

**RECOVERY PROGRAM
FY 2014-2015 SCOPE OF WORK for:
Smallmouth bass control in the Green River**

Recovery Program Project Number: **123a**

Reclamation Agreement number: **R11PG40024 & R09AP0871**
Reclamation Agreement term: **9/16/2011-9/30/2016 & 11/21/2008-4/30/2015**

Note: Recovery Program FY14-15 scopes of work are drafted in May 2013. They often are revised before final Program approval and may subsequently be revised again in response to changing Program needs. Program participants also recognize the need and allow for some flexibility in scopes of work to accommodate new information (especially in nonnative fish management projects) and changing hydrological conditions.

Lead agency: USFWS

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Date Last Modified: 12 February 2014

Category:

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

Expected Funding Source:

- Annual funds
 Capital funds
 Other [*explain*]

I. Title of Proposal: Nonnative fish control in the Green River, Dinosaur National Monument, Desolation/Gray Canyons and the lower Green River.

II. Relationship to RIPRAP: Green River Action Plan: Mainstem
III.A.4.b.(3) Reduce negative impacts to endangered fishes from sportfish management activities—smallmouth bass in the middle and lower Green River

III. Study Background/Rationale and Hypotheses:

The Upper Colorado River Endangered Fish Recovery Program has determined that control of nonnative fish in the upper Colorado River basin is essential to the recovery of the four endangered fish species: Colorado pikeminnow, razorback sucker, humpback chub, and bonytail (UCREFRP 2013). Smallmouth bass abundance has dramatically increased in the Green River since 2000 (Badame et al. 2008). This information resulted in a recommendation from the December 2003 Nonnative Fish Control Workshop (Grand Junction, CO) to attempt control of this species in the Green River. Nine years of removal and Nonnative Fish Control Workshops have added to the knowledge base of the effort required to successfully remove smallmouth bass from the Green River. During the December 2006 workshop, participants discussed the importance of increasing the removal effort and reallocating effort to

concentration areas, resulting in this scope of work for the Echo Park to Split Mountain reach of the Green River in Utah.

In 2008, two control/monitoring trips were completed to assess smallmouth abundance and distribution within Desolation/Gray Canyons (Groves et al. 2008). The 2008 assessment showed that although distribution had spread downstream, relative abundance remained low and intensive control efforts in this reach were not warranted at that time. In January of 2011, reports of increasing smallmouth captures in the upper most section of Desolation Canyon prompted a change in the distribution of control efforts for 2011. Sampling in 2011 and 2012 resulted in overall catch rates similar to previous years, but bass were still present further downstream compared to the 2004-2006 period (Badame et al. 2011; Jones and Howard 2012).

In 2012, large numbers of young of year bass were captured in the Echo-Split reach as a result of warm, low discharge (Jones and Howard 2012). For 2013, bass removal in Desolation Canyon occurred during Colorado pikeminnow sampling (Project #128), but this sampling will not occur in 2014-2015. Thus, smallmouth bass control passes will be conducted under this project in those years.

In 2013, concern about the increased frequency of walleye captures throughout the Upper Basin sparked recommendations (2013 Nonnative Fish Control Workshop) for a targeted walleye removal effort. Of particular interest are those reaches not generally sampled (via electrofishing) when Colorado pikeminnow population estimates are not occurring. The number of walleye captured during Colorado pikeminnow estimates in the lower Green River reach (RM 120-0) tripled from 2008 to 2013. This reach is considered an important source of reproduction and recruitment for both Colorado pikeminnow and razorback sucker in the Upper Basin and is not scheduled for sampling under Project #128 in 2014-2015. Thus, removal effort targeting walleye will be conducted under this project beginning in 2014.

IV. Study Goals, Objectives, End Product(s):

Goal:

Control and monitor abundance of smallmouth bass and walleye in the Green River between Echo Park and Split Mountain boat ramp, Desolation and Gray canyons, and the lower Green River.

Objectives:

1. Remove smallmouth bass and other nonnative fishes in the Green River from Echo Park (RM 344.5) to Split Mountain (RM 319.5).
2. Monitor adult and juvenile smallmouth bass to determine extent of control needed in the Green River.
3. Remove smallmouth bass in the Green River between Sand Wash (RM 215.3) and Swasey's Rapid (RM 129.8)
4. Remove walleye and other nonnative fishes in the lower Green River from Tusher Diversion (RM 128.0) to the confluence with the Colorado River (RM 0.0).

End Products: An in-depth annual report will provide the current year's data for: adult and juvenile total CPUE, CPUE by river mile and size class, monthly length frequency histograms, CPUE for other nonnative species, total catch numbers, and estimates of spawning periods and locations. Data from past years will be included for relevant metrics to provide background and demonstrate trends.

- V. Study Area: Green River within Dinosaur National Monument from Echo Park to Split Mountain boat ramp (RMI 344.5-319.5), Desolation/Gray Canyons from Sand Wash boat ramp to Swasey's boat ramp (RMI 215.3-129.8) and the lower Green River from Tusher Diversion to the confluence with the Colorado River (RM 128.0-0.0).

