

COLORADO RIVER RECOVERY PROGRAM
FY-2014-2018 PROPOSED SCOPE OF WORK for:
(Recovery Program Hydrology Support)

Project No.: 19 Hydro

Lead Agency: U.S. Fish and Wildlife Service
Submitted by:

Principal Investigator: Jana Mohrman
FWS Hydrologist
PO Box 25486 DFCErrror! Bookmark not defined.
Denver, CO 80225
Phone: (303) 968-7322 x268
Fax: (303) 969-7327

Date: June 13, 2013 revised for Aspinall PBO 12/6/2013

<u>Category:</u>	<u>Expected Funding Source:</u>
<input type="checkbox"/> Ongoing Project	<input checked="" type="checkbox"/> Annual funds
<input checked="" type="checkbox"/> Ongoing-revised project	<input type="checkbox"/> Capital funds
<input type="checkbox"/> Requested new project	<input type="checkbox"/> Other (explain)
<input type="checkbox"/> Unsolicited proposal	

I. Title of Proposal: Recovery Program Hydrology Support

II. Relationship to RIPRAP:

General Recovery Program Support Action Plan:

I.A. Evaluate methods for defining habitat-flow needs and select methods most appropriate to specific stream reaches.

Green River Action Plan: Mainstem

I.A.3.d. Operate Flaming Gorge Dam to provide winter and spring flows and revised summer/fall flows, pursuant to the new Biological Opinion.

I.A.4., I.B.3. Legally protect identified flows.

I.D. Evaluate and revise as needed, flow regimes to benefit endangered fish populations.

ID1d, Determine relationship of backwater development to sediment availability and peak flows in Reach 2.

Green River Action Plan: Yampa and Little Snake Rivers

I.A.1.f Install, operate, and/or maintain stream flow monitoring gages.

I.B.2.a.2.b. Deliver Elkhead Reservoir Releases

Green River Action Plan: Duchesne River

I.D.1 Determine feasibility and benefits of coordinated reservoir operations.

I.F. Determine need and feasibility of additional gaging.

I.G. Evaluate and revise as needed, flow regimes to benefit endangered fish populations.

Green River Action Plan: White River

I.A. Assess need for tributary management plan for the White River.

I.F. Evaluate and revise as needed, flow regimes to benefit endangered fish populations.

Colorado River Action Plan

I.A.3.a. Collect data for 15-MR PBO depletion accounting.

I.A.3.b. Develop Consumptive Use and Loss report for CRDSS model

I.A.5. Provide and legally protect instream flows pursuant to Colorado River PBO

I.A.5.a. Deliver Ruedi flows to 15-Mile Reach

I.A.5.h. Deliver Wolford Mountain flows.

I.A.5.i.2. Coordinated Reservoir operations (CROPS)

I.A.5.m.2. Coordinated Facilities operations (CFOPS)

I.A.6. Review implementation of RIPRAP items to determine timely compliance with applicable schedules (every 2 yrs. beginning in 2003).

I.B.4.c.2.

On February 27, 2012 Reclamation's Western Colorado Area Office release of the final Aspinall Unit Operations Environmental Impact Statement. The purpose of the EIS is to outline Aspinall Unit operations to avoid jeopardy to downstream endangered fish species while continuing to meet the congressionally authorized unit purposes. In general, new operations will provide higher spring flows and protect base flows in the Gunnison River.

<http://www.usbr.gov/uc/envdocs/eis/AspinallEIS/>

The Record of Decision (ROD) was released April of 2012

<http://www.usbr.gov/uc/envdocs/eis/AspinallEIS/ROD.pdf>

I.E. Evaluate and revise as needed, flow regimes to benefit endangered fish populations.

III. Study Background/Rationale and Hypotheses:

This proposal represents the US Fish and Wildlife Service (Service) Hydrologist activities that support the Program Directors office, river temperature monitoring and ongoing research and monitoring activities. Activities are, for the most part, broken down by specific task with task descriptions, budgets, and deliverables.

