

**Minutes of  
Technical Work Group  
October 2-3, 1997**

FINAL

**Presiding:** Bruce Moore, USBR (temporary chairperson)

**Committee Members Present:**

Mark T. Anderson, USGS  
Cliff Barrett, RW Beck & Assoc.  
Kerry Christensen, Hualapai Nation  
Dave Cohen, Trout Unlimited  
Kurt Dongoske, The Hopi Tribe  
Owen Gorman, USFWS  
Chris Harris, ADWR  
Norm Henderson, GCNRA  
Amy Heuslein, BIA  
Gene Jencok, CWCB  
Robert King, UDWR

Phillip S. Lehr, CRCN  
Carlos Mayo, Southern Paiute Consortium  
Tom Moody, Grand Canyon Trust  
Bruce Moore, USBR  
Clayton Palmer, WAPA  
Bill Persons, AGF  
Andre Potochnik, Grand Canyon River Guides  
John Shields, Wyoming State Engineer's Office  
Robert Winfree, NPS  
Fred Worthley, CRBC

**Alternates Present:**

Richard Begay  
Wayne Cook  
Robert Forrest  
Tom Latousek

**Alternate For:**

Richard Downer, Navajo Nation  
Thomas Turney, New Mexico State Engineer  
William Davis, EcoPlan Assoc./CREDA  
Pamela Hyde, American Rivers

**Other Interested Persons Present:**

David Garrett, GCMRC  
Julia Graf, USGS  
Vickie Kieffer, GCMRC  
Mike Liszewski, GCMRC

Steven Lloyd, USBR  
Randy Peterson, USBR  
Mark Phillips, Trout Unlimited  
Larry Sibala, BIA  
Michael Yeatts, Hopi Tribe

**Recorder:** Serena Mankiller, GCMRC

**Convened 10/2/97:** at 9:32 a.m.; Adjourned: 4:45 p.m.

**Convened 10/3/97:** at 8:00 a.m.; Adjourned: 10:45 a.m.

**Welcome/Introductions:** Bruce Moore welcomed the committee members who introduced themselves.

**Meeting Agenda:** The agenda was reviewed and revised (Attachment 1).

**Federal Register Notice:** Bruce Moore reported that the 15-day requirement for notice of this meeting was not met (it was published 12 days prior).

***Recommendation:*** Reclamation is awaiting clarification from the Solicitor's Office on requirements the TWG needs to follow. FACA and non-FACA requirements issues will be resolved by the next meeting. Future meeting notices will be published according to the 15-day requirement.

## **ADMINISTRATIVE BUSINESS**

**OPERATING PROCEDURES:** Bruce Moore distributed a sample list of TWG Operating Procedures (Attachment 2). It was reviewed and revised by the committee.

**Purpose and Authority:** TWG committee members serve at the pleasure of the AMWG members and alternates. Formation of the TWG and legal implications are still being discussed in the Solicitor's Office.

**1. Meetings:** Meeting frequency, notice and mailing list was discussed.

***Recommendation:*** TWG meetings will be held once per month. Meetings will be scheduled for 2-3 months at a time. Federal notices will encompass meetings and topics for that period of time. In the future, the mailing list will include fishing guides and other interested parties. Reclamation will submit a meeting notice to be published in the Federal Register 15 days prior to the meeting. The Chairperson will draft a reminder meeting notice to the committee members and the GCMRC secretary will distribute it 7 days prior to the meeting. Meeting format will be informal.

**2. Alternate Committee Members:** Discussion regarding voting privilege, designation of alternates and count for quorum.

***Recommendation:*** Alternates are designated by TWG committee members. If the official member cannot attend a meeting, he/she will notify the Chair in advance of the next meeting that their alternate will be attending instead. Alternates are to sign-in on the attendance sheet next to the committee member's name for whom they are attending. Alternates are considered official representatives of their agency/affiliation, may vote on TWG issues and be counted in the quorum.

**3. Chairperson:** Discussion regarding responsibilities of chairperson included designee appointment, and convening, adjourning and facilitating meetings. The chairperson issue ended with a vote among four candidates.

