

# Glen Canyon Dam Adaptive Management Program Science Advisors-Executive Coordinator Program Work Plan for FY 2016

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*David P. Braun, Ph.D., and Robert S. Unnasch, Ph.D.  
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## **Introduction**

The Bureau of Reclamation (Reclamation) arranges for Sound Science LLC to carry out the responsibilities of the Glen Canyon Dam Adaptive Management Program (GCD AMP) Science Advisor (SA) Executive Coordinator (EC) program through contractual Task Orders for specific tasks. Task Order #1 had two deliverables: (1) an annual report on SA program activities in FY 2015; and (2) a SA-EC program work plan for FY 2016 for Reclamation review and approval. Sound Science submitted both deliverables on November 17, 2015. Reclamation subsequently determined that it needed to consult with the rest of the leadership of the GCD AMP to confirm the proposed work plan for FY 2016. While this consultation took place, Reclamation requested that Sound Science prepare an initial work plan and budget covering activities in December 2015 through February 2016 to ensure that the SA-EC could attend the January TWG meeting and February AMWG meeting. The resulting Task Order #2 allows Sound Science to maintain its momentum on the activities needed for FY 2016. A separate Task Order, #3, covers Sound Science assistance to the GCMRC to organize and carry out the Fisheries Protocol Evaluation Panel in FY 2016. Task Order #4 covers the SA-EC program of work for March 1 through September 30, 2016.

The present document integrates the plans from Task Orders #2-#4 in one place, to provide a single statement of the SA-EC plan of work for FY 2016.

## **Background**

Sound Science has reviewed past SA-EC annual work plans and program procedures to ensure program continuity. From this review, Sound Science has determined that SA-EC annual work plans typically accomplish four things, within the limits of funding: (1) address “Open” Action Items requested by the AMWG and its TWG in previous fiscal years; (2) address additional needs identified by TWG and AMWG members and the Grand Canyon Monitoring and Research Center (GCMRC) for independent science reviews based on a prioritization of such requests; (3) address additional needs for independent science reviews recommended by the EC, subject to prioritization and approval; and (4) establish guidelines for preparing the work plan for the next subsequent fiscal year.

However, Sound Science has determined that the FY 2016 annual SA-EC work plan must depart from this typical situation, for two reasons. First, FY 2016 is already underway with no SA-EC annual work plan in place. In fact, the SA-EC program has been inactive since late in FY 2014, without preparation of a work plan for either FY 2015 or FY 2016. Such preparation ordinarily requires consultation with the AMWG, TWG, and GCMRC; approval by the contracting agency

(formerly GCMRC, now Reclamation); and a recommendation for approval from the AMWG to the Secretary of the Interior. Further, the process for AMWG review and recommendation must be timed to allow for AMWG review no later than its last meeting of the current fiscal year. Additionally, AMWG review requires prior SA-EC consultation with the TWG. Given these constraints, the SA-EC in FY 2016 must have an annual work plan in place for the current FY no later than the end of December 2015. This schedule is necessary, to allow enough time for the SA-EC to prepare and obtain approval of the work plan for FY 2017 before the end of September 2016. This timeline provides no room for the normal extended SA-EC consultation with the TWG or AMWG review of the SA-EC work plan for the present FY. In the absence of such consultation and review, however, the SA-EC should not undertake any new initiatives for the remainder of FY 2016 that would require close prior consultation with the TWG and AMWG.

Second, Sound Science has determined through its review of SA-EC and GCD AMP archives that the roles and procedures of the SA-EC program evolved over the years since the program began in 2001. While many aspects of the GCD AMP also have evolved over this time, the evolution of the SA-EC program in particular does not appear to have been entirely explicitly planned, officially recognized, or formally documented and approved by the AMWG and the Secretary. The SA-EC program therefore faces some uncertainty concerning its responsibilities and the procedures it needs to follow to carry out these responsibilities, including the process for prioritizing its potential for each FY. The survey of AMWG members by Mary Orton, AMWG Facilitator, has also revealed widespread uncertainty over the intended purposes and responsibilities of the SA program overall.

Given this situation, Sound Science proposes that the SA-EC work plan for the remainder of FY 2016 focus simply on ‘rebooting’ the SA program rather than undertake any new initiatives for which *prior* TWG consultation and AMWG approval would be crucial. Specifically, the SA-EC work plan for the remainder of FY 2016 will focus on: (1) reviewing the mission of the SA-EC program, its operating procedures, and its functional relationships with the GCMRC and the TWG and proposing recommendations to Reclamation and the AMWG for their review; and (2) reviewing GCD AMP archives and engaging with the AMWG to identify both short-term priorities for FY 2017 and long-term needs and expectations for the SA-EC program.