IV. Study Goals, Objectives, End Product:

Study Goal: To support, identify, evaluate and protection of instream flows to benefit Colorado River endangered fish.

Study Objectives:

1. To negotiate contracts and leases of water for endangered fish.
2. To collect temperature and hydrological data in support of Recovery program research priorities.
3. To provide water management services to the Recovery Program and Service to manage water the Service has secured for endangered fish augmentation.
4. To provide staff support to the Recovery Program Directors Office on an as-needed basis in the area of instream flow identification, delivery and protection.

V. Study Area:

The Colorado and Green River Basin above Lake Powell.

VI. Study Methods/Approach:

The Service Hydrologist provides hydrological and temperature information to Recovery Program researchers. In addition to this work a number of specific tasks (described below) are undertaken to support instream flow protection of the Recovery Program.

VII. Schedule: Tasks will be completed November 1st of each year

VIII. FY 2014 and 2018 Tasks:

Task 1. Temperature Data Collection and Analysis:

In coordination with the CRFP offices in Grand Junction and Vernal, water temperature data will be gathered systematically to support the water temperature model and other research projects. Thermographs were installed at five locations on the Gunnison River, five locations on the Colorado River, and five locations on the Green River. The thermographs will be checked periodically and calibrated with on-site temperature readings. Temperature data collection on the Colorado River by CRFP was consolidated in this Scope of Work beginning in FY- 99 and a separate budget table is included for this work, the information for these gages can be found at: <http://www.r6.fws.gov/riverdata/>

The temperature data, together with climatic, hydrologic, and stream geometry data, will be used to support ongoing research and future river temperature modeling and backwater studies. The temperature data from each of the thermographs will be made available on the Internet shortly after the data is collected. The temperature data along with the channel monitoring and sediment monitoring data will add to the Recovery Program Physical Data Repository.

Task 2. Hydrology Support for Colorado River Biological Opinions:

The Service Hydrologist will help coordinate of releases from Flaming Gorge and the Aspinnall Unit for endangered fish. Releases will be monitored and researchers and administrators will be notified of important changes in planned release patterns. The Service Hydrologist will also schedule and monitor releases from Ruedi, Williams Fork and Wolford Mountain Reservoir for flow augmentation in the 15-Mile Reach.

Work will support activities of the Yampa River Management Plan and Programmatic Biological Opinion in managing the water from Elkhead Reservoir in 2012 and 2013.

Colorado River's PBO periodic review of Progress; the Service Hydrologist will continue to work with the staff for the Recovery Program and the Colorado Water Conservation Board which began in 2007, and will **be revisited in 2009** to monitor progress under the PBO.

The Service Hydrologist is coordinating an effort that to: Develop a management plan that: 1) identifies historic and a most likely future depletion scenario; 2) uses (and refines) the Recovery Program's draft endangered fish flow recommendations and current hydrology to identify the effects of past and future water development on endangered fish habitat; 3) develops flow recommendations for the White River and 4) identifies recovery actions needed to offset depletion effects. A federal-state cooperative or other agreement to implement the resultant management plan will constitute the federal action (likely via USFWS participation) that serves as the basis for a Section 7 consultation and development of a White River PBO

Continue to coordinate updating and promotion the PIT tag/GIS database.

Task 3. Hydrology Support for Other Scopes of Work:

Coordinated Reservoir Operations- Assistance will be provided to Bureau of Reclamation in implementing the annual coordinated reservoir program. A monitoring program will be developed to identify the habitat benefits of coordinated reservoir activities. Work will be coordinated with the Loveland and Grand Junction offices of Bureau of Reclamation, Denver Water, CWCB, and the State Engineer. Activities will include: representing the Service at coordinated reservoirs work group meetings, assisting in scheduling public meetings, reviewing press releases, representing the Recovery Program at public meetings, monitoring runoff, and participating in scheduling reservoir releases to enhance peaks.

