

Glen Canyon Dam Adaptive Management Work Group
Agenda Item Information
May 18, 2011

Agenda Item

Technical Work Group Chair Report

Action Requested

This is an information item.

Presenter

Shane Capron, Technical Work Group Chair, Western Area Power Administration
Helen Fairley, Cultural Program Chief, Grand Canyon Monitoring and Research Center

Previous Action Taken

N/A

Relevant Science

N/A

Background Information

Socioeconomics Ad Hoc Group (Helen Fairley)

During the fall and winter of 2010, the TWG Socioeconomic Ad Hoc Group (SEAHG) developed a five-year socioeconomic “implementation plan” based on recommendations resulting from the December 2009 socioeconomics workshop and additional input from TWG members. Since then, the National Park Service (NPS) has come forward with the outline of a multi-year socioeconomic study plan they are proposing to initiate this year. The NPS study will conduct a comprehensive evaluation of the economic costs and benefits of visitation in the Colorado River system national parks, including Glen Canyon NRA, Lake Mead NRA, and Grand Canyon National Park. This study will also estimate the passive use values held by the American public for these resources.

Elements of the NPS plan overlap with, and to some degree, duplicate some of the studies identified in the SEAHG’s 5-year implementation plan. The NPS has indicated a willingness to collaborate with the GCDAMP to avoid duplicative efforts and is willing to collect data in a manner that will be useful to the GCDAMP, while also meeting NPS’ specific socioeconomic information needs and interests. The NPS is also willing to work with the GCDAMP to collect data specifically relevant to AMP interests (e.g., economic expenditure and benefit data from angler use in the Lees Ferry to Badger Creek reach) in exchange for the AMP providing data that will be useful to the NPS studies (e.g., hydropower cost/benefit analyses). In light of these recent developments, and to avoid duplication of effort, reduce program costs, and ensure maximum benefit to all parties, the SEAHG five-year implementation plan is being re-scoped by GCMRC.

This five-minute presentation will update AMWG on progress made to date towards revising the five-year plan and developing specific work plans for FY2011 and 2012 to meet previously defined

objectives. **GCMRC is seeking AMWG confirmation that the new collaborative approach is supported by the AMWG.** GCMRC is also requesting that AMWG **direct their TWG members to provide feedback to GCMRC** about these various economic study plans (specifically, the GCDAMP five-year plan and the NPS non-use value study) by the next TWG meeting, or sooner if possible.

Core Monitoring Plan (Shane Capron)

On December 1, 2009, GCMRC and TWG co-hosted a workshop on the development of a general Core Monitoring Plan (GCMP) for the GCDAMP. The purpose of the meeting was to:

- Achieve understanding of the GCMRC proposed general strategy for long-term core monitoring (measuring trends in “signals” for resources of critical interest to GCDAMP).
- Enhance support for the general Core Monitoring Plan (including timelines, budget, and staffing requirements) and completion of remaining steps for all resource areas.
- Reach a tentative agreement on timeframe and steps for TWG to develop a recommendation to AMWG.

This agenda item is a report to AMWG on the work that has been done to implement the results of that workshop. The workshop report was provided to AMWG in February 2010; please see that Agenda Item Form (http://www.usbr.gov/uc/rm/amp/amwg/mtgs/10feb03/Attach_15a.pdf) for background information and history on the CMP development process.

An ad hoc group of the TWG led by the TWG Chair was formed to work with GCMRC to revise the GCMP and help integrate the TWG concerns. The primary goals were to help revise Section 2 of the document, which describes the process of developing the individual core monitoring plans by AMP goal. A number of revisions to the main portion of the document have been completed. The primary change that has been made to the document is the addition of an appendix written by TWG that describes the TWG role in the development of the individual core monitoring plans (by AMP Goal). The appendix describes the management portion of the project, decision-making, and expectations from the TWG for what will be in each individual plan. The Appendix calls for each individual plan to include a trade-off analysis or risk assessment that will include a high, medium, and low funding scenario and describe the trade-offs between each of these. This will allow TWG to consider different levels of implementation. The decision-making will incorporate a Structured Decision-Making (SDM) process to develop a series of criteria for TWG to use when making decisions about the level of implementation for each program. The TWG Chair requested and received an initial review on the appendix by the Science Advisors (November 5, 2010).