The SA-EC will also assist the GCMRC in implementing the activity identified as Project 8.3 in the GCD AMP Triennial Budget and Work Plan for Fiscal Years 2015-2017: “Fisheries Research, Monitoring, and Management Actions Protocol Evaluation Panel.”

## **Objective 1: Review Science Advisor Program Responsibilities and Protocols**

The GCD AMP and its science program are subject to a very high level of public scrutiny, beginning with the AMWG, its TWG, and the GCMRC. Reviewing, and reaffirming or updating SA-EC responsibilities and protocols will contribute to the transparency of the GCD AMP and ensure a continued sharp focus for the SA-EC program in support of the GCD AMP. The administrative transfer of the SA program from the GCMRC to Reclamation, the departure of Dr. Garrett from the EC office and the arrival of Sound Science, the hiatus in the SA program during most of FY 2015, and changes to the SA program associated with the transfer of the program to

Reclamation provide both a need and an opportunity to review SA program roles and protocols to explicitly reaffirm or update them as needed.

Under Objective 1, the SA-EC will:

- (a) Complete efforts begun by the EC during implementation of Task Order #1 to identify and verify the core responsibilities and protocols of the SA-EC program as authorized in past decisions of the AMWG and Secretary;
- (b) Complete efforts begun by the EC during implementation of Task Order #1 to identify and verify ways in which SA-EC activities may have evolved, with or without official recognition;
- (c) Identify current expectations for and concerns about the SA-EC program roles in relationship to the AMWG, TWG, and GCMRC;
- (d) Identify the types of roles and responsibilities of “science advisor” panels that operate in support of other federal and joint state-federal large-river adaptive management programs around the U.S., to identify options for clarifying the roles and responsibilities of the SA program within the GCD AMP;
- (e) Identify ways in which formal SA-EC program operations will differ as a result of the transfer of administration to Reclamation, including the associated changeover from maintaining a single standing panel of Science Advisors to enlisting external advisors only as needed to address individual topics; and
- (f) Work with the TWG to develop recommendations for an updated charter and set of protocols for the SA-EC program for review by Reclamation and the AMWG, which in turn will transmit their recommendations to the Secretary for approval.

The specific elements of Objective #1 will be as follows:

*1. Review Science Advisor Program Responsibilities and Protocols*

- 1.1. Complete review of GCD AMP archives concerning SA-EC program responsibilities and protocols, begun under Task Order #1.
- 1.2. Consult with members of the AMWG and TWG and with the AMWG Facilitator (Mary Orton) on AMWG expectations for the relaunched SA-EC program. This element will involve the following:
- 1.3. Review and document the roles, responsibilities, and procedures of a representative sample of “science advisor” panels that operate in support of other federal and joint state-federal large-river adaptive management programs around the U.S., to identify options for clarifying the roles and responsibilities of the SA program within the GCD AMP.
- 1.4. Document the ways in which the responsibilities and protocols and expectations for the SA-EC program have evolved, distinguishing changes explicitly recognized and formally approved from other changes.
- 1.5. In consultation with the TWG, prepare recommendations for an updated charter for the SA-EC program. The format of the charter will follow that of the AMWG and TWG Operating Procedures documents. The recommendations will address the following: (1) SA program roles and responsibilities within the GCD AMP, including its relationships to the AMWG, TWG, GCMRC, Reclamation, and the purposes of the GCD AMP overall. (2) EC responsibilities within the SA program. (3) SA and EC operating procedures, including procedures for: (a) annual reporting and development of the

annual work plan; (b) identifying and prioritizing topics for potential independent external review; (c) recruiting and obtaining approval for external Science Advisors to participate in independent external reviews; (d) managing and generating reports and recommendations from independent external reviews; and (e) consulting with the AMWG, TWG, GCMRC, and Reclamation throughout these efforts. (4) The responsibilities, criteria for selection, standards of conduct, and rules for cost reimbursement for external Science Advisors recruited to topical panels. (5) Criteria for SA-EC attendance at AMWG and TWG meetings and for meeting with the GCMRC and Reclamation; and protocols for Reclamation approval of attendance or participation by phone or no participation.