The Service Hydrologist will work with the new Geomorphology technical work group, convened in the summer 2013 to investigate a new plan for testing the flow recommendation through sediment studies.

Task 4. USGS Gage Installation and Maintenance (See SOW #8)

The Service Hydrologist will continue to work with the U.S. Geological Survey, Bureau of Reclamation, and Colorado Division of Wildlife to contract payments for the Program gages.

Task 5. Hydrology Support for the Water Acquisition Committee and Water Right Acquisition

The Service Hydrologist Chair's the Water Acquisition Committee which oversees water concerns, water investigations, and possible water leasing opportunities. Water Right acquisition has become less important recently and optimization of existing facilities has become the focus of the Water Acquisition Committee. The tasks listed below support the expanded mission of the Water Acquisition Committee.

The USFWS will continue to attend the annual Aspinall operation meetings

Develops scopes of work for water studies and oversees contract administration, consultant supervision, and review of the consultant's work.

Coordinates flow releases from Elkhead Reservoir with the River District, the City of Craig and the Colorado Water Conservation District and holds a weekly call during summer months with interested parties.

The PD's office and Service Hydrologist will continue to support the Utah ES Field Office in their involvement with the Flaming Gorge Technical Work Group to coordinate flows for critical habitat for the Green River.

Prepare scopes of work and annual reports for projects in support of Water Acquisition Committee activities. Annual reports will be submitted to the Recovery Program Directors Office in November of each year.

Task 6. General Support Activities:

The Service Hydrologist will participate in technical discussions with the CWCB staff in an effort to clarify and quantify the Service's instream flows for endangered fish. The work will include attending meetings, reviewing reports, providing comments, and reporting back to the Service and the Water Acquisition Committee. This effort supports the flow filings outlined in the RIPRAP.

The Service Hydrologist will represent the Service and the Recovery Program as the "HUP managing Entities" which was set up to implement the Orchard Mesa Check settlement. Work includes attending annual kickoff and wrap-up meeting in Grand Junction and participation in weekly conference calls beginning early in July and ending when irrigation ends in November. Each week river flows must be tracked, flow targets coordinated with Service biologists and recommendations made on how best to release reservoir water secured by to Recovery Program to meet targets and provide benefits to endangered fish.

The Service Hydrologist will participate in updating the RIPRAP, developing Program Guidance and other activities in support of the Program Directors office.

Task 7. PIT Tag GIS database

Relationship to RIPRAP: General Recovery Action Plan, V.A.1., Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program.

Study Background/Rationale and Hypotheses: This proposal represents continued support in data management activities.

Study Goals: maintain and track Colorado River endangered fish distribution and survival. To provide one updated, user friendly GIS database for the endangered fish of the upper Colorado basin. The database compiles; age, location of captures, size data (etc.) for the endangered fish and some other native fish. Improve Colorado River Endangered Fish Recovery Program web use efficiency.

Schedule: Tasks will be completed between October 1, 2012 and October 1, 2013 and deliverer of CDs which contain the work product.

Cost FY 2014: \$ 670 annual update and maintenance
Cost FY 2015: \$ 690 annual update and maintenance
Cost FY 2016: \$690 annual update and maintenance
Cost FY 2017: \$732 annual update and maintenance
Cost FY 2018: \$754 annual update and maintenance

Upload up-to-date Colorado Pikeminnow, Humpback Chub and Bonytail capture data to the GIS. Set up procedures for the Grand Junction CRFP office to upload new capture data via web interface. Integrate river flow and water temperature data (both FWS and USGS) with capture date

Principal Investigator: Karen Holt

kholt@mtneye.com

PO Box 1626

Hood River, OR 97031

541.308.0550

509.999.0360

IX FY- 2014 Deliverables:

Given the diverse nature of the work involved, some deliverables are hard to specify. Annual progress presentations will be prepared for the Recovery Program and submitted to the WAC for consideration.