***Recommendation:*** Bruce Moore will act as Chair for the October 2-3 meeting. Bob Winfree

was elected Chair for a term to be decided at the next meeting (at least through AMWG's 1/15/98 meeting). Bruce Moore will vice-chair future meetings. This recommendation will be adopted at the next TWG meeting.

*Chair responsibilities:*

- Convene, facilitate and adjourn meetings (Chair is not to provide resources);
- In the event of his absence, appoints a designee to chair meetings.
- Prepare draft and final agendas and forward to secretary for distribution;
- Actively participates in committee discussions;
- Entertains input from the public on issues and recognizes the public as appropriate;
- Follows up with committee members and task groups to verify that tasks are on schedule by conducting a pre-meeting conference call or individual calls 3-5 days prior to meeting.
- Bring discussions to closure.

*Vice-Chairperson responsibilities include:*

- Providing logistics and staff support to Chair to accomplish tasks (BOR/GCMRC);
- Chairs the meeting in the absence of Chair

**4. Members.** TWG representatives were nominated by AMWG committee members.

*Recommendation:* Replacement, length of term and rotation of members will be discussed at a later date.

**5. Agenda.** Agenda input, preparation, review, approval was discussed.

*Recommendation:* Members will submit agenda items to the Chairperson on or before 10 days prior to the upcoming meeting. A draft agenda will be prepared by the Chairperson and forwarded to the GCMRC secretary. The GCMRC secretary will prepare the final agenda and distribute it (by e-mail or other means) to the committee and others on the distribution list. Reclamation will prepare a Federal Notice which covers a broad range of topics in order to avoid procedural errors and delays in forwarding recommendations to the AMWG. Reclamation will cause the agenda to be published in the Federal Register.

**6. Making of Motions/Proposals from Group or Public.** Motions and proposals from the group or the public will be discussed at a later meeting.

**7. Voting.** Voting methods and determination of decisions was discussed at length.

*Recommendation:* A vote will be held on issues to be sent forward to the AMWG. Consensus is the desired result. We will attempt to reach a two-thirds consensus agreement. If consensus cannot be achieved, a two-thirds consensus recommendation will go forward along with a one-

third minority opinion report (containing the alternate recommendation and identification of who is part of the minority). If the vote is split 50/50, the members will continue to discuss the issue and reach a two-thirds majority. In either case, task groups consisting of the dissenting members will be formed as needed to write up minority opinions. The appointed TWG representative is expected to explain and/or clarify the issue to his/her AMWG member. Recommendations will go forward in the form of summarized information in report form, and will contain:

- identification of the issue
- a list of members agreeing and disagreeing
- majority and minority opinions

**8. Ad Hoc Groups and Meetings.** Ad hoc groups will be formed as needed, consisting of TWG members.

*Recommendation:* TWG will use ad hoc groups to accomplish specific tasks. Groups may enlist the assistance of technical advisors.

**9. Minutes.** Recording of minutes and method of approval was discussed.

*Recommendation:* Minutes will be recorded by GCMRC secretary. We will use a tape recorder as a back up to the shorthand notes. Minutes, attachments, agendas and materials needed for upcoming TWG meetings will be distributed according to the schedule below:

<u>10 Business Days Prior to TWG Meeting:</u>	<u>Responsible Person</u>	<u>Submit To</u>
• Agenda Items	Committee Members	Chair
• Materials for duplication and distribution	Committee Members	GCMRC secretary

Committee members responsible for materials for the upcoming meeting need to forward them to GCMRC secretary in time to be included with the distribution which will occur one week prior to the meeting. Materials may be provided to GCMRC secretary via e-mail (send to: dgarrett@flagmail.wr.usgs.gov) or hard copy (send to: Dave Garrett, Attn: TWG Secretary, Grand Canyon Monitoring and Research Center, 2255 N. Gemini Drive, Room 341, Flagstaff, Arizona 86001-1637). Distribution (to the committee and others on the mailing list) of materials not ready in time will be done by the responsible committee member. He/she may either: (1) e-mail, fax or other means; (2) duplicate prior to and distribute at the meeting.