At the TWG meeting in March, the TWG Chair and facilitator Mary Orton designed and managed a one-day Consensus Building Workshop. That workshop used an SDM approach to help TWG develop its evaluation criteria it will use when considering individual core monitoring plans. The TWG ad hoc group will incorporate the results of this workshop into a revision of Appendix B for the General Core Monitoring Plan and the full TWG will consider these changes at its June meeting.

At the AMWG meeting, the TWG Chair will update the AMWG on the results of the March workshop, describe the process used to achieve those results, and outline next steps. The results of the workshop were nine evaluation criteria (see below) with a series of specific issues to be considered for each criterion. As described, the next step is for the ad hoc group to consider these results, integrate them into Appendix B, and seek approval by the TWG in June.

COMPLIANCE WITH LAW AND POLICY

Compliance (Fed/state/tribal)
Compliance – ESA, NHPA, Law of River, EO13007
Consistency with park values and no impairment
Degree of linkage to dam operations
Related to GC Dam Operations
Meets mandates of GCPA
Comply with laws and regulations
Meets compliance needs (LOR, NEPA, etc.)
Meets legal goals/objectives
Related to “dam operations and other actions” (GCPA)

DATA QUALITY

Geospatially and temporarily related datasets
Objectivity and replication of methods, measurements, and assessment
Appropriate scientific methods (controls, sample, study design)
Use of best science/technology/TEK
Data provide a measure of confidence/reliability
Result in measurable outcomes
Adequacy of existing knowledge
Robust metric for determining effects

UTILITY OF DATA

Data are useful and timely
Timeliness of information
Risk analysis ... does it contribute?
Ability to detect threats (contingency/risk assessment)
Flexibility in periodicity of monitoring
Relevance of measured indicators to dam operations
Dual role of data and use in model generation
Relevance to rigorous, defensible predictive model
Adaptable/flexibility of timing and frequency
Continuation of Legacy Data sets
Ability to detect trends
Continues long-term dataset
Metrics and indicators appropriate to CMINs

MINIMIZE ADVERSE IMPACTS

Impact to visitor experience
Geographic and demographic extent of effects
Potential impact on resource being monitored
Minimal impacts to CRE
Impacts to Tribal Trust resources
Considers negative impacts on other resources

INTEGRATION OF CULTURAL AND SOCIAL VALUES

Considers environmental and cultural values
Zuni is happy

- Considers economic values
- Sensitive to tribal concerns?
- Stakeholder interest (i.e., AMG, TWG, public)
- Satisfies tribal and public trust responsibilities
- Considers social values
- Tribal monitoring results can be meaningfully integrated
- Culturally relevant and sensitive to cultural concerns

ADDRESSES GOALS AND PRIORITIES

- Meets hierarchy of priorities
- Does it relate to AMP goal?
- AMP strategic plan
- Meets program priorities
- AMWG /Secretary of the Interior priorities
- Does it lead to DFC?
- Addresses AMP goals 1-12
- Contribute to management actions/decisions
- Is there a defined goal?
- Meets SOTI goals
- Appropriate to resource goals and CMINs
- Are data linked to ends/objectives?
- DOI priorities vs. AMWG priorities

INFORMATION MANAGEMENT

- Adequacy of information management

ECOSYSTEM APPROACH

- Is it directed to keystone resources?
- Prioritized by trophic structure
- Tie-in to ecosystem model
- Integration into big picture
- Provides for multiple needs

COST EFFECTIVENESS AND AFFORDABILITY

- Good benefit/cost
- Cost can be accommodated by program
- Affordability and budget implications (cost)
- Integration with other monitoring programs
- No duplication of effort
- Cost/Benefit
- Collaborative funding sources



