

COLORADO RIVER RECOVERY PROGRAM
FY 2008-2009 SCOPE OF WORK for:
Backwater Topography in the Middle Green River

Project Number: _____

Lead agency: Argonne National Laboratory
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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: Backwater Topography in the Middle Green River
- II. Relationship to RIPRAP: ID1e: Green River Action Plan-Mainstem, Evaluate effect of base flow variability on backwater maintenance and quality
- III. Study Background/Rationale and Hypotheses: In-channel backwaters serve as important nursery areas for Colorado pikeminnow (*Ptychocheilus lucius*). The effect of flow variability on backwater habitat characteristics was identified as an important uncertainty in the flow recommendations for the Green River downstream of Flaming Gorge Dam (Muth et al. 2000). In addition, understanding this relationship was identified as a research priority in LaGory et al. (2003) and studies to address this relationship were identified in the Green River study plan (Valdez et al. 2007). Since 2003, Western has funded Argonne to collect data on backwater topography in the middle Green River to quantify the relationship between flow stage and backwater physical characteristics.
- IV. Study Goals, Objectives, End Product(s): Funding would be used for data synthesis and analysis. Data analyses would be incorporated into a final report funded by Western and presented to the Recovery Program.
- V. Study Area: Middle Green River between the Ouray fish hatchery intake and Sheppard Bottom.
- VI. Study Methods/Approach: We will analyze and synthesize data collected annually since 2003. The relationship between backwater characteristics and stage is extremely complex and non-linear. We have completed data processing and with the proposed project would perform final analyses to determine habitat availability under specific base flow conditions. Statistical analyses would focus on estimates of within- and between-backwater variance under a range of anticipated flow conditions.
- VII. Task Description and Schedule: Data analysis and synthesis will be completed by May 2008.

VIII. Deliverables, Due Dates, and Budget by Fiscal Year: Data analysis and synthesis results will be provided in graphical and tabular form to the Recovery Program. The results will be incorporated into a report prepared with funding provided by Western. It is anticipated that the report would be available in June 2008.

FY 2008

Deliverables: All deliverables will be provided in FY 2008.

Budget:

Labor

Task	Rate	Hours	Total
GIS analysis	\$115/hr	40	\$4,600
Statistical analysis	\$125/hr	40	\$5,000
Project oversight	\$183/hr	8	\$1,464
Total	--	88	\$11,064

Travel: none

Equipment: none

Other: none

IX. Budget Summary: See Item VIII

X. Reviewers: *[For new projects or ongoing-revised projects, list name, affiliation, phone, and address of people who have reviewed this proposal.]*

XI. References:

LaGory, K.E., J.W. Hayse, and D. Tomasko. 2003. *Recommended Priorities for Geomorphology Research in Endangered Fish Habitats of the Upper Colorado River Basin*, Final Report, Upper Colorado River Endangered Fish Recovery Program, Project 134, Environmental Assessment Division, Argonne National Laboratory.

Muth, R.T., L.W. Crist, K.E. LaGory, J.W. Hayse, K.R. Bestgen, J.K. Lyons, T.P. Ryan, and R.A. Valdez. 2000. *Flow Recommendations for Endangered Fishes in the Green River Downstream of Flaming Gorge Dam*, Final Report, Upper Colorado River Endangered Fish Recovery Program Project FG-53.

Valdez, R.A., T. Chart, G. Burton, D. Irving, K. LaGory, R. Muth, H. Patno, and D. Speas. 2007. *Study Plan for the Implementation and Evaluation of Flow and Temperature Recommendations for Endangered Fishes in the Green River Downstream of Flaming Gorge Dam*. Final Report, Upper Colorado River Endangered Fish Recovery Program.