Deliverables that are direct products of the tasks outlined above include:

- A database of temperature data is assembled each year for each thermograph that is maintained by the Service Hydrologist. The data will be made available on the Recovery Programs River data Web Page under General and then Instream Flow Identification & Protection and on the FWS page: <http://www.r6.fws.gov/riverdata/>
- Each year a report is generated documenting releases from Green Mountain, Ruedi, Granby, Palisade Pipeline and Wolford Mountain reservoirs that describe release volumes to benefit the 15-mile reach for endangered fish habitat.
- A report will be prepared as necessary to document work on flow recommendations implementation. The Service Hydrologist will continue to coordinate the reviews by the Geomorphology Peer Review Panel, serve as Chairman of the Water Acquisition Committee, develop annual updates to the RIPRAP, coordinate scopes of work, develop meeting agendas, distribute meeting material, and conduct meetings.
- Hydrologic updates will be presented at the Management Committee.
- Scopes of work will be prepared for projects under the purview of the WAC

With the continued cuts in Federal budget which have affected travel, we have been reducing Federal Travel. The projection for travel for the principal Investigator (Jana Mohrman) has been reduced from 33 days in 2013 to 7 days in 2014 – 2018, or reduced to 24% of 2013.

	FY 2014			FY 2015			FY 2016			FY 2017			FY 2018		
Work/Costs:	Labor Rates														
Task 1. Temperature Data	Rate/Week	Weeks	Total												
Principal Investigator GS 13/6	\$2,749	4	\$10,996	\$2,827	4	\$11,310	\$2,827	4	\$11,310	\$2,906	4	\$11,623	\$2,906	4	\$11,623
Computer Analyst GS 13/10	\$3,063	2	\$6,126	\$3,063	2	\$6,126	\$3,063	2	\$6,126	\$3,063	2	\$6,126	\$3,063	2	\$6,126
Water Right Specialist GS 12/2	\$2,180	4	\$8,718	\$2,246	4	\$8,982	\$2,246	4	\$8,982	\$2,312	4	\$9,247	\$2,312	4	\$9,247
Equipment & 1 time software	Thermographs 10 @ \$131		\$1,230	Thermographs 10 @ \$131		\$1,250	Thermographs 10 @ \$131		\$1,270	Thermographs 10 @ \$131		\$1,290	Thermographs 10 @ \$131		\$1,310
Per diem + Hotel (days)	\$147	10	\$1,470	\$152	10	\$1,520	\$156	10	\$1,560	\$161	10	\$1,610	\$166	10	\$1,660
Thermograph Supplies (Cable, Clamps, Weights)		days	\$541		days	\$557		days	\$574		days	\$591		days	\$609
Grand Junction CRFP															
Project leader GS 14 (CSRS)	\$2,165	0.7	\$1,516	\$2,500	0.7	\$1,750	\$2,500	0.7	\$1,750	\$2,575	0.7	\$1,803	\$2,575	0.7	\$1,803
Administrative Officer GS 9	\$1,264	0.5	\$632	\$1,301	0.5	\$650	\$1,301	0.5	\$650	\$1,338	0.5	\$669	\$1,338	0.5	\$669
Fishery Biologist GS 12	\$1,529	0.4	\$612	\$1,529	0.4	\$612	\$1,574	0.4	\$630	\$1,574	0.4	\$630	\$1,619	0.4	\$648
Biological technician GS 6	\$912	4	\$3,647	\$942	4	\$3,768	\$973	4	\$3,891	\$1,003	4	\$4,012	\$1,003	4	\$4,012
Vehicle Mileage			\$342			\$354			\$364			\$374			\$384
Supplies			\$108			\$106			\$109			\$112			\$115
Replacement Thermographs	\$133	2	\$266	\$135	2	\$270	\$137	2	\$274	\$139	2	\$278	\$141	2	\$282
Task subtotal		\$7,122			\$7,510			\$7,668			\$7,878			\$7,912	
Task 2. BO Hydrology Support															
Principal Investigator GS 13/6	\$2,749	8	\$21,992	\$2,827	8	\$22,620	\$2,827	8	\$22,620	\$2,906	8	\$23,247	\$2,906	8	\$23,247
Bio conferences to update		Days													
Per diem + Hotel	\$147	2	\$295	\$152	2	\$303	\$156	2	\$313	\$161	2	\$322	\$166	2	\$332
Task 3. Other Hydrology Support															
Principal Investigator GS 13/65	\$2,749	7	\$2,756	\$2,827	7	\$2,834	\$2,827	7	\$2,834	\$2,906	7	\$2,913	\$2,906	7	\$2,913
Travel		Days													
Per diem + Hotel	\$147	2	\$295	\$152	2	\$304	\$156	2	\$313	\$161	2	\$322	\$166	2	\$332
TASK 4. Gages															
Principal Investigator GS 13/6	\$2,749	8	\$21,992	\$2,827	8	\$22,620	\$2,827	8	\$22,620	\$2,906	8	\$23,247	\$2,906	8	\$23,247
Travel		Days													
Per diem + Hotel	\$147	2	\$295	\$152	2	\$303	\$156	2	\$313	\$161	2	\$322	\$166	2	\$332
TASK 5. Water Acquisition Committee															
Principal Investigator GS 13/6	\$2,749	10	\$27,490	\$2,827	10	\$28,274	\$2,827	10	\$28,274	\$2,906	10	\$29,058	\$2,906	10	\$29,058
Utah Water Users, St George	1 trip		\$1,130	1 trip		\$1,167	1 trip		\$1,202	1 trip		\$1,238	1 trip		\$1,275
TASK 6. General Support															
Principal Investigator GS 13/6	\$2,749	12	\$32,988	\$2,827	12	\$33,929	\$2,827	12	\$33,929	\$2,906	12	\$34,870	\$2,906	12	\$34,870
Travel		Days													
Per diem + Hotel	\$147	2	\$295	\$152	2	\$303	\$156	2	\$313	\$161	2	\$322	\$166	2	\$332
TASK 7. PIT Tag GIS															
Principal investigator (Karen Holt)	\$22.30	per hr	\$670	\$23.00	per hr	\$690	\$23.65	per hr	\$710	\$24.40	per hr	\$732	\$25.15	per hr	\$754
Grand Total			\$146,401			\$150,603			\$150,930			\$154,957			\$155,178