Progress Report on Implementing Socioeconomics Plan FY2011-12

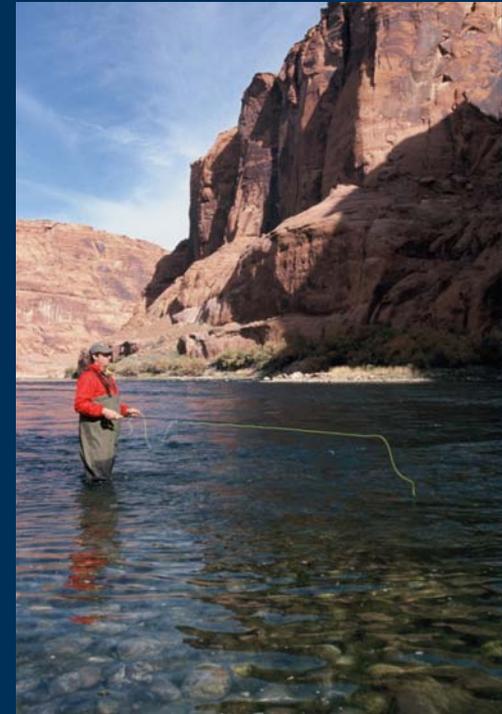
Helen Fairley, GCMRC Sociocultural Program Manager
Presentation to the Adaptive Management Work Group
Phoenix, AZ
May 18, 2011

Brief Review

- 2010 - TWG Socioeconomics Ad Hoc Group (SEAGH) developed 5-year socioeconomic (SE) study plan to compile economic data (both cost/expenditure and benefits data) for recreation and hydropower
- January 2011: NPS offers to coordinate with GCD AMP on NPS-funded Colorado River recreation use and non-use studies to avoid duplication of effort, reduce program costs to AMP
- February, 2011: AMWG informed of NPS offer; guidance sought from AMWG on how to proceed
- March-May 2011: GCMRC works with lead NPS economist to identify areas of overlap, common interests, critical gaps

Areas of Overlap between AMP Socioeconomics Plan and NPS plan

- There is extensive but not complete overlap with:
 - market and nonmarket recreation use studies (except for day-use rafters, waders, and Diamond to Mead white water)
 - power modeling studies
 - non use value study
- There is NO overlap with:
 - Program level staffing needs
 - Proposed workshops
 - Definition of base case/change cases
 - Tribal preference and value surveys



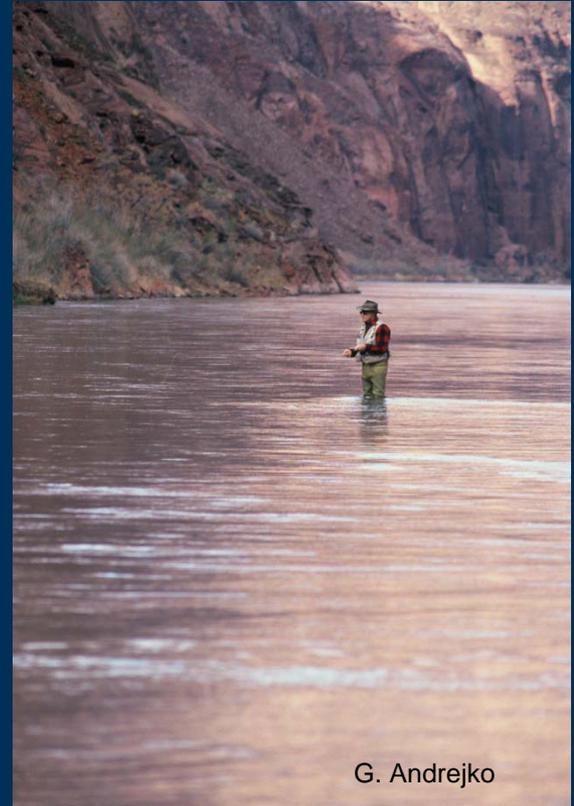
NPS Use and Non Use Study Plan

- Focus on valuing park resources tied to river and reservoirs & associated recreational uses (Lakes Powell and Mead, Lees Ferry anglers, Grand Canyon boaters)
- Direct expenditure & contingent values of recreational uses relative to flows & reservoir levels will be collected
- Non-use to be valued relative to resource conditions
- Study is funded; NPS ready to move forward with OMB reviews of recreational use survey plan now, non-use survey later summer
- NPS open to timely input/feedback from AMP on survey instruments