- 1.6. Following review of the recommendations (from element 1.5, above) by Reclamation and the TWG, revise the recommendations for an updated charter for the SA-EC program and have them presented for AMWG review. This element will involve the following:

## **Objective 2: Review Science Advisor Program Thematic Concerns**

The circumstances described in the Background section above suggest a need for the SA-EC to review the past concerns and recommendations of the Science Advisors that bear on the current Triennial Budget and Work Plan; and a need for the SA-EC to consult with the AMWG, GCMRC, and TWG on possible thematic emphases for the SA-EC program going forward. The review of past concerns and recommendations will provide a timely opportunity to: (a) identify major themes in these concerns and recommendations; (b) identify those concerns and recommendations that have been resolved or become obsolete; and (c) identify concerns that remain unresolved and possible reasons for this. Consultation with the AMWG, TWG, and GCMRC on thematic emphases will help reestablish the SA-EC program as a vital component of the GCD AMP. The review and consultation also will identify topics on which the SA-EC program might focus in FY 2017, under AMWG guidance, and contribute to preparations for the next triennial budget and work plan.

The last formal activity of the Science Advisors program prior to its hiatus from late FY 2014 to late FY 2015 consisted of its reviewing and preparing recommendations on a draft of the GCD AMP Triennial Budget and Work Plan for Fiscal Years 2015-2017. The previous SA-EC presented these recommendations to the TWG and GCMRC in June, 2014, in the form of a meeting presentation and a substantial written report. The final version of the Triennial Budget and Work Plan addressed as many of these recommendations as possible, but does not indicate specifically where and how it took these recommendations into account. The document that the Science Advisors submitted with their recommendations in June 2014 also refers to past concerns of the Science Advisors program, and the extent to which these concerns have been addressed through June 2014. The SA-EC will compare the comments and recommendations submitted by the Science Advisors in June 2014 with the final Triennial Budget and Work Plan for FY 2015-17 to assess past SA-EC concerns and recommendations. Additionally, the SA-EC will: (a) review the annual reports of the SA-EC program from at least the previous five years (FY 2010-2014); (b) solicit the perspective of the previous Science Advisor Executive Coordinator, Dr. Garrett, and individual Science Advisors from FY 2010-2014 on outstanding and emerging concerns; (c) review all AMWG Action Items concerning the SA-EC program that appear to remain Open; (d) consult directly with the AMWG on scientific themes of existing or

emerging concern among the AMWG members; and (e) review the findings of a survey carried out late in calendar year 2015 by the AMWG Facilitator to assess AMWG concerns and expectations in general. Several of these activities overlap with activities to complete Objective #1, above, but focused on different types of information.

The specific elements of Objective #2 will be as follows:

2. *Review Science Advisor Program Thematic Concerns*

- 2.1. Jointly with the GCMRC, review and provide recommendations to the AMWG on the need for Project 1.2 identified in the GCD AMP Triennial Budget and Work Plan (TWP) for Fiscal Years 2015-2017, which calls for the GCMRC "...to fund a Science Review Panel to evaluate past studies of reservoir physical limnology and ecology that have focused on Lakes Powell and Mead. This Panel will be asked to make recommendations to the GCDAMP, Reclamation, and to other relevant agencies on how reservoir limnology and ecology ought to be monitored in the future and to make recommendations about how existing and new modeling tools could be used to predict future conditions in Lake Powell. Water quality, including temperature, is a strong determinant of ecological processes in the CRE. Because GCMRC and Reclamation continue to discuss changes in the approach and data analysis needs of Project 1, and because that project is funded on a calendar year cycle independent from the federal fiscal year cycle of the GCDAMP, a preliminary description of Project 1 is included as Appendix 1 of this TWP." As described in the TWP, this review panel is not an official Protocol Evaluation Panel but rather a type of external review for which the Science Advisors program originally was established.
- 2.2. Compare the June 2014 "Science Advisor Recommendations on Review of Glen Canyon Dam Adaptive Management Program Triennial Budget and Work Plan – Fiscal Years 2015-2017" with final version of the triennial budget and work plan, and determine the ways in which the final version addressed (or did not address) these recommendations.
- 2.3. Review the annual reports of the SA-EC program and all AMWG Action Items assigned to the SA-EC program from FY 2010-2014, and identify shared (repeated) scientific themes of concern.
- 2.4. Solicit the perspective of the previous Science Advisor Executive Coordinator, Dr. Garrett, and previous Science Advisors from FY 2010-2014 on outstanding and emerging concerns for program.
- 2.5. During the consultation carried out for Objective #1, element 1.2, above, solicit input on scientific themes of existing or emerging concern among the AMWG members.
- 2.6. Prepare and submit to Reclamation, the GCMRC, and the TWG for discussion a 'white paper' on (a) themes in Science Advisor program scientific concerns and recommendations to strengthen the GCD AMP; (b) the state of resolution of these concerns; and (c) emerging additional themes and/or concerns for strengthening the GCD AMP.

