



Update on Core Monitoring Plan

Prepared for the TWG
Feb, 2005



History

- **Concept discussed - October 2003-March 2004**
- **Core Monitoring Ad Hoc formed by TWG - March 30, 2004**
- **Core Monitoring Team 1st meeting Flagstaff - April 9, 2004**
- **Position statement to AMWG and TWG - April**
- **Core Monitoring Team 2nd meeting, Phoenix - May 4, 2004**
- **Second update memo to AMWG and TWG – May, 2004**

History (cont.)

- Science Advisors review first draft - June, 2004
- GCMRC revises based on comments from SAB
- Second draft presented to AMWG/TWG - Aug, 2004
- Core Monitoring Team 3rd meeting – Sep, 2004
- GCMRC revises plan to address team comments
- Third draft presented to AMWG – Oct, 2004 (on time)
- Comments and responses compiled – Jan, 2005
- CMT meeting to discuss process leading to revision and recommendation to AMWG – Feb, 2005

Process and assumptions established by the CMT April 9

- Collaborative - This is a fully cooperative venture involving GCMRC, TWG ad hoc members, with review by SAB
- Decision points
- Memos



Core monitoring



- **Core monitoring is consistent, long-term, repeated measurements using scientifically accepted protocols to measure status and trends of key resources to answer specific management questions. Core monitoring is implemented on a fixed schedule regardless of budget or other circumstances (e.g., water year, experimental flows, temperature control, stocking strategy, non-native control, etc.) affecting target resources.**

Resource categories



- A. Sediment
- B. Wildlife/Vegetation
- C. Fish
- D. Food base
- E1. Cultural Resources
- Traditional cultural properties
- E2. Register eligible historic properties
- F. Hydrology
- G. Water Quality
- H. Recreation
- I. Threatened and endangered species
- J. Power
- K. Economics
- L. Non-native species

Relevant questions



- What and why do managers and others need to know?
- Where do they want to know it?
- How frequently do they need to know?
- What are the general methods to obtain this information?
- What is the level of precision/accuracy needed
- How will the monitoring data be presented and is it answering the managers questions (what are the metrics of success?)

What did we get?

- A plan that accomodated everyone's issues of concern
- A projected budget of over \$5.6 million
- Concern that the TWG had inadequate time to comment on the plan

Format of plan changed in response to early comments

- **Current core monitoring capabilities**
- **Future core monitoring programs (R&D)**



Current capabilities

- Lake Powell
- GCD releases
- GCD power and revenue
- Surface water measurements
- QW
- Fisheries (LFT, HBC)

R&D elements

- QW (R&D): nutrients, major ions, C budgets, etc.
- Fine sediment
- Coarse sediment
- Aquatic food web
- Downstream fishes in main stem (HBC aggregations, below Diamond Creek, etc.)
- Fine sediment (terrestrial)
- Coarse sediment (terrestrial)
- Terrestrial veg.
- KAS
- SWFL
- Register & non-register eligible HP's
- Recreational resources (experience, campsites, economics)

Written comments received during an extended comment period

- NPS
- FWS
- GCWC
- CREDA
- SAB
- BOR



Comments received (cont.)

- Comments compiled
- Draft responses provided to CMT



Green category

- **Lake Powell Quality of Water**
- **Downstream Integrated Quality-of-Water**
- **Streamflow & Suspended-Sediment Transport**
- **Rainbow Trout in the Lees Ferry Reach**
- **Humpback Chub in the Little Colorado River**
- **Airborne Remote Sensing (Digital, Orthorectified Imagery)**
- **DBMS - Storing New Core-Monitoring Data**
- **Geographic Information System - Support Fieldwork & Overflights**

Yellow category

- **Impacts of Coarse-Grained Inputs**
- **Fine-Sediment Storage**
- **Terrestrial Ecosystem**
- **T&E Wildlife - Kanab Ambersnail**
- **T&E Wildlife - Southwest Willow Flycatcher**
- **High Resolution LiDAR & Very High Resolution LIDAR for arch sites)**

Red category

- **Food Web (Research Toward Development of a Monitoring Plan)**
- **Downstream Fishes in the Main Channel**
- **Cultural Resources Monitoring - Archaeological Sites (TBD)**
- **Tribal Monitoring of TCPs and culturally important resources (TBD)**
- **Recreational Monitoring - visitor use & experiential attributes (TBD)**
- **Recreational Monitoring - campsites (TBD)**

Process

- Evaluate green list against:
 - responses to written comments
 - AMWG priorities
 - MO's
 - accuracy, precision, and desired future conditions
 - fiscal limitations

What's next?

- 1. CMT meeting Mar 10-11**
- 2. April 1 mailout of draft 4 to SAB**
- 3. April 10 review finished**
- 4. CMT meeting Apr 11-12**
- 5. Revise draft 5 to mail to TWG May 3**
- 6. Proposed TWG meeting week May 16**
- 7. Final CMP proposal to AMWG June 1**
- 8. Proposed AMWG meeting after July 1**