GCMRC Socioeconomic Activities – Accomplishments & Near Term Plan

- Socioeconomics 101 training workshop completed March 7, 2011
- GCMRC currently working with NPS contractor to expand scope of LF angler survey in FY2011-2012
- GCMRC, NPS and WAPA plan to meet in June to discuss mutual hydropower modeling & analysis needs; clarify scope of non use study relative to hydropower
- Still need to schedule GT Max review; must work around KA workshops

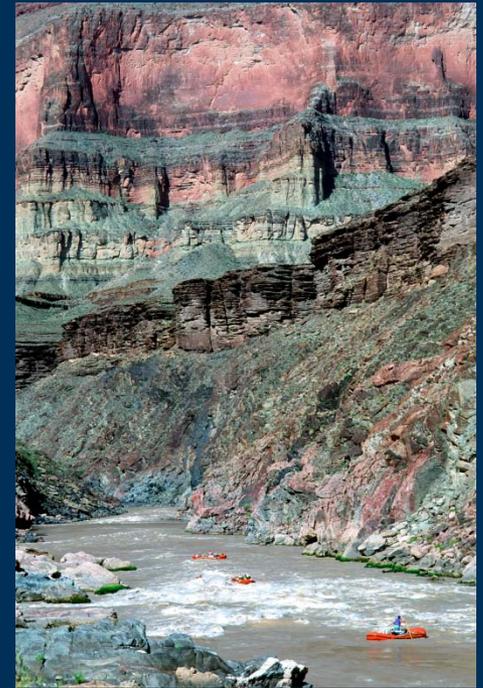


Unresolved FY2011 Issues

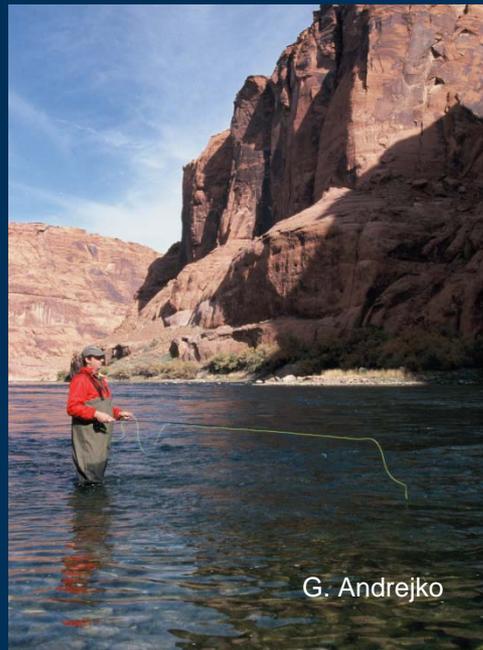
- Base Case & Change Case: Who decides base and change case definitions, scope, priorities for analysis?
- Staffing: GCMRC needs but has not acquired expertise to support SE work in FY11 (needs *independent* funding)
- TWG Support: TWG has limited economics expertise; need to clarify appropriate TWG role re: refinement of SE info needs, study scopes, LTEMP interface, etc.
- Workshops: Dates for GT Max model review not yet set (potential overlap with multiple KA II workshops); also, we may need to accelerate non use value workshop

Information Needs

- Who defines base case and change cases to be analyzed in FY2011-2012? When and how will this occur?
- To what degree should AMP SE studies be framed in relation to LTEMP info needs, and how and when would this occur?
- NPS is requesting feedback on the market (expenditure) and non-market recreational use survey instrument by June 17, 2011 – Will input be provided and if so, how?
- It may be beneficial to reschedule the non-use workshop to summer FY2011 (instead of FY2012) so that TWG can provide meaningful input on NPS non-use survey instrument.