VI. Study Methods/Approach:

Sampling: Smallmouth bass will be removed primarily by electrofishing. Two electrofishing boats will simultaneously electrofish each shoreline of the river. Effort will be focused on shoreline habitat that is likely to contain smallmouth bass. Sampling crews will conduct removal activities in a manner that minimizes potential negative impacts to endangered fish as a result of electrofishing activities. This includes discontinuing electrofishing when elevated numbers of endangered fish are known to be present. Twelve electrofishing passes will be conducted in the Echo/Split reach beginning in June and ending in late September. Due to low capture rates in 2011 and 2012, mark-recapture population estimates will not be attempted; therefore all passes will include removal of all size classes of smallmouth bass. All bass removed will be deposited in shoreline areas deemed low use in consultation with Dinosaur National Monument. The Vernal USFWS office will coordinate passes with Moab UDWR in order to maximize the number of passes conducted during the bass spawning and nesting period. In the Desolation/ Gray reach, two smallmouth bass electrofishing removal passes will be conducted in June and July primarily to determine if bass have expanded the range within the reach.

Because 2014 will be the first year of a targeted walleye removal effort in the lower Green River, sampling timing and methods will be broadened to span a longer date range and include electrofishing, angling, trammel netting and fyke netting. Six days of angling, trammel netting and/or fyke netting will be conducted between March and June within one mile below Tusher Diversion to assess spring walleye usage and movement in the area. Six days of electrofishing will be conducted from Tusher Diversion to Ruby Ranch (RM 128.0-97.0) in May. One electrofishing pass in October will be conducted from Green River State Park to the confluence with the Colorado River (RM 120.0-0.0) to remove walleye and identify potential aggregation and staging areas for walleye spawning in spring. This fall pass will also mirror a fall walleye removal effort that will be conducted on the lower Colorado River (Grand Junction Colorado River Fishery Project).

Data Analysis: Adult and juvenile smallmouth bass catch rates, walleye catch rates, total catch-per-unit-effort (CPUE), CPUE by river mile and length frequency histograms, and CPUE for other nonnative fish will be calculated for both reaches. Data from past years of sampling will be included for relevant comparisons and to demonstrate trends.

Fish Handling and Disposal: All other centrarchids (green sunfish, bluegill, black crappie, and largemouth bass), northern pike and white sucker encountered will be removed. Any nonnative species of special concern such as grass carp, gizzard shad, or burbot which are encountered will be removed and the appropriate state Fish and Game agencies will be contacted. All nonnative fish removed in Dinosaur National Park and Canyonlands National Park will be euthanized and deposited within the river corridor, as advised by the National Park Service. Any endangered fish captured will be scanned for a PIT tag, tagged if needed, weighed (g), measured TL (mm), and released alive. Endangered fish data will then be reported to appropriate principal investigators and included in annual reporting.

VII. Task Description and Schedule:

Task 1. Eight removal passes from Echo Park to Split Mountain boat ramp (USFWS CRFP – Vernal; July-September).

Task 2. Four removal passes from Echo Park to Split Mountain boat ramp (UDWR Moab; June - July).

Task 3. Two removal passes Desolation and Gray canyons (UDWR Moab; June-August).

Task 4. One removal pass from Green River State Park to the confluence with the Colorado River (UDWR Moab; October) (New Task).

Task 5. Twelve removal days between Tusher Diversion and Ruby Ranch (UDWR Moab; March-June) (New Task).

Task 6. Data entry, analysis, and reporting – October/November

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

FY2014:

Deliverables/Due Dates: Annual Report by November 2014.

Task 1 – USFWS Echo Sampling (8 trips)	Rate \$/hr	Total hours	Cost
Labor			
GS-12 Supervisory Fish Biologist	\$52.31	320	\$16,739
4 GS-5 Tech/ WG-5 Boat Operator	\$18.91	1280	\$24,205
Overtime for technicians (6 hrs/week x 8 weeks x 4 techs)	\$28.37	192	\$5,447
Subtotal			\$46,391
Travel			
Shuttle (3 trucks/trip x \$150/truck x 8 trips) Echo to Split Mountain			\$3,600
Per diem (5 people/day x \$30/person x 3 days/trip x 8 trips)			\$3,600
Subtotal			\$7,200
Equipment			
(3 trucks/trip x 175 mi/truck x \$0.31/mi x 8 trips) Vernal to Echo Park, round trip			\$1,302
(12 gal gas/boat x 3 boats/trip x \$4.00/gal x 8 trips)			\$768
(1 qts motor boat oil/boat x 3 boats/trip x \$11/qt)			\$33
GSA trucks (3 trucks x 2 months)	\$313	6	\$1,878
Maintenance/replacement of rafting gear (oars, repair kit supplies, raft repairs/patching, motor maintenance), sampling nets, electrofishing gear (generator maintenance, electrode replacement), safety equipment (life jackets, control pedals/mats), camping equipment (based on average annual expenses from prior years).			\$1,022
Mercury 9.9hp motor replacement	\$2,260	1	\$2,260
GS-8 Fish Tech maintenance work	\$37.49	261	\$9,785
Subtotal			\$17,048
Task 1 Total			\$70,639
Task 6 - USFWS, Data analysis, reporting, administration	Rate \$/hr	Total hours	Cost
Labor			
GS-13 Asst. Project Leader	\$60.97	80	\$4,878
GS-12 Supervisory Fish Biologist	\$52.31	336	\$17,576
GS-9 Admin. Officer	\$36.89	116	\$4,279
Subtotal			\$26,733
Travel			
Per diem (1 person x \$137/day x 3 days) Vernal to Grand Junction			\$411
Travel to give presentations at workshops and meetings (1 truck/trip x 288 mi/truck x			\$89