A mailing list of TWG members was distributed. Phone numbers are to be added and the list re-distributed. Submit mailing list additions or revisions to GCMRC secretary, who will be responsible for updating the list.

7 Calendar Days Prior to TWG Meeting:

Responsible Person:

- |   |                 |
|---|-----------------|
| • Minutes and attachments from the previous meeting | GCMRC secretary |
| • Agenda for the upcoming meeting                   | GCMRC secretary |
| • Materials needed for the upcoming meeting         | GCMRC secretary |

E-mail, regular mail or other means may be used for the distribution. In the interest of keeping costs down, e-mail should be utilized as much as possible.

**10. Arranging Meetings and other Operational Duties.** Pre-meeting documentation and meeting location was discussed. The committee discussed meeting room arrangements and location. Some members require at least one month advance notice of upcoming meetings.

*Recommendation:* Meetings will continue to be held at La Quinta hotel at 2510 West Greenway Road, Phoenix, Arizona. Meetings will be scheduled 2-3 months in advance. The next meetings will be held November 3-4 4-5, 1997, and December 10-11, 1997. The GCMRC office will book hotel meeting rooms and audio-visual equipment, and block a number of hotel guest rooms.

**11. Public/Visitors.** The public and visitors may observe the meetings.

*Recommendation:* The Chair will entertain public comment at the end of each meeting, but not during discussion and/or debate of issues. Each person is limited to ten minutes and will submit discussion issues in advance to the Chair. The Chair will control adherence to the time limit so the meeting is not unduly prolonged.

**12. Open/Closed Meetings.** The meetings are open to the public.

*Recommendation:* Closed meetings will be discussed at a future meeting.

**13. Reports and Record Keeping.** Discussed by the committee.

*Recommendation:* Steve Lloyd will be responsible for reports and distribution of materials to AMWG, and providing copies of information to the Library of Congress.

**14. Rechartering and Operating Procedures.** Discussed.

*Recommendations:* Amendments approval and re-designation of the TWG will be discussed at the next meeting.

**ADMINISTRATIVE BUSINESS (continued):**

**Decision-Making Process:** The non-FACA status of the first TWG meeting will limit the decision-making process (for this meeting only). The committee discussed our ability to make decisions at today's meeting. Wayne Cook asked how formal this committee should be. Methods of future decision-making and reporting to AMWG were discussed at length. If emergencies arise, TWG should be allowed the flexibility to make recommendations for further evaluation to the AMWG. (See also "Voting," item #7 under "Administrative Business" in these minutes.)

*Recommendation:* In the interest of efficiency, recommendations on issues will be made during today's meeting and formally adopted at the next meeting. Criteria received from AMWG regarding products are that it needs substantive materials 60 days prior to its meeting (i.e., Annual Plans). Other information (i.e., proposal document, position meeting, etc.) may be received within a "reasonable" time before AMWG's meeting. The TWG needs to receive products in sufficient time to agree/disagree on them before submission to AMWG.

**Issues in Addition to AMWG:** Discussed.

*Recommendation:* Issues not addressed under a specific topic will be discussed at the next meeting.

**60-Day Requirement for Submittal of Materials to AMWG:** Submission of information was discussed at length. Dave Garrett stated that the 1999 Annual Plan is critical to establish 1999 contracts in a timely manner.

*Recommendation:* AMWG requires substantive materials on products 60 days prior to its meeting, as follows:

**Materials to be Received 60 Days Prior (by November 15, 1997):**

1999 Annual Monitoring and Research Plan  
Report to Congress  
1999 Budget; 2000 Budget  
State of Natural and Cultural Resources Report  
Adaptive Management Flow Regimes (Hydrograph)

AMWG requires other information (i.e., proposal document, position meeting, etc.) may be received within a "reasonable" time before AMWG's meeting.

The TWG needs to receive products in time to agree or disagree on them before submission to AMWG.