THE END



NPS Recreation Use Studies

- Covers 3 groups/4 areas relevant to GCD AMP:
 - Lake Powell and Lake Mead reservoirs
 - Lees Ferry anglers (boat-supported fly fishermen above LF only)
 - Grand Canyon boaters (LF to DC only - not day use rafters or raft trips starting below DC)
- LF angler and Grand Canyon white water boater surveys replicates work of Bishop and others (1987)
- Will collect direct expenditure data from visitors
- Contingent valuation for different flows, lake levels
- Study is fully funded; NPS is ready to move forward with OMB review now
- NPS open to timely input/feedback from AMP on survey instrument (by COB June 17, 2011)

NPS Non-Use Study

- Will be similar to work of Welsh and others (1995) but focus will be on evaluating resource conditions, not impacts/benefits of specific flows
- Focus is on valuing park resources tied to river and reservoirs; study will not cover non use values for “green energy”
- NPS is finalizing survey instrument now; will be seeking OMB approval later this summer
- NPS open to seeking timely feed back on survey instrument by mid summer (dates?)

Still Unresolved: Base Case and Change Case Definitions & Applications

- Base case provides foundation against which economic implications of past or future alternative flows can be compared
- Base case must reflect an agreed upon “standard” operation:
 - Is MLFF the agreed upon base case?
 - Is there a single appropriate standard MLFF operation or does there need to be more than one? (e.g., high, medium, low flows)
- Question for AMWG and/or TWG (?):
 - Will base case and change case analyses be used to inform LTEMP and if so, what is TWG role in determining base case and change cases (alternative operations) to evaluate in FY2012?

We need clear definition of program roles and processes for this work to move forward!

General Core Monitoring Plan TWG Chair Report



By Shane Capron
Chair, Technical Work Group

2009 WORKSHOP RESULTS

Dot-Ranking

1. Describe **criteria for evaluation.**
2. Need **DFCs.**
3. A **risk assessment** for critical choices, trade-off analysis
4. Should **avoid the “Christmas tree” approach**, in 40-60% range of the science budget.
5. The strategy discussion needs to be a greater focus of the document describing the **two strategies (science and management).**
5. More integration of **tribal monitoring** in each CMP/goal.

MARCH TWG WORKSHOP OBEJECTIVES

**Develop general criteria to use to
evaluate individual core monitoring
plans**

**Utilize decision support methods,
SDM**

TWG APPENDIX B: SDM

Step 1: Clarify the Decision Context (CMP: scope, roles)

Step 2: Define Objectives and Evaluation Criteria (Appendix B, the core of SDM is a set of well defined objectives and evaluation criteria)

Step 3: Develop Alternatives (App. B: High, Medium, Low)

>> Workshop to define specifics for each plan, refine criteria

Step 4: Estimate Consequences (individual plans, performance)

Step 5: Evaluate Trade-Offs and Select

>> Workshop to establish preference assessment (e.g. swing weighting)

Step 6: Implement and Monitor (CMP)

S D M



TWG APPENDIX B:

Alternatives – Scope and Cost

- **“High”** – would implement the CMINs for that goal to the extent practicable and represent as close to full implementation as can be obtained with current resources, and is based on current implementation strategy by GCMRC.
- **“Medium”** – would implement modest reductions in spending (about 10-30%) to implement the higher priority CMINs.
- **“Low”** – would implement substantial reductions in spending (about 40-50%) to implement only the highest priority CMINs.

S D M



TWGW APPENDIX B: The Objectives

Define a long-term management program which satisfies the needs identified in the CMINs. For each individual plan, the objectives are the CMINs themselves.