\$0.31/mi)

Subtotal	\$500
Task 6 USFWS Total	\$27,233
SOW USFWS Total	\$97,872

FY 2014 Costs for UDWR- Moab (Including ETS/generator)

Task 2. Four Echo/Split Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	80	\$2,377
Biologist	\$26.83	240	\$6,438
Technician	\$16.97	970	\$16,459
		subtotal	\$25,274

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (2 trucks for 10% of total fleet costs)	\$40,800.00	0.10	\$4,080
Food (5 people, 4 days, 4 passes)	\$30.00	80	\$2,400
Shuttle (2 trucks, 4 passes)	\$150.00	8	\$1,200
		subtotal	\$7,680

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$1,045
Sampling gear repair/replacement:			\$1,125
Boating gear repair/replacement:			\$1,360
Fuel for motors (10 gallons/pass)	\$4.00	40	\$160
		subtotal	\$3,690

Task 2 subtotal	\$36,644
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Task 3. Two Desolation/Grey Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	80	\$2,377
Biologist	\$26.83	240	\$6,438
Technician	\$16.97	1000	\$16,968
		subtotal	\$25,783

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (3 trucks for 10% of total fleet costs)	\$40,800.00	0.10	\$4,080
Food (6 people, 8 days, 2 passes)	\$30.00	96	\$2,880
Shuttle (3 trucks, 2 passes)	\$175.00	6	\$1,050
		subtotal	\$8,010

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$744
Sampling gear repair/replacement:			\$450
Boating gear repair/replacement:			\$1,150

Fuel for motors (50 gallons/pass)	\$4.00	100	\$400
ETS electrofisher (ETS 2013 quote)	\$5,846.00	1	\$5,846
Honda Generator (Faye Meyers 2012 quote)	\$2,600.00	1	\$2,600
		subtotal	\$11,190

Task 3 subtotal **\$44,983**

Task 4. Fall Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	80	\$2,377
Biologist	\$26.83	160	\$4,292
Technician	\$16.97	500	\$8,484
		subtotal	\$15,153

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$40,800.00	0.03	\$1,224
Food (5 people, 10 days)	\$30.00	50	\$1,500
Jet boat shuttle: Confluence-Potash (if needed)	\$1,500.00	1	\$1,500
		subtotal	\$4,224

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$300
Sampling gear repair/replacement ^c :			\$500
Boating gear repair/replacement ^d :			\$500
Fuel for motors/generators	\$4.00	100	\$400
		subtotal	\$1,700

Task 4 subtotal **\$21,077**

Task 5. Spring Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	80	\$2,377
Biologist	\$26.83	160	\$4,292
Technician	\$16.97	200	\$3,394
		subtotal	\$10,063

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$40,800.00	0.05	\$2,040
Food reimbursement (for day trips)	\$13.00	12	\$156
Food Reimbursement (camping at GRSP and NERO travel day)	\$39.00	30	\$1,170
		subtotal	\$3,366

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$0

Sampling gear repair/replacement ^c :			\$500
Boating gear repair/replacement ^d :			\$500
Fuel for motors/generators	\$4.00	40	\$160
		subtotal	\$1,160

Task 5 subtotal **\$14,589**

Task 6. Data management and reporting

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	50	\$1,485
Biologist	\$26.83	230	\$6,170
Technician	\$16.97	80	\$1,357
		subtotal	\$9,013

Task 6 subtotal **\$9,013**

Grand Total FY 2014	\$126,306
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FY 2014 Costs for UDWR- Moab (Including ETS/generator)

Task 2. Four Echo/Split Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	80	\$2,377
Biologist	\$26.83	240	\$6,438
Technician	\$16.97	970	\$16,459
		subtotal	\$25,274

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (2 trucks for 10% of total fleet costs)	\$40,800.00	0.10	\$4,080
Food (5 people, 4 days, 4 passes)	\$30.00	80	\$2,400
Shuttle (2 trucks, 4 passes)	\$150.00	8	\$1,200
		subtotal	\$7,680

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$1,045
Sampling gear repair/replacement:			\$1,125
Boating gear repair/replacement:			\$1,360
Fuel for motors (10 gallons/pass)	\$4.00	40	\$160
		subtotal	\$3,690

Task 2 subtotal **\$36,644**

Task 3. Two Desolation/Grey Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	80	\$2,377
Biologist	\$26.83	240	\$6,438
Technician	\$16.97	1000	\$16,968
		subtotal	\$25,783

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (3 trucks for 10% of total fleet costs)	\$40,800.00	0.10	\$4,080
Food (6 people, 8 days, 2 passes)	\$30.00	96	\$2,880
Shuttle (3 trucks, 2 passes)	\$175.00	6	\$1,050
		subtotal	\$8,010

