Technical Work Group Chair Report

Adaptive Management Work Group Meeting

February 13, 2020

Seth Shanahan

TWG Chairperson

Meetings

- Past
  - October 21-22, 2019
  - January 13-15, 2020 (AR/TWG)
- Future
  - April 15-16, 2020
  - June 23-24, 2020
  - October 14-15, 2020
  - January 20-22, 2021

Items Reported Elsewhere on AMWG Agenda

- Hydrology and operations
- Annual Reporting Meeting
- Potential experiments in 2020
- Triennial Budget and Work Plan
- Non-native EA (NPS)
- Lees Ferry Trout Fishery (AZGFD)

Glen Canyon Dam Adaptive Management Program
Adaptive Management Work Group Meeting, February 12-13, 2020
Hilton Garden Inn, 7290 S Price Road, Tempe, AZ
Meeting Room: Ballroom

Wednesday, February 12, 2020
Day 1 Webinar Information:
https://bor.webex.com/bor/j.php?MTID=m4c5017aba50997e72049d8c00b8dc14c
Telephone: 877-932-7704 Passcode: 8410783

DRAFT A G E N D A

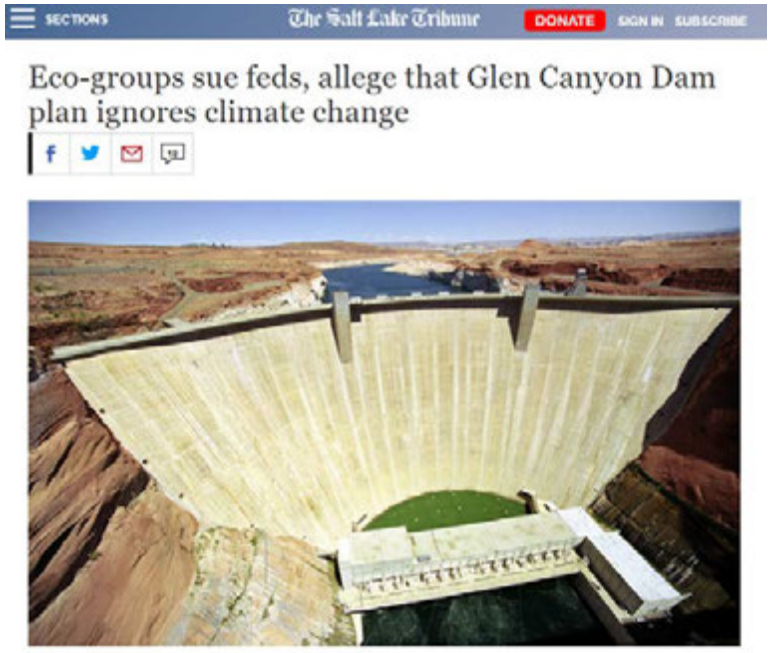
START TIME [1] (Duration)	Wednesday, February 12, 2020 Topic and Presenter and Purpose[2]
9:30 (:45)	**Welcome and Administrative:** Tim Petty, Assistant Secretary for Water and Science, Department of the Interior and Secretary's Designee ▪ Introductions and Determination of Quorum (13 members) ▪ Approval of August 2019 Meeting Minutes ▪ Administrative Updates o Progress on Nominations and Reappointments o Action Item Tracking Report
10:15 (:30)	**Proposed Rule for Downlisting Humpback Chub:** Tom Chart, Jessica Gwinn, and Kevin McAbee, U.S. Fish and Wildlife Service ▪ Presentation (20 minutes) ▪ Q&A and discussion (10 minutes) Agenda item type: Information item Purpose: To share information about the recently published 4(d) rule for the proposed downlisting of Humpback Chub.
10:45 (:45)	**2020 GCDAMP Annual Reporting Meeting Update – Part 1:** Scott VanderKooi, Chief, Grand Canyon Monitoring and Research Center ▪ Presentation (30 minutes) ▪ Q&A and discussion (15 minutes)

AMWG Item 2019.May.22

- Item summary
  - TWG to take on - “A next step would be for GCMRC to identify experimental flow options that would consider high valued resources of concern to the GCDAMP (defined above), fill critical data gaps, and reduce scientific uncertainties.”
- Actions taken or in progress
  - FLAHG formed; charge finalized
  - Working to define the resource objectives
  - Provide resource objectives to GCMRC for project element discussion at BAHG

Informational Updates

- LTEMP lawsuit
- LCR pumpback hydro project
- Idea of razorback stocking in Grand Canyon
- Idea of bonytail stocking in Lake Mead



Understanding Spring HFE Accounting Period

- Mismatch
  - Implemented March or April
  - Accounting December to June
- Which month is the sand mass balance model run through?
- How are potential sand inputs in May and June considered, if at all?