GOAL or CMIN	Revised CMIN Wording	SPG Prioritization
GOAL 2 Rank 1	Maintain or attain viable populations of existing native fish, remove jeopardy from humpback chub and razorback sucker, and prevent adverse modification to their critical habitat.	
CMIN 2.1.2	Determine and track recruitment (identify life stage), abundance and distribution of humpback chub in the mainstem.	Priority 1
CMIN 2.3.1	Determine and track the parasite loads on humpback chub and other native fish found in the LCR and in the Colorado River ecosystem.	Priority 2
CMIN 2.4.1	Determine and track the abundance and distribution of non-native predatory fish species in the Colorado River.	Priority 3
CMIN 2.6.1	Determine and track the abundance and distribution of flannelmouth sucker, bluehead sucker, and speckled dace populations in the Colorado River ecosystem.	Priority 4

Goal 2 Objectives

S D M



TWG APPENDIX B: Evaluation criteria

The core of SDM is a set of well defined objectives and evaluation criteria. Together they define "what matters" about the decision and become the framework for comparing alternatives.

TWG APPENDIX B: Evaluation criteria

It isn't easy to define good evaluation criteria that are widely agreed upon by stakeholders, experts and decision makers. However, the up-front investment pays off in streamlined decision making, for two principal reasons:

- because data, modeling and expert judgment processes are focused on producing decision-relevant information;
- because large numbers of very complex options can be consistently and efficiently evaluated by multiple decision makers.

TWG APPENDIX B: Evaluation criteria

"What specific metric could we use to report the impact of these alternatives (High, Medium, Low) on this objective?(CMIN)"

Or

"What specific information would you like to see to be able to evaluate the impact of these alternatives on this objective?"

THE MARCH TWG WORKSHOP

Minimize
adverse
impacts

Impact to
visitor
experience

Potential impact
~~on~~ resource being
monitored

Impacts to
Tribal Trust
Resources

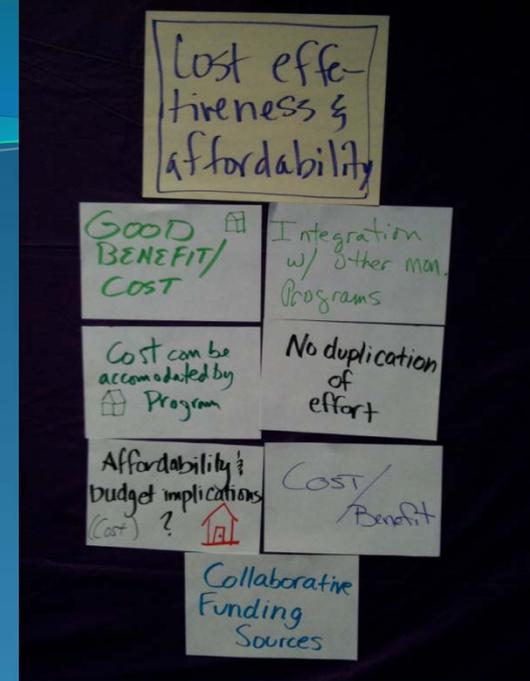
Geographic
& Demographic
extent of effects

MINIMAL
IMPACTS
TO CRE

CONSIDERS
NEGATIVE
IMPACTS ON
OTHER RESOURCE

WORKSHOP RESULTS

- COMPLIANCE WITH LAW AND POLICY
- DATA QUALITY
- UTILITY OF DATA
- MINIMIZE ADVERSE IMPACTS
- INTEGRATION OF CULTURAL AND SOCIAL VALUES
- ADDRESSES GOALS AND PRIORITIES
- INFORMATION MANAGEMENT
- ECOSYSTEM APPROACH
- COST EFFECTIVENESS AND AFFORDABILITY



NEXT STEPS

1. Final revisions to TWG Appendix B, integrate SA comments and workshop results. TWG review in June.
2. Work with next GCMRC Chief to finalize GCMP with Appendix B – Fall?
3. AMWG consideration in Fall/Winter?

Discussion