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$744
Sampling gear repair/replacement:			\$450
Boating gear repair/replacement:			\$1,150
Fuel for motors (50 gallons/pass)	\$4.00	100	\$400
ETS electrofisher (ETS 2013 quote)	\$5,846.00	1	\$5,846
Honda Generator (Faye Meyers 2012 quote)	\$2,600.00	1	\$2,600
		subtotal	\$11,190

Task 3 subtotal **\$44,983**

Task 4. Fall Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	80	\$2,377
Biologist	\$26.83	160	\$4,292
Technician	\$16.97	500	\$8,484
		subtotal	\$15,153

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$40,800.00	0.03	\$1,224
Food (5 people, 10 days)	\$30.00	50	\$1,500
Jet boat shuttle: Confluence-Potash (if needed)	\$1,500.00	1	\$1,500
		subtotal	\$4,224

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$300
Sampling gear repair/replacement ^c :			\$500
Boating gear repair/replacement ^d :			\$500
Fuel for motors/generators	\$4.00	100	\$400
		subtotal	\$1,700

Task 4 subtotal **\$21,077**

Task 5. Spring Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	80	\$2,377
Biologist	\$26.83	160	\$4,292
Technician	\$16.97	200	\$3,394
		subtotal	\$10,063

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$40,800.00	0.05	\$2,040
Food reimbursement (for day trips)	\$13.00	12	\$156
Food Reimbursement (camping at GRSP and NERO travel day)	\$39.00	30	\$1,170
		subtotal	\$3,366

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$0
Sampling gear repair/replacement ^c :			\$500
Boating gear repair/replacement ^d :			\$500
Fuel for motors/generators	\$4.00	40	\$160
		subtotal	\$1,160

Task 5 subtotal **\$14,589**

Task 6. Data management and reporting

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$29.71	50	\$1,485
Biologist	\$26.83	230	\$6,170
Technician	\$16.97	80	\$1,357
		subtotal	\$9,013

Task 6 subtotal **\$9,013**

Grand Total FY 2014	\$126,306
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^a The State of Utah uses Automotive Resources Inc. for motor pool operations. Rental is approximately \$6,800/year/vehicle (includes fleet rental, mileage, and gas), which is based on the average annual cost for all trucks used in our program.

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

^c Includes, but is not limited to, trammel nets, dip nets, PIT tag readers, scales, spot lights, electrofishing units, generators, data loggers.

^d Includes, but is not limited to, raft repair/replacement, outboard motor parts and maintenance, propellers, oars, raft frame repair, dry boxes.

^{b,c,d} Estimated costs are based on actual costs from previous years plus an estimated 2% cost of living increase each year following.

FY2015:

Deliverables/Due Dates: Annual Report by November 2015.

Task 1 – USFWS Echo Sampling (8 trips)	Rate \$/hr	Total hours	Cost
Labor			
GS-12 Supervisory Fish Biologist	\$53.36	320	\$17,075
4 GS-5 Tech/ WG-5 Boat Operator	\$19.29	1280	\$24,691
Overtime for technicians (6 hrs/week x 8 weeks x 4 techs)	\$28.94	192	\$5,556
Subtotal			\$47,323
Travel			
Shuttle (3 trucks/trip x \$150/truck x 8 trips) Echo to Split Mountain			\$3,600
Per diem (5 people/day x \$30/person x 3 days/trip x 8 trips)			\$3,600
Subtotal			\$7,200
Equipment			
(3 trucks/trip x 175 mi/truck x \$0.32/mi x 8 trips) Vernal to Echo Park, round trip			\$1,344
(12 gal gas/boat x 3 boats/trip x \$4.00/gal x 8 trips)			\$768
(1 qts motor boat oil/boat x 3 boats/trip x \$11/qt)			\$33
GSA trucks (3 trucks x 2 months)	\$320	6	\$1,920
Maintenance/replacement of rafting gear (oars, repair kit supplies, raft repairs/patching, motor maintenance), sampling nets, electrofishing gear (generator maintenance, electrode replacement), safety equipment (life jackets, control pedals/mats), camping equipment (based on average annual expenses from prior years).			\$1,022
GS-8 Fish Tech maintenance work	\$38.24	261	\$9,981
Subtotal			\$15,068
Task 1 Total			\$69,591
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Task 6 - USFWS, Data analysis, reporting, administration	Rate \$/hr	Total hours	Cost
Labor			
GS-13 Asst. Project Leader	\$60.97	80	\$4,878
GS-12 Supervisory Fish Biologist	\$53.36	336	\$17,929
GS-9 Admin. Officer	\$38.65	116	\$4,483
Subtotal			\$27,290
Travel			
Per diem (1 person x \$137/day x 3 days) Vernal to Grand Junction			\$411
Travel to give presentations at workshops and meetings (1 truck/trip x 288 mi/truck x \$0.32/mi)			\$92
Subtotal			\$503
Task 6 USFWS Total			\$27,793

FY 2015 Costs for UDWR- Moab (2% increase from FY14 minus ETS/generator)

Task 2. Four Echo/Split Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.30	80	\$2,424
Biologist	\$27.36	240	\$6,567
Technician	\$17.31	970	\$16,788
		subtotal	\$25,780