## **CHARGE FROM AMWG**

TWG is a key part of the AWG process as outlined in the EIS. Its charge is to:

- Develop monitoring and research programs within three months
- Develop resource management questions for the design of monitoring and research (GCMRC)
- Provide information as necessary for Annual Reports and other resource reports by the AMWG

Members were assigned by the AMWG to:

- Represent their respective agencies and affiliations
- Lend their technical expertise to review various issues
- Make recommendations on these issues to AMWG
- Interface with AMWG and the GCMRC

Bruce Moore distributed copies of the Operating Criteria which was adopted by the Secretary of the Interior and signed on February 24, 1997 (Attachment 3).

## **BEACH MAINTENANCE AND BUILDING FLOWS**

The water year begins October 1. We will develop a process that the agencies can agree on in order to perform the monitoring and research which complies with ESA and NEPA requirements. We plan to have the criteria signed off on the AOP and Annual Plan. Dave Garrett confirmed that we need to have a fiscal year 1998 contingency plan for a high flow event and also for an unscheduled spill that could occur this year due to El Niño.

### **October 1997 Test Flow:**

The flow will be delayed and is rescheduled to the week of October 13. It is a "may affect" rather than a "no effect" and requires FWS consultation. Owen Gorman stated that effects on Humpback Chubs have to be addressed. The timing of a maintenance flow in the fall would have more impacts to young chub than before the spawning season in spring. The committee felt that Sam Spiller at FWS had been given notice in the last AMWG meeting. FWS was not contacted after the meeting to confirm when the flow was scheduled, and requires one week to prepare an opinion. Discussion about appointing an ESA Coordinator out of the AMWG at the next meeting to help coordinate Reclamation and FWS efforts with AMWG. Owen Gorman does not think a coordinator is necessary. This test flow was a different process than the spike flow. FWS was aware that Reclamation wanted to do a test flow, but Reclamation should have contacted FWS by a certain date in order to obtain a consultation on a federal action.

Chris Harris stated that any actions we take in the Colorado River basin are closely scrutinized. We need to initiate formal consultations and not open any federal agencies to lawsuits.

Barry Gold sent Terry Gunn an e-mail notification of the flow delay, but Mark Phillips reported that it is unclear if Terry reviewed his e-mail.

*Recommendation:*

- The GCMRC office will ensure that the fishing guides and the AMWG receive notification of the delay today;
- FWS will provide a biological opinion in one week analyzing impacts to threatened and endangered species from the flow;
- FWS will be given sufficient notice (135 days) of the need for consultation in the future;
- TWG will gather data and make flow recommendations in the future;

The flow was approved before the TWG was officially a committee.

Randy Peterson indicated that Reclamation has set the January 1, 1998 target storage in Lake Powell at 21.5 MAF as opposed to the normal target of 21.6 MAF. This change in target is due to Reclamation's view that the present El Nino conditions should be factored into reservoir operations.

The planned two-day, 31,000 cfs flow (4,000 cfs/hour upramp/15,00 cfs/hour downramp) previously scheduled for October 6 has been delayed until the week of October 13 to allow time for Endangered Species Act Section 7 consultation. It is categorized as a test flow because it falls into the following criteria:

- Requires ESA consultation;
- FWS needs to prepare a biological opinion because it is a "may affect" and not a "no effect";
- \*The flow level is within the EIS guideline and does not require NEPA documentation;
- \*We are not required by law to comply with NEPA (we have done NEPA compliance voluntarily in the past);
- 31,000 cfs is within power plant capacity and within its authorized operating range.

*\*Note: Further investigation by Reclamation has determined that these statements do not apply.*

**Beach/Habitat-Building Flow (Spike Flow):**

Randy Peterson stated that in order to make decisions regarding the AOP and Annual Report pursuant to the GCPA, criteria needed to be developed in advance by which we can determine the need for a spike flow by November of each year (Attachment 4). He reviewed at length the hydrology and history (1985 to present) of flows with the committee members. He discussed

how releases are determined based upon the forecast and other factors based upon the probability of error.