### **Objective 3: Establish the Science Advisor Program Work Plan for FY 2017**

The SA-EC must develop recommendations for its work plan for the upcoming fiscal year (FY 2017) for approval prior to the end of FY 2016. The process of assembling a work plan for the SA-EC program for an upcoming fiscal year requires several months, because the process requires time for: (1) soliciting suggestions from the AMWG, TWG, and GCMRC for tasks to include in the work plan; (2) identifying other possible tasks for the work plan based on additional perspectives; (3) prioritizing these ideas and drafting a work plan for review by Reclamation and subsequent revision; (4) submitting and presenting the proposed work plan to the AMWG for review; and (5) obtaining the approval of the AMWG and the Secretary of the Interior. Additionally, the SA-EC must begin working with Reclamation, the GCMRC, the TWG, and the AMWG during FY 2017 to help develop the next triennial budget and work plan. The information assembled and reported under Objectives #1 and #2, above, will significantly inform the work under Objective #3.

The specific elements of Objective #3 will be as follows:

3. *Establish the Science Advisor Program Work Plan for FY 2017*
  - 3.1. Tabulate formal Action Items for the SA-EC program previously approved by the AMWG.
  - 3.2. Compile suggestions from the AMWG, GCMRC, and TWG for topics for the SA-EC program to address in FY 2017.
  - 3.3. In consultation with the TWG, identify and prioritize a set of recommended objectives for the SA-EC program for FY 2017, based on criteria identified under Objective #1, above, with additional discussion with the GCMRC as necessary to clarify the terms of specific tasks; and assess likely costs. Objectives will include participation in a fixed number of meetings and conference calls (webinars) with Reclamation and with the AMWG, TWG, and GCMRC.
  - 3.4. Present proposed SA-EC work plan for FY 2017 for AMWG review
  - 3.5. Prepare final SA-EC work plan for FY 2017.

### **Objective 4: Fisheries Research, Monitoring, and Management Actions Protocol Evaluation Panel Assistance**

The GCD AMP Triennial Budget and Work Plan for Fiscal Years 2015-2017, Project 8.3, calls for the GCD AMP to conduct a “Fisheries Research, Monitoring, and Management Actions Protocol Evaluation Panel.” The triennial work plan lists the project leaders as Scott VanderKooi, GCMRC; Kirk Young, USFWS; Brian Healy, NPS; and David Rogowski, Arizona Game and Fish Department. The triennial work plan describes the project as follows:

*An external review panel comprised of scientists with relevant expertise will be convened in either FY16 or FY17 to ensure that the quality and relevance of fisheries science being conducted by GCMRC and its cooperators is held to the highest of standards. This panel will conduct a review of all aspects of the GCRMC fisheries program described in Projects 6, 7, 8, and 9 of the FY15–17 workplan. They will make recommendations regarding the scope and direction of the program as well as provide an evaluation and recommendations for*

*future work with respect to the level of effort, study design, and relevance of individual research activities.*

The foundational documents for the GCMRC and the SA/EC program do not stipulate which entity would conduct the Protocol Evaluation Panels (PEPs), which were part of the Independent Research Panels (IRPs) component of AMWG along with the SA/EC program. However, the SA/EC program does not appear to have been involved in any PEPs during at least the last six years of the last contract (FY 2009-2014) that the SA/EC program has so far reviewed. The GCMRC alone implemented all PEPs during this period. Regardless of such precedents, Reclamation and the GCMRC have asked the SA/EC program to assist in conducting the planned Fisheries Research, Monitoring, and Management Actions PEP in FY 2016. The fisheries research, monitoring, and management program in the Colorado River between Glen Canyon Dam and Lake Mead is a joint effort of the GCMRC, U.S. Fish and Wildlife Service, Grand Canyon National Park, and the Arizona Game and Fish Department, with support from Josh Korman, Ecometric Research Inc., Vancouver, BC, and several university research teams. It is subject to significant scrutiny among the AMWG members and the public, and subject to significant potentially conflicting goals. Consequently, external scientific review of the cooperative fisheries research, monitoring, and management program is crucial, as indicated in the description of the planned PEP presented in the triennial work plan. Participation of the SA/EC in the PEP will provide additional staff resources needed for implementing the PEP, and provide an additional layer of attention on behalf of the AMWG.