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (2 trucks for 10% of total fleet costs)	\$41,616.00	0.10	\$4,162
Food (5 people, 4 days, 4 passes)	\$30.60	80	\$2,448
Shuttle (2 trucks, 4 passes)	\$153.00	8	\$1,224
		subtotal	\$7,834

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$1,229
Sampling gear repair/replacement:			\$1,148
Boating gear repair/replacement:			\$1,224
Fuel for motors (10 gallons/pass)	\$4.08	40	\$163
		subtotal	\$3,763

Task 2 subtotal	\$37,376
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Task 3. Two Desolation/Grey Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.30	80	\$2,424
Biologist	\$27.36	240	\$6,567
Technician	\$17.31	1000	\$17,307
		subtotal	\$26,299

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (3 trucks for 10% of total fleet costs)	\$41,616.00	0.10	\$4,162
Food (6 people, 8 days, 2 passes)	\$30.60	96	\$2,938
Shuttle (3 trucks, 2 passes)	\$178.50	6	\$1,071
		subtotal	\$8,170

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$759
Sampling gear repair/replacement:			\$459
Boating gear repair/replacement:			\$1,173
Fuel for motors (50 gallons/pass)	\$4.08	100	\$408
		subtotal	\$2,799

Task 3 subtotal	\$37,268
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Task 4. Fall Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.30	80	\$2,424
Biologist	\$27.36	160	\$4,378
Technician	\$17.31	500	\$8,654
		subtotal	\$15,456

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$41,616.00	0.03	\$1,248
Food (5 people, 10 days)	\$30.60	50	\$1,530
Jet boat shuttle: Confluence-Potash (if needed)	\$1,530.00	1	\$1,530
		subtotal	\$4,308

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$306
Sampling gear repair/replacement ^c :			\$510
Boating gear repair/replacement ^d :			\$510
Fuel for motors/generators	\$4.08	100	\$408
		subtotal	\$1,734

Task 4 subtotal	\$21,499
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Task 5. Spring Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.30	80	\$2,424
Biologist	\$27.36	160	\$4,378
Technician	\$17.31	200	\$3,461
		subtotal	\$10,264

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$41,616.00	0.05	\$2,081
Food reimbursement (for day trips)	\$13.26	12	\$159
Food Reimbursement (camping at GRSP and NERO travel day)	\$39.78	30	\$1,193
		subtotal	\$3,433

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$0
Sampling gear repair/replacement ^c :			\$510
Boating gear repair/replacement ^d :			\$510
Fuel for motors/generators	\$4.08	40	\$163

subtotal \$1,183

Task 5 subtotal \$14,880

Task 6. Data management and reporting

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.30	50	\$1,515
Biologist	\$27.36	230	\$6,294
Technician	\$17.31	80	\$1,385
		subtotal	\$9,193

Task 6 subtotal \$9,193

Grand Total FY 2015	\$120,217
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FY2016:

Deliverables/Due Dates: Annual Report by November 2016.

Task 1 – USFWS Echo Sampling (8 trips)	Rate \$/hr	Total hours	Cost
Labor			
GS-12 Supervisory Fish Biologist	\$54.43	320	\$17,418
4 GS-5 Tech/ WG-5 Boat Operator	\$19.68	1280	\$25,190
Overtime for technicians (6 hrs/week x 8 weeks x 4 techs)	\$29.52	192	\$5,668
Subtotal			\$48,276
Travel			
Shuttle (3 trucks/trip x \$150/truck x 8 trips) Echo to Split Mountain			\$3,600
Per diem (5 people/day x \$30/person x 3 days/trip x 8 trips)			\$3,600
Subtotal			\$7,200
Equipment			
(3 trucks/trip x 175 mi/truck x \$0.33/mi x 8 trips) Vernal to Echo Park, round trip			\$1,386
(12 gal gas/boat x 3 boats/trip x \$4.00/gal x 8 trips)			\$768
(1 qts motor boat oil/boat x 3 boats/trip x \$11/qt)			\$33
GSA trucks (3 trucks x 2 months)	\$325	6	\$1,950
Maintenance/replacement of rafting gear (oars, repair kit supplies, raft repairs/patching, motor maintenance), sampling nets, electrofishing gear (generator maintenance, electrode replacement), safety equipment (life jackets, control pedals/mats), camping equipment (based on average annual expenses from prior years).			\$1,022
GS-8 Fish Tech maintenance work	\$39.01	261	\$10,182
Subtotal			\$15,341
Task 1 Total			\$70,816
<hr/>			
Task 6 - USFWS, Data analysis, reporting, administration	Rate \$/hr	Total hours	Cost
Labor			
GS-13 Asst. Project Leader	\$62.19	80	\$4,975
GS-12 Supervisory Fish Biologist	\$54.43	336	\$18,288
GS-9 Admin. Officer	\$39.43	116	\$4,574
Subtotal			\$27,838
Travel			
Per diem (1 person x \$137/day x 3 days) Vernal to Grand Junction			\$411
Travel to give presentations at workshops and meetings (1 truck/trip x 288 mi/truck x \$0.33/mi)			\$95
Subtotal			\$506
Task 6 USFWS Total			\$28,344

FY 2016 Costs for UDWR- Moab (2% increase from FY15)