Lake Powell inflows are 300% of normal for this past week. September inflows were 215% of normal. We are usually at 8,000 cfs but are at 24,000 cfs for the month. This is up from August at 75% of normal. The forecast for November/December is average. We had a peak of 35,000 cfs last week. Planned releases for December will be set at 20,000 cfs. Average daily flows for January 1 are estimated at 21.1 MAF storage. The forecast for the 1998 water year is average. Flows will be increased to 21,000 cfs to offset the expected increase in precipitation from the El Nino weather pattern, and also because upstream reservoirs are full. It is estimated that there will be approximately 10 MAF (+/- 3 MAF of inflow to Lake Powell). A spill would occur at 13 MAF.

Clayton Palmer stated that Reclamation should carry a contingency of \$1,000,000 in their work plan in order to perform a spike flow. Reclamation usually does not cover this in their work plan and would request additional funding from WAPA. Dave Garrett is budgeting two years in advance. The forecast is for three months in advance. We need a contingency plan for a high flow.

**Uncontrolled Spills:** Dave Garrett stated that we have an expectation that an unscheduled spill might occur and we need an evaluation on an uncontrolled event and a contingency plan.

*Recommendation:* We need a contingency plan for a high flow and an uncontrolled spill. From now to November 15 we need a system-wide parameter-wide estimate of sediment index. We have to solve the process of declaring spike flows by then. An ad hoc group will be formed as a subset of TWG. Its charge is to:

- evaluate scenarios and propose a criteria which triggers a spill and bring it to the next TWG meeting;
- prepare a position paper on cfs flow impacts;
- determine frequency of spike flows based on resources and on hydrographs.

Its goal is to develop a decision mechanism to determine if a spike flow should be released. The ad hoc group will study past water year scenarios and provide input to the Adaptive Management Flow Regimes report. The report needs to be reviewed at the next TWG meeting and sent forward so that AMWG receives it by November 15 for review prior to the January 15, 1998, meeting. The following committee members volunteered or were volunteered to be on the Spike Flow Ad Hoc Group: Mark Anderson, Cliff Barrett, Wayne Cook, Chris Harris, Bill Jackson, Ted Melis, Tom Moody, Clayton Palmer. Randy Peterson will chair the ad hoc group and will notify them of their first meeting. By November 1 the ad hoc group will distribute a hydrograph determination of spike flows. Unscheduled events caused by hydrologic conditions and dam safety will be placed on TWG's December agenda, and on AMWG's January agenda. The ad

hoc group will prepare a position paper on cfs test flow impacts for approval at the next TWG meeting and send it forward to AMWG for approval to develop plan parameters.

**March 1998 Beach/Habitat-Building Flow:** We will need to make a "Response to Forecast" recommendation by November of each year. Although more information is available in January/February, it is too late in the water year to process a plan of action. The AMWG needs to react by January. The Center, with the assistance of AMWG, should have the research design and a contingent fund ready in advance. When the risk criteria is met and a decision is made to run a spike flow, we go directly to the notification process. Owen Gorman stated that a second population of Kanab Ambersnails must be established before another spike flow can be done. There is no evidence that the snails have re-inhabited the old area yet. Every time we have a flow of greater than 25,000 cfs there has to be an assessment of what the take would be, except for emergencies. If the take exceeds 10% of the population, individuals have to be moved and a survey done afterwards. The master Kanab Ambersnail permit has not yet been applied for to be re-issued to GCMRC. Larry Stevens (GCMRC) holds the existing permit to move the snails.

Resources above and below the dam are issues when making a decision to run a spike flow:

- there should be sufficient sediment in the system below;
- there is sufficient water in the system above;
- dam safety issues are a factor.

*Recommendation:*

- ESA consultation process for a spike flow in the spring of 1998 should start as early as possible; Reclamation will begin a consultation request as soon as possible;
- Any outstanding RPA elements from the 1996 BHBF flow need to be addressed;
- Chris Karas should be present at the next TWG meeting to give a status report on Kanab Ambersnails to avoid any delays in the process;
- Bruce Moore will provide an environmental issues prospectus to the TWG prior to the next meeting.
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## **ANNUAL REPORT TO CONGRESS**

Dave Garrett discussed the Report to Congress currently being developed. A draft 1996-97 GCPA Adaptive Management Program Report to Congress was distributed (Attachment 3) which lists reporting requirements and elements.

