Salary/hr	Benefits	Indirect	Positions		
	240	\$18.55	\$838	\$1,649	1	\$6,938.93	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
Four Wildlife Manager IIIs:							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	4	\$8,544	\$8,544.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	4	\$4,416	\$4,416.00	
				Task 4 Total:		\$50,802.87	\$50,803
Task 5.							
Three seasonal technicians:							
	Hours	Salary	Benefits	Indirect	Positions		
	220	\$15.99	\$662	\$1,303	3	\$16,448.62	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	3	\$3,312	\$3,312.00	
One seasonal Technician (Technician II)							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	220	\$18.55	\$768	\$1,512	1	\$6,360.68	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
8 nights/trip x 3 trips		24	\$46.00	1	\$1,104	\$1,104.00	
				Task 5 Total:		\$39,009.30	\$39,009
Task 5.5							
Three seasonal technicians (Technician I):							

	Hours	Salary	Benefits	Indirect	Positions		
	120	\$15.99	\$361	\$711	3	\$8,971.97	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	3	\$6,408	\$6,408.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	3	\$4,140	\$4,140.00	
One seasonal technician (Technician II):							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	120	\$18.55	\$419	\$825	1	\$3,469.46	
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
Wildlife Manager III							
	Lodging:	Nights	Each	Positions			
8 nights/trip x 3 trips		24	\$89.00	1	\$2,136	\$2,136.00	
	Per diem:	Days	Each	Positions			
10 days /trip x 3 trips		30	\$46.00	1	\$1,380	\$1,380.00	
					Task 5.5 Total:	\$30,021.44	\$30,021
Task 6.							
Three seasonal technicians (Technician Is)							
	Hours	Salary	Benefits	Indirect	Positions		
	120	\$15.99	\$361	\$711	3	\$8,971.97	
One seasonal technician (Technician II):							
	Hours	Salary/hr	Benefits	Indirect	Positions		
	120	\$18.55	\$419	\$825	1	\$3,469.46	
					Task 6 Total:	\$12,441.44	\$12,441
Task 1:	\$2,700						
Task 2:	\$86,167						
Task 3:	\$17,072						
Task 4:	\$50,803						
Task 5:	\$39,009						
Task 5.5:	\$30,021						
Task 6:	\$12,441						
	\$238,214						

IX. Budget Summary:

FY2016: \$221,743

FY2017: \$224,474

FY2018: \$228,963

FY2019: \$233,543

FY2020: \$238,214

X. Reviewers:

Recovery Program Director's office, Biology Committee

XI. References:

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- U.S. Fish and Wildlife Service. 2002. Colorado pikeminnow (*Ptychocheilus lucius*) Recovery Goals: amendment and supplement to the Colorado Squawfish Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region 6, Denver, Colorado.
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Tables

Table 1. Middle Yampa River reaches, river sections, reach descriptions, river miles, and the agency responsible.

River Reach	River Section	Reach Description	River Miles	Agency Responsible
1	Juniper	South Beach launch to Round Bottom	134.2-124.0	CPW
CSU 1	Juniper	Little Yampa Canyon	124.0-112.0	CSU
CSU 2	Juniper	Little Yampa Canyon	112.0-100.0	CSU
2	Juniper	Ups. Government bridge to mouth of Juniper Canyon	100.0-91.0	CPW
3	Maybell	Downstream of Juniper Canyon to Old Maybell launch	88.7-79.2	CPW
4	Maybell	Old Maybell launch to Sunbeam launch	79.2-71.0	CPW
5	Maybell	Sunbeam launch to ups. Cross Mountain launch	71.0-60.6	CPW
CSU 3	Lily Park	Lily Park	55.5-50.5	CSU