Task 2. Four Echo/Split Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.91	80	\$2,473
Biologist	\$27.91	240	\$6,699
Technician	\$17.65	970	\$17,124
		subtotal	\$26,295

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (2 trucks for 10% of total fleet costs)	\$42,448.32	0.10	\$4,245
Food (5 people, 4 days, 4 passes)	\$31.21	80	\$2,497
Shuttle (2 trucks, 4 passes)	\$156.06	8	\$1,248
		subtotal	\$7,990

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$1,253
Sampling gear repair/replacement:			\$1,170
Boating gear repair/replacement:			\$1,248
Fuel for motors (10 gallons/pass)	\$4.16	40	\$166
		subtotal	\$3,839

Task 2 subtotal**\$38,124**

Task 3. Two Desolation/Grey Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.91	80	\$2,473
Biologist	\$27.91	240	\$6,699
Technician	\$17.65	1000	\$17,654
		subtotal	\$26,825

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (3 trucks for 10% of total fleet costs)	\$42,448.32	0.10	\$4,245
Food (6 people, 8 days, 2 passes)	\$31.21	96	\$2,996
Shuttle (3 trucks, 2 passes)	\$182.07	6	\$1,092
		subtotal	\$8,334

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$774
Sampling gear repair/replacement:			\$468
Boating gear repair/replacement:			\$1,196
Fuel for motors (50 gallons/pass)	\$4.16	100	\$416
		subtotal	\$2,855

Task 3 subtotal **\$38,013**

Task 4. Fall Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.91	80	\$2,473
Biologist	\$27.91	160	\$4,466
Technician	\$17.65	500	\$8,827
		subtotal	\$15,765

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$42,448.32	0.03	\$1,273
Food (5 people, 10 days)	\$31.21	50	\$1,561
Jet boat shuttle: Confluence-Potash (if needed)	\$1,560.60	1	\$1,561
		subtotal	\$4,395

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$312
Sampling gear repair/replacement ^c :			\$520
Boating gear repair/replacement ^d :			\$520
Fuel for motors/generators	\$4.16	100	\$416
		subtotal	\$1,769

Task 4 subtotal **\$21,929**

Task 5. Spring Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.91	80	\$2,473
Biologist	\$27.91	160	\$4,466
Technician	\$17.65	200	\$3,531
		subtotal	\$10,469

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$42,448.32	0.05	\$2,122
Food reimbursement (for day trips)	\$13.53	12	\$162
Food Reimbursement (camping at GRSP and NERO travel day)	\$40.58	30	\$1,217
		subtotal	\$3,502

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$0
Sampling gear repair/replacement ^c :			\$520
Boating gear repair/replacement ^d :			\$520
Fuel for motors/generators	\$4.16	40	\$166

subtotal **\$1,206**

Task 5 subtotal **\$15,178**

Task 6. Data management and reporting

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$30.91	50	\$1,545
Biologist	\$27.91	230	\$6,419
Technician	\$17.65	80	\$1,412
		subtotal	<u>\$9,377</u>

Task 6 subtotal **\$9,377**

Grand Total FY 2016	\$122,621
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FY2017:

Deliverables/Due Dates: Annual Report by November 2017.

Task 1 – USFWS Echo Sampling (8 trips)	Rate \$/hr	Total hours	Cost
Labor			
GS-12 Supervisory Fish Biologist	\$55.51	320	\$17,763
4 GS-5 Tech/ WG-5 Boat Operator	\$20.07	1280	\$25,690
Overtime for technicians (6 hrs/week x 8 weeks x 4 techs)	\$30.11	192	\$5,781
Subtotal			\$49,234
Travel			
Shuttle (3 trucks/trip x \$150/truck x 8 trips) Echo to Split Mountain			\$3,600
Per diem (5 people/day x \$30/person x 3 days/trip x 8 trips)			\$3,600
Subtotal			\$7,200
Equipment			
(3 trucks/trip x 175 mi/truck x \$0.34/mi x 8 trips) Vernal to Echo Park, round trip			\$1,428
(12 gal gas/boat x 3 boats/trip x \$4.00/gal x 8 trips)			\$768
(1 qts motor boat oil/boat x 3 boats/trip x \$11/qt)			\$33
GSA trucks (3 trucks x 2 months)	\$332	6	\$1,992
Maintenance/replacement of rafting gear (oars, repair kit supplies, raft repairs/patching, motor maintenance), sampling nets, electrofishing gear (generator maintenance, electrode replacement), safety equipment (life jackets, control pedals/mats), camping equipment (based on average annual expenses from prior years).			\$1,022
GS-8 Fish Tech maintenance work	\$39.79	261	\$10,385
Subtotal			\$15,628
Task 1 Total			\$72,062
<hr/>			
Task 6 - USFWS, Data analysis, reporting, administration	Rate \$/hr	Total hours	Cost
Labor			
GS-13 Asst. Project Leader	\$63.43	80	\$5,074
GS-12 Supervisory Fish Biologist	\$55.51	336	\$18,651
GS-9 Admin. Officer	\$40.22	116	\$4,666
Subtotal			\$28,391
Travel			
Per diem (1 person x \$137/day x 3 days) Vernal to Grand Junction			\$411
Travel to give presentations at workshops and meetings (1 truck/trip x 288 mi/truck x \$0.34/mi)			\$98
Subtotal			\$509
Task 6 USFWS Total			\$28,900