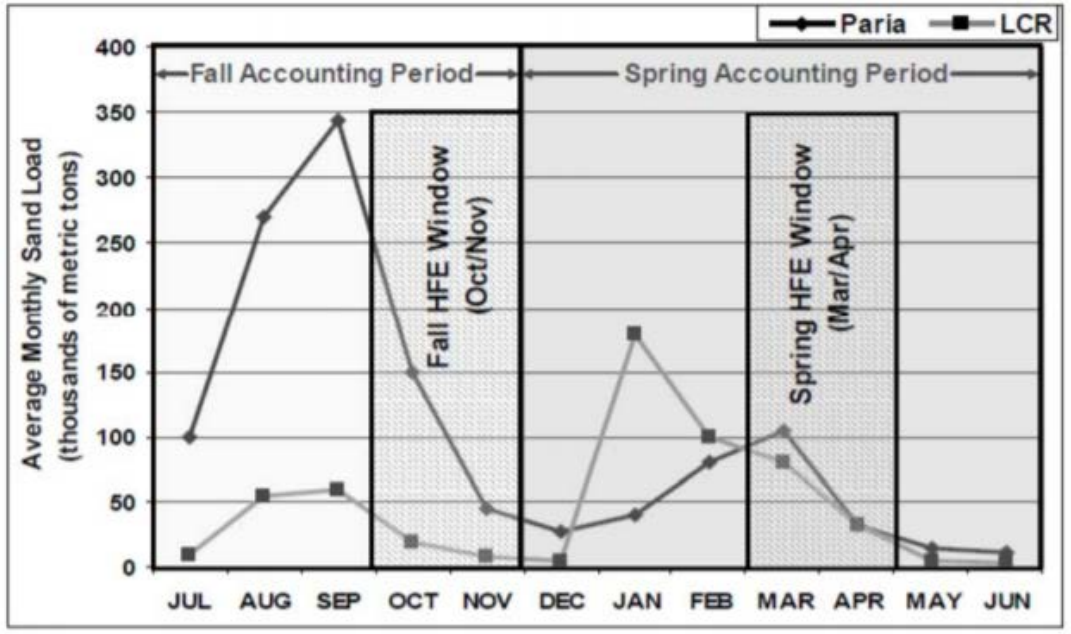
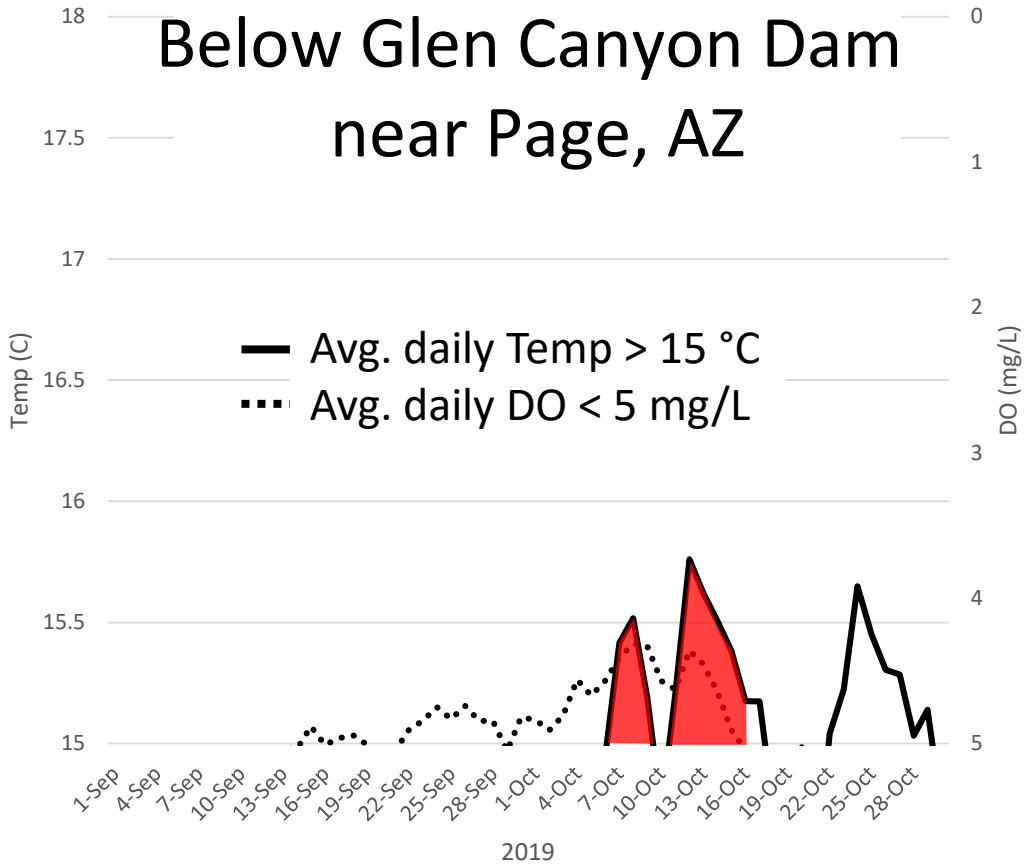


