

I Project Title: Basin Wide Stream Gage Operation & Maintenance

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III. Project Summary:

The Recovery Program has implemented a number of programs to help reproduce a more natural hydrograph on the Green River below Flaming Gorge Dam to benefit endangered fish. The 1990 Flaming Gorge Biological Opinion and the recently released Flaming Gorge Synthesis Report both contain recommendations for matching the peak of the Yampa River with artificial peak flow from Flaming Gorge to create a more natural hydrograph for the Green River. One objective of the effort is to maintain active, complex channel characteristics and spawning bars, and to create conditions which clean fine-grained sediments from cobble substrates at spawning bars. To monitor these conditions 10 sensor pairs which are currently deployed on the Green River sites will need to repair or replaced. Replace equipment on loan from USGS and NPS. The sediment load sensors will be repaired or replaced in mid-summer when flows are low. Real-time monitoring equipment so that the function of the sensors can be monitored and sediment movement can be tracked. Mike Carpenter of USGS will develop a data template and a web page where the data from the sensor can be view on a near real-time basis. The sensor locations will be monitored during runoff with Sonar and acoustic-Doppler equipment to facilitate channel surveying which will be used as calibration checks of thickness of bed material above the sensors. This work will be coordinated with USGS Biological Research Division. Each site will be visited in the spring pre runoff and in July of each year to service equipment and download data. The load-cell sensor functions by weighing the sediment, water, and air above it; and an accompanying pore-pressure sensor weighs the water and air above it. The difference between the two weights is the weight of the sediment overlying the sensor pair. Combined sensitivity and repeatability are +/- 0.01 foot of sediment thickness or less.

- IV. Study Schedule: Initial Year - 2001, Final Year - 2003 ongoing is successful
- V. Relationship to RIPRAP: Green River Action Plan: Mainstem  
I.A.3.a Operate Reservoirs Pursuant to Biological Opinions
- VI. Accomplishments of FY 2001 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Because of Bureau/Recovery Program budget problems a contract was not worked out with USGS during FY 2001. After discussion with the WAC members and Program staff the project was moved to the 2002-2003 budget cycle. Work was able to commence in mid-October 2001 and all of the sensors at the Jensen razorback bar and Echo park were repaired or replaced. The new installation was accomplished by digging a trench out to each sensor location and installing flexible pipe. Wires for each sensors were pulled through the pipe and attached to new data logger units. This installation should make it easier to replace and repair in the future.

- VII. Recommendations: Working with USGS on this project has proven to be a challenge but now that the contract is in-place and the equipment has been installed the project should be completed on the new timetable.

VIII. FY-2001 Budget:	Reallocated to 2002
FY-2002 Budget:	\$38,000
FY-2003 Budget:	\$39,000

- IX. Status of Data Submission: Not applicable.

X. Signed: <u>George Smith</u>	<u>December 10, 2001</u>
Principal Investigator	Date