FY 2017 Costs for UDWR- Moab (2% increase from FY16)

Task 2. Four Echo/Split Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$31.53	80	\$2,522
Biologist	\$28.47	240	\$6,833
Technician	\$18.01	970	\$17,466
		subtotal	\$26,821

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (2 trucks for 10% of total fleet costs)	\$43,297.29	0.10	\$4,330
Food (5 people, 4 days, 4 passes)	\$31.84	80	\$2,547
Shuttle (2 trucks, 4 passes)	\$159.18	8	\$1,273
		subtotal	\$8,150

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$1,278
Sampling gear repair/replacement:			\$1,194
Boating gear repair/replacement:			\$1,273
Fuel for motors (10 gallons/pass)	\$4.24	40	\$170
		subtotal	\$3,915

Task 2 subtotal **\$38,887**

Task 3. Two Desolation/Grey Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$31.53	80	\$2,522
Biologist	\$28.47	240	\$6,833
Technician	\$18.01	1000	\$18,007
		subtotal	\$27,361

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (3 trucks for 10% of total fleet costs)	\$43,297.29	0.10	\$4,330
Food (6 people, 8 days, 2 passes)	\$31.84	96	\$3,056
Shuttle (3 trucks, 2 passes)	\$185.71	6	\$1,114
		subtotal	\$8,500

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$790
Sampling gear repair/replacement:			\$478
Boating gear repair/replacement:			\$1,220

Fuel for motors (50 gallons/pass)	\$4.24	100	\$424
		subtotal	\$2,912

Task 3 subtotal **\$38,774**

Task 4. Fall Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$31.53	80	\$2,522
Biologist	\$28.47	160	\$4,555
Technician	\$18.01	500	\$9,003
		subtotal	\$16,080

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$43,297.29	0.03	\$1,299
Food (5 people, 10 days)	\$31.84	50	\$1,592
Jet boat shuttle: Confluence-Potash (if needed)	\$1,591.81	1	\$1,592
		subtotal	\$4,483

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$318
Sampling gear repair/replacement ^c :			\$530
Boating gear repair/replacement ^d :			\$530
Fuel for motors/generators	\$4.24	100	\$424
		subtotal	\$1,804

Task 4 subtotal **\$22,367**

Task 5. Spring Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$31.53	80	\$2,522
Biologist	\$28.47	160	\$4,555
Technician	\$18.01	200	\$3,601
		subtotal	\$10,679

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$43,297.29	0.05	\$2,165
Food reimbursement (for day trips)	\$13.80	12	\$166
Food Reimbursement (camping at GRSP and NERO travel day)	\$41.39	30	\$1,242
		subtotal	\$3,572

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$0
Sampling gear repair/replacement ^c :			\$530

Boating gear repair/replacement ^d :			\$530
Fuel for motors/generators	\$4.24	40	\$170
		subtotal	\$1,230

Task 5 subtotal **\$15,481**

Task 6. Data management and reporting

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$31.53	50	\$1,576
Biologist	\$28.47	230	\$6,548
Technician	\$18.01	80	\$1,441
		subtotal	\$9,565

Task 6 subtotal **\$9,565**

Grand Total FY 2017	\$125,072
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FY2018:

Deliverables/Due Dates: Annual Report by November 2018.

Task 1 – USFWS Echo Sampling (8 trips)	Rate \$/hr	Total hours	Cost
Labor			
GS-12 Supervisory Fish Biologist	\$56.62	320	\$18,118
4 GS-5 Tech/ WG-5 Boat Operator	\$20.47	1280	\$26,202
Overtime for technicians (6 hrs/week x 8 weeks x 4 techs)	\$30.71	192	\$5,896
Subtotal			\$50,216
Travel			
Shuttle (3 trucks/trip x \$150/truck x 8 trips) Echo to Split Mountain			\$3,600
Per diem (5 people/day x \$30/person x 3 days/trip x 8 trips)			\$3,600
Subtotal			\$7,200
Equipment			
(3 trucks/trip x 175 mi/truck x \$0.35/mi x 8 trips) Vernal to Echo Park, round trip			\$1,470
(12 gal gas/boat x 3 boats/trip x \$4.00/gal x 8 trips)			\$768
(1 qts motor boat oil/boat x 3 boats/trip x \$11/qt)			\$33
GSA trucks (3 trucks x 2 months)	\$332	6	\$1,992
Maintenance/replacement of rafting gear (oars, repair kit supplies, raft repairs/patching, motor maintenance), sampling nets, electrofishing gear (generator maintenance, electrode replacement), safety equipment (life jackets, control pedals/mats), camping equipment (based on average annual expenses from prior years).			\$1,022
GS-8 Fish Tech maintenance work	\$40.58	261	\$10,591
Subtotal			\$15,876
Task 1 Total			\$73,293
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Task 6 - USFWS, Data analysis, reporting, administration	Rate \$/hr	Total hours	Cost
Labor			
GS-13 Asst. Project Leader	\$64.70	80	\$5,176
GS-12 Supervisory Fish Biologist	\$56.62	336	\$19,024
GS-9 Admin. Officer	\$41.02	116	\$4,758
Subtotal			\$28,959
Travel			
Per diem (1 person x \$137/day x 3 days) Vernal to Grand Junction			\$411
Travel to give presentations at workshops and meetings (1 truck/trip x 288 mi/truck x \$0.35/mi)			\$101
Subtotal			\$512
Task 6 USFWS Total			\$29,471