Salary Overhead Assumptions

Grand Junction Pay Scale	
Project leader	GS 14/2 (CSRS = 25% overhead)
Administrative Officer	GS 9/5 (FERS = 40% overhead)
Fishery Biologist	GS 11/5 (FERS = 40% overhead)
Biological technician	GS 6/2 (FERS = 40% overhead)
FWS Regional Office with Denver offset	
Principal Investigator	(CSRS = 25% overhead)
Computer Analyst	GS 13/10 (FERS = 40% overhead)
Water Right Specialist	GS 12/3 (FERS = 40% overhead)

X. Budget Summary:

FY-2014	The Service Hydrologist CRFP Grand Junction TOTAL	\$ 139,279 \$7,122 \$ 146,401
FY-2015	The Service Hydrologist CRFP Grand Junction TOTAL	\$ 143,094 \$7,510 \$ 150,603
FY-2016	The Service Hydrologist CRFP Grand Junction TOTAL	\$ 143,262 \$7,668 \$ 150,930
FY-2017	The Service Hydrologist CRFP Grand Junction TOTAL	\$ 147,079 \$7,878 \$ 154,957
FY-2018	The Service Hydrologist CRFP Grand Junction TOTAL	\$ 147,265 \$7,912 \$ 155,178

XI. Reviewers: Tom Chart, Angela Kantola, Recovery Program Water Acquisition Committee