The specific elements of Objective #4 will be as follows:

4. *Fisheries Research, Monitoring, and Management Actions Protocol Evaluation Panel Assistance*
  - 1.1. Assist the GCMRC and cooperators in preparing a formal set of “charges” for the review panel and scheduling the panel meeting.
  - 1.2. Identify 5-7 peer reviewers from the scientific community external to the agencies and community directly involved in fisheries studies in Glen Canyon and the Grand Canyon.
  - 1.3. Provide opportunity for panel members to hear concerns of TWG prior to attending the panel meeting (primarily responsibility of the GCMRC).
  - 1.4. Plan logistical details for panel meeting (primarily responsibility of the GCMRC), concerning the exact meeting dates, agenda, inclusion of a field visit, presentations by GCMRC and cooperators, and discussion time.
  - 1.5. Attend and co-chair (with the GCMRC) panel meeting. Most of panel meeting activities set by agenda and coordinated by GCMRC logistical staff. GCMRC will provide note-taking services as needed, and will pay honoraria and travel expenses for all external panel members but not for SA/EC.
  - 1.6. Support and/or facilitate panel deliberations and preparation of report following panel meeting as requested by the panel.
  - 1.7. Submit report to Reclamation on SA/EC involvement in PEP.

## **Objective 5: Project Management**

Sound Science LLC must establish and maintain project management to Reclamation standards. The IDIQ governing Sound Science engagement as the Science Advisor Executive Coordinator for the GCD AMP requires that the contractor maintain an archive of documents prepared for the GCD AMP. Additionally, the IDIQ also requires that the contractor participate in monthly conference calls with Reclamation to maintain coordination and track progress. Further, the IDIQ requires that the contractor submit an annual report on the activities and achievements of the SA-EC program. Finally, this objective includes an element for routine project administration.

The specific elements of Objective #4 will be as follows:

### *5. Project Management*

- 5.1. Maintain cataloged archive of all Science Advisor program documents per protocols established under Task Order #2.
- 5.2. Conduct monthly calls with Agency/COTR.
- 5.3. Prepare and submit SA program annual report, which will include annual report on program archive status.
- 5.4. Maintain SA-EC program administration.

## **Deliverables**

1. Recommendations for an updated SA-EC Program Charter, submitted to AMWG.
2. White Paper on past, continuing, and emerging themes in Science Advisor program scientific concerns and recommendations to the GCD AMP.
3. SA-EC Program Work Plan and Budget for FY 2017.
4. SA-EC Program Annual Report for FY 2016.
5. SA/EC report on participation in, contributions to, and lessons learned from SA/EC involvement in the Fisheries PEP.

# Glen Canyon Dam Adaptive Management Program: Science Advisors Program FY16

David P. Braun, Sound Science LLC  
GCDAMP Executive Coordinator for Science Advisors  
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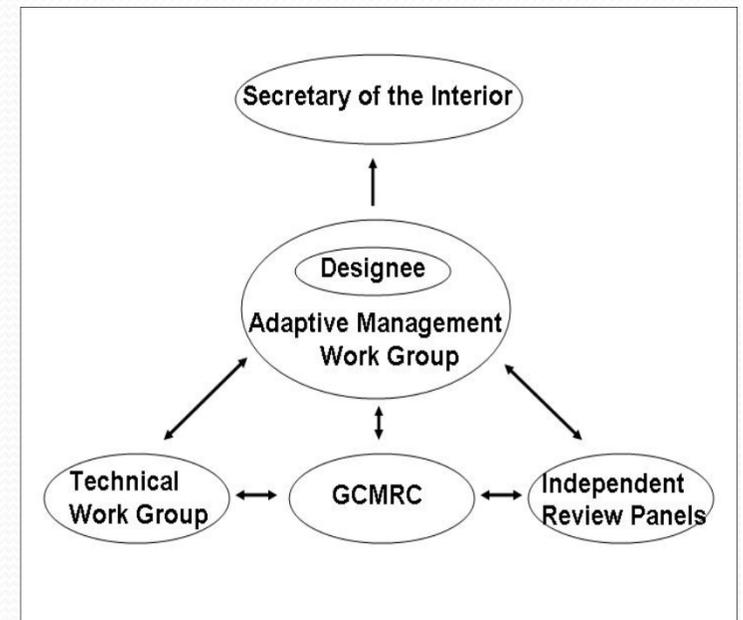