*Recommendation:* The report will be distributed to TWG the week of October 13 for review and revision at the November 4-5 meeting. It will then be forwarded to Dave Garrett's Management Team in Washington, D.C. for review. It will be sent to AMWG before November 15 and placed on their agenda for the January 15, 1998 meeting.

## **MONITORING AND RESEARCH PLANS FY 1998-99**

Dave Garrett discussed the 1998-99 Monitoring and Research Plan. He requested assistance from TWG to develop the plan in time to submit a report to AMWG 60 days prior to the January, 1998 meeting.

The RFP process needs to begin in January of each year. This gives the GCMRC two months to develop the RFP for release to proposers in April. This gives proposers 90 days to develop and submit their proposals. Approximately 90 additional days are needed to complete the contracting process.

TWG needs a draft work plan from the GCMRC by November 4. It will have to be based on the current objectives, because we do not have time to make major revisions.

*Recommendation:* Dave Garrett will make minor revisions to the FY98 Management Objectives for use with the FY99 work plan. The work plan will be finished in TWG's December meeting. An Ad Hoc Group Meeting to review the FY99 Annual Plan will be formed, consisting of the following members:

Chris Harris	Wayne Cook
Cliff Barrett	Margaret Matter
Norm Henderson	Dave Cohen
Kurt Dongoske	Dave Garrett (group lead)
Robert Winfree	Someone from the Bureau of Reclamation

They will meet at La Quinta hotel for two days from 8 a.m. to 5 p.m. The first meeting is scheduled for October 10; the second for October 15.

## **RESOURCE MANAGEMENT QUESTIONS**

This topic was discussed at AMWG. Resource management questions are short-term information needs. They must be evaluated continually to determine if we are asking ourselves the right questions about interrelationships amongst resources that we study (i.e., how data collection affects more than one resource and how to efficiently utilize the information). What are the objectives to accomplish the questions? AMWG will have input into resource management in the future.

*Recommendation:* This topic will be a future agenda item for TWG.

## **MANAGEMENT OBJECTIVES**

Management objectives are our long-term focus, and took a significant amount of time to develop.

*Recommendation:* The FY99 work plan group will review management objectives. The topic will be placed on TWG's agenda for the November 4-5 meeting. After January, a new management objectives team will be formed to review and revise management objectives. We will need formal adoption at TWG. A position paper will be developed in the spring and sent forward for adoption at the mid-year AMWG meeting. TWG will request that we be charged with reassessing the FY99 management objectives in the spring, and reviewing the FY2000 work plan. Dave Garrett can make minor changes to the FY99 management objectives, but cannot make a complete change without delaying other time-critical projects.

## **BUDGET**

The 1998, 1999 and 2000 budgets were discussed. The 1999 budget will be available in January 1998. The 2000 budget will be sent out of Reclamation in May 1998 to the Assistant Secretary Department level where it will be reviewed and submitted to Congress at the end of January 1999. We need a budget cycle chart.

*Recommendation:* The 1998 budget will be presented at the next TWG meeting. It will then go forward to AMWG. Work items which do not include the budget number for the FY2000 budget will be submitted to the TWG so they may begin work. We can give input until April. After the budget is approved, TWG will receive more information to continue their work. We will want to get line items in CRSP approved.

Chris Harris will develop a flow chart which shows roles and responsibilities of the various groups, time critical paths for work products, the AOP Process and the budget cycle. The chart will be submitted to TWG and AMWG.