FY 2018 Costs for UDWR- Moab (2% increase from FY17)

Task 2. Four Echo/Split Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$32.16	80	\$2,573
Biologist	\$29.04	240	\$6,969
Technician	\$18.37	970	\$17,816
		subtotal	\$27,358

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (2 trucks for 10% of total fleet costs)	\$44,163.23	0.10	\$4,416
Food (5 people, 4 days, 4 passes)	\$32.47	80	\$2,598
Shuttle (2 trucks, 4 passes)	\$162.36	8	\$1,299
		subtotal	\$8,313

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$1,304
Sampling gear repair/replacement:			\$1,218
Boating gear repair/replacement:			\$1,299
Fuel for motors (10 gallons/pass)	\$4.33	40	\$173
		subtotal	\$3,994

Task 2 subtotal

\$39,664

Task 3. Two Desolation/Grey Removal Passes

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$32.16	80	\$2,573
Biologist	\$29.04	240	\$6,969
Technician	\$18.37	1000	\$18,367
		subtotal	\$27,909

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs (3 trucks for 10% of total fleet costs)	\$44,163.23	0.10	\$4,416
Food (6 people, 8 days, 2 passes)	\$32.47	96	\$3,117
Shuttle (3 trucks, 2 passes)	\$189.43	6	\$1,137
		subtotal	\$8,670

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement:			\$805
Sampling gear repair/replacement:			\$487
Boating gear repair/replacement:			\$1,245
Fuel for motors (50 gallons/pass)	\$4.33	100	\$433
		subtotal	\$2,970

Task 3 subtotal **\$39,549**

Task 4. Fall Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$32.16	80	\$2,573
Biologist	\$29.04	160	\$4,646
Technician	\$18.37	500	\$9,183
		subtotal	\$16,402

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$44,163.23	0.03	\$1,325
Food (5 people, 10 days)	\$32.47	50	\$1,624
Jet boat shuttle: Confluence-Potash (if needed)	\$1,623.65	1	\$1,624
		subtotal	\$4,572

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$324
Sampling gear repair/replacement ^c :			\$541
Boating gear repair/replacement ^d :			\$541
Fuel for motors/generators	\$4.33	100	\$433
		subtotal	\$1,839

Task 4 subtotal **\$22,813**

Task 5. Spring Walleye Removal- Lower Green River (New Task)

Labor: salary + benefits + applicable overtime (personnel services)

	Rate	Hours	Cost
Project Leader	\$32.16	80	\$2,573
Biologist	\$29.04	160	\$4,646
Technician	\$18.37	200	\$3,673
		subtotal	\$10,892

Food and Transport (current expense)

	Rate	Quantity	Cost
Fleet Costs ^a (3 trucks for 1% of total fleet costs)	\$44,163.23	0.05	\$2,208
Food reimbursement (for day trips)	\$14.08	12	\$169
Food Reimbursement (camping at GRSP and NERO travel day)	\$42.22	30	\$1,267
		subtotal	\$3,644

Equipment (current expense)

	Rate	Quantity	Cost
Camping gear repair/replacement ^b :			\$0
Sampling gear repair/replacement ^c :			\$541
Boating gear repair/replacement ^d :			\$541
Fuel for motors/generators	\$4.33	40	\$173

	subtotal	\$1,255
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Task 5 subtotal		\$15,791
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Task 6. Data management and reporting		
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<u>Labor: salary + benefits + applicable overtime (personnel services)</u>		
	Rate	Hours
Project Leader	\$32.16	50
Biologist	\$29.04	230
Technician	\$18.37	80
		<hr/>
	subtotal	\$9,756
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Task 6 subtotal		\$9,756
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Grand Total FY 2018		\$127,573

IX. Budget Summary:

	USFWS Vernal	UDWR Moab	Yearly Total
FY 2014:	\$97,872	\$126,306	\$224,178
FY 2015:	\$97,383	\$120,217	\$217,600
FY 2016:	\$99,160	\$122,621	\$221,781
FY 2017:	\$100,962	\$125,072	\$226,034
FY 2018:	\$102,763	\$127,573	\$230,336

X. Reviewers:

XI. References:

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Groves, J., D. Irving, M. Fuller, and P. Badame. 2008. Nonnative fish control in the Green River, and associated tributaries, within the Uintah and Ouray Indian Reservation, Utah. Project 154 annual report to the Upper Colorado River Endangered Fish Recovery Program, Denver, CO.

Jones, M.T. and J. Howard. 2012. Smallmouth bass control in the Green River. Project 123a annual report to the Upper Colorado River Endangered Fish Recovery Program, Denver, CO.

Upper Colorado River Endangered Fish Recovery Program. 2013. Recovery implementation program recovery action plan. April 2013.