# Presentation outline

- Purposes of Science Advisors program
- Special circumstances affecting development of FY2016 work plan
- FY2016 work plan objectives
- Key steps and coordination needs to achieve FY2016 objectives

# Science Advisors origins: IRPs

- Part of “Independent Review Panels” established by 1995 FEIS & 1996 ROD
- IRPs “...periodically review[] resource specific monitoring and research programs and ... mak[e] recommendations to the AMWG and GCMRC regarding monitoring, priorities, integration and management.” (AMWG 1998)





# Science Advisors Role in IRPs

- Four Types of IRPs:
  - External review of research proposals to and reports from GCMRC (*now obsolete*)
  - NRC review of science program, resulting in 1999 report, *Downstream: Adaptive Management of Glen Canyon Dam and the Colorado River Ecosystem*
  - “Protocol Evaluation Program” (PEP)
  - “Scientific Advisors” program, with Executive Coordinator, for “periodically reviewing resource specific monitoring and research programs and for making recommendations to the AMWG and the Center [GCMRC] regarding monitoring, priorities, integration, and management” (2001 Science Advisors Operating Protocols)



# GCDAMP IRPs not unique

- Numerous “sister” IRPs for multi-agency, multiple-stakeholder adaptive management of other large regulated western rivers in U.S.
  - Sacramento-San Joaquin Bay-Delta Ecosystem Restoration Program  
<http://www.dfg.ca.gov/erp/>
  - Northwest Power and Conservation Council  
<https://www.nwcouncil.org/>
  - Missouri River Recovery Program  
<http://moriverrecovery.usace.army.mil>
  - Etc.



# Science Advisors FY2002-2014

- Executive Coordinator: Dr. L. David Garrett
- Continuously operating Science Advisor panel
- Conducted reviews agreed upon with TWG, GCMRC, AMWG
  - AMWG reviewed and recommended annual work plans to Secretary of the Interior
  - GCMRC responsible for administering and supervising
  - TWG closely involved in developing annual plan & budget
- Last action
  - June 2014 review of draft triennial work plan for FY15-17



# FY2016 Special Circumstances

- Program administration transferred from GCMRC to Reclamation as of FY2015
- Science Advisors no longer a standing panel; now to be empaneled as needed for individual reviews
- No annual work plan developed since FY2014
- No pending Action Items or other requests for program action
- Program practices evolved, FY2002-2014, not always with formal recognition or documentation
- LTEMP: opportunity to review and rethink IRP needs



# Science Advisors FY2016 plan

- Developed in consultation with Reclamation, GCMRC and TWG leadership, Secretary's designee
- Three objectives
  1. Review/update charter and protocols for the Science Advisors program & Executive Coordinator;
  2. Develop and confirm work plan for FY2017;
  3. Work with the GCMRC to ensure successful design and completion of Fisheries Protocol Evaluation Panel (PEP).



# Key steps to first two objectives

- Review program charter, official protocols, past practices
- Work with TWG to draft updated charter for AMWG to recommend to Secretary
- Review past AMP science integration efforts, DFCs, SSQs, CMINs, RINs, accomplishments
- Review results of AMP assessment survey (Orton)
- Consult with TWG members both individually and in groups
- Consult with GCMRC and Reclamation
- Consult previous Executive Coordinator and Science Advisors from FY2010-14
- Review June 2014 SA recommendations for & impacts on Triennial Work Plan for FY2015-17
- Review LTEMP EIS
- Review ISPs in other large multi-institutional adaptive management programs for large regulated western rivers



# Assisting Fisheries PEP

- Assisting GCMRC
  - Lead Cooperators: USGS, NPS, FWS, AGFD, ...
- Help frame “charges” to panel members concerning fisheries monitoring & research in relation to overall AMP goals & priorities
- Help identify potential panel members with deep experience in large-scale, river ecosystem adaptive management both within and beyond CRE
- Help facilitate workshop and panel reporting

Questions?