## **ACTION ITEMS (approval needed at next TWG meeting:)**

### **Meeting Action Items:**

- **General**
  - Approve Meeting Location
  - Approve Meeting Schedule
  - Closed Meetings Decision
  - Amendments approval and re-designation of the TWG
  - Issues in Addition to AMWG

• **Chair**

- Robert Winfree elected through January, 1998
- term of Chair
- facilitates meetings
- draft agenda preparation & forwarding to secretary
- reviews & revises draft minutes and forwards to secretary
- facilitates public input
- follows up with ad hoc groups on projects to ensure they are ready on time
- does not provide resources
- sets date and holds a pre-meeting conference call with Vice-Chair and others as needed 2-3 days prior to upcoming meeting

**Vice-Chair**

- Bruce Moore elected
- term of Vice-Chair
- facilitates meeting in Chair's absence
- other responsibilities in Chair's absence
- publishes Federal Register Notice of TWG meetings
- provides resources from the USBR

• **GCMRC/Secretary Responsibilities**

- provides support to Chair
- records and transcribes meeting minutes
- prepares final agenda
- schedules meeting rooms and audio/visual equipment; places hold on guest rooms
- maintains all distribution/ mailing lists (TWG Committee and other interested parties)
- distributes all information to TWG in advance of meeting
- arranges Chair's pre-meeting conference calls
- GCMRC provides resources

• **Other TWG Committee Members Responsibilities**

- names permanent alternate (so no confusion exists regarding meeting attendance)
- provides materials to Secretary to distribute (10 days prior to upcoming meeting)
- provides materials to Steve Lloyd to distribute to AMWG (to be received 60 days prior to AMWG meeting)
- Steve Lloyd to distribute AMWG materials
- Steve Lloyd to send copy of AMWG materials to Secretary who will courtesy copy TWG Committee
- Steve Lloyd to ensure documentation is forwarded to Library of Congress

**Major Tasks to be Completed:**

- FY99 Budget
- Beach/Habitat-Building Flow for March, 1998
- 1998 Report to Congress
- State of Natural and Cultural Resources Report (State of the River Report)
- FY99 Annual Monitoring and Research Plan

**Other Tasks to be Completed:**

- Management Information Needs
- Management Objectives
- Budget Cycle & Project Due Dates Flowchart - *Chris Harris*

**AMWG Agenda Items for January 15, 1998:**

FY1999 Annual Monitoring and Research Plan  
Report to Congress  
1999 Budget; 2000 Budget  
State of Natural and Cultural Resources Report  
Adaptive Management Flow Regimes (Hydrograph)

**Ad Hoc Group Status Reports:**

FY99 Program Planning Group - *Dave Garrett*  
Spike Flow Ad Hoc Group - *Randy Peterson*

Respectfully submitted,

Serena Mankiller  
GCMRC Secretary

## Key to Abbreviations

**ADWR** - Arizona Department of Water Resources  
**AGF** - Arizona Game & Fish Department  
**AMWG** - Adaptive Management Work Group  
**AOP** - Annual Operating Plan  
**BHBF** - Beach/Habitat-Building Flow  
**BIA** - Bureau of Indian Affairs  
**BOR** - Bureau of Reclamation  
**CRBC** - Colorado River Board of California  
**CRCN** - Colorado River Commission of Nevada  
**CRSP** - Colorado River Storage Project  
**CWCB** - Colorado Water Conservation Board  
**EIS** - Environmental Impact Statement  
**ESA** - Endangered Species Act  
**FACA** - Federal Advisory Committee Act  
**FWS** - United States Fish & Wildlife Service  
**FY** - Fiscal Year  
**GCD** - Glen Canyon Dam  
**GCMRC** - Grand Canyon Monitoring and Research Center  
**GCNRA** - Glen Canyon National Recreation Area  
**GCPA** - Grand Canyon Protection Act  
**MAF** - Million Acre Feet  
**NEPA** - National Environmental Policy Act  
**NPS** - National Park Service  
**Reclamation** - Bureau of Reclamation  
**RFP** - Request For Proposal  
**RPA** - Reasonable and Prudent Alternative  
**TWG** - Technical Work Group (Glen Canyon)  
**UCRC** - Upper Colorado River Commission  
**UDWR** - Utah Division of Water Resources  
**USBR** - United States Bureau of Reclamation  
**USFWS** - United States Fish & Wildlife Service  
**USGS** - United States Geological Survey  
**WAPA** - Western Area Power Administration