

## **Economic Values of Angling in Glen Canyon National Recreation Area and Rafting in Grand Canyon National Park**

For purposes of resource management decisions, evaluation of economic values of resources is an essential element. From an economic viewpoint, some of the uses of Colorado River water have observable market transactions – for example, prices wholesalers and consumers pay for electricity. This is not the case, however, for resources such as recreation. However, knowledge of the economic value of rafting and angling, including an understanding of the attributes that make these resources valuable, improve decision making processes when identifying economic tradeoffs involved in resource management decisions.

Completion of an important direct-use (recreation) economic study took place in 1987 (Bishop et al. 1987). However, this study is more than twenty-five years old, and the GCDAMP has not continued to monitor or measure the effects of changing conditions, alternative flow regimes and experiments on these important economic values. The SEAHG Group identified socioeconomic recreation information needs, including Glen Canyon angling and Grand Canyon rafting, as one of its information priorities.

The NPS has developed Glen Canyon angling and Grand Canyon rafting survey instruments and implementation procedures for the LTEMP EIS, but the effort was discontinued. GCMRC is proposing to lead the effort of survey implementation in 2014 and into the 2015/16 budget cycle. The surveys would replicate the work of Bishop et al. (1987), updating methodological approaches and collecting expenditure data and information about the preferences of anglers and river rafters.

Bishop, R.C., K.J. Boyle, M.P. Welsh, R.M. Baumgartner, and P.C. Rathbun. 1987. *Glen Canyon Dam Releases and Downstream Recreation: An Analysis of User Preferences and Economic Values*. Glen Canyon Environmental Studies Report No. 27/87. Springfield, VA: National Technical Information Service (PB88-183546/AS).

## **Structured Decision Analysis**

For purposes of resource management decisions, evaluation of the economic values of resources is an essential element. However, in adaptive management programs the economic value of management actions and of gathering information is uncertain. It is this uncertainty that makes a standard economic analysis, or benefit-cost analysis, difficult.

In an adaptive management program, economic analysis should include uncertainty. Uncertainty has historically been included in structured decision analysis (SDA) processes, but objectives have been based on stakeholder management goals or other non-economic metrics. By including economic values into the analysis, the objective (max expected net benefits) is predetermined and all outcomes are evaluated with a common metric. This reduces the need for repeated stakeholder input and standardizes the unit of measure across resource categories.

In any adaptive management program, a SDA that includes economic values provides insight into expected economic value of possible management actions and of gathering additional information through experimentation. The value of gathering information can then be evaluated against the “costs” of obtaining it and the entire analysis can be updated as additional knowledge of the system is obtained.

The goal of economic analysis in an adaptive management process is to identify all implementable management actions, expected outcomes, and the resulting expected net benefits of those outcomes. This process provides insight into the value of experimentation and provides decision makers with a broad range of information when evaluating resource management decision in an adaptive management program.



# Economics Research at GCMRC: FY 2014

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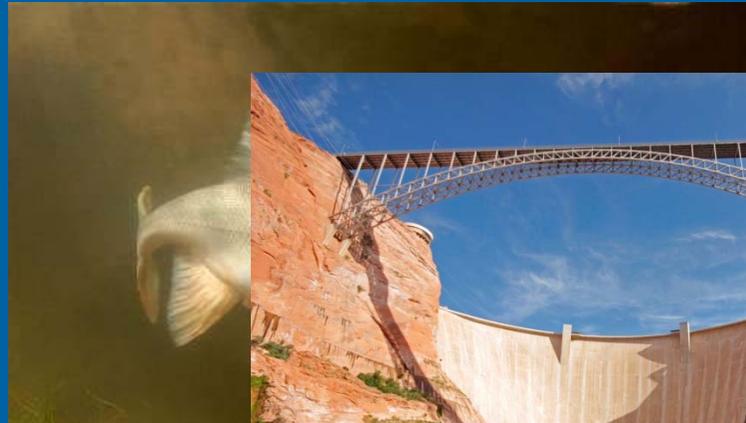
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U.S. Department of the Interior  
U.S. Geological Survey

# Resources of Economic Value Below Glen Canyon Dam

- Ecosystem
  - Native fish
  - Riparian habitat
- Hydropower
- Recreation
  - Angling
  - Rafting
- Cultural



<http://gallery.us>



# The Economics of Recreation Below Glen Canyon Dam: Background

- Bishop et al. (1987), first extensive economics study of recreation below GCD
  - Glen Canyon angling and day-use rafting
  - Grand Canyon whitewater boating
- NPS initiated research to replicate and expand on the work of Bishop et al. (1987)
- The NPS effort, as part of updating economic values for the LTEP EIS, was discontinued

# The Economics of Recreation Below Glen Canyon Dam: Background

- SEAHG identified the economic value of recreation as a key information need
- GCMRC is proposing to lead specific recreation economics research with the FY 2014 budget
  - Glen Canyon angling and Grand Canyon whitewater boating surveys
    - Draft surveys and OMB package complete
  - GCMRC lead implementation of surveys, analysis, and reporting

# The Economics of Recreation Below Glen Canyon Dam: Proposal

- Glen Canyon angling and Grand Canyon rafting surveys
  - Identifying attributes of importance
  - Regional expenditure data
  - Economic value of the trip
  - Economic value of trip quality (e.g., flows)
- Two year estimated timeline from initial implementation of research
- Budget of \$240K to complete surveys, analysis, and reports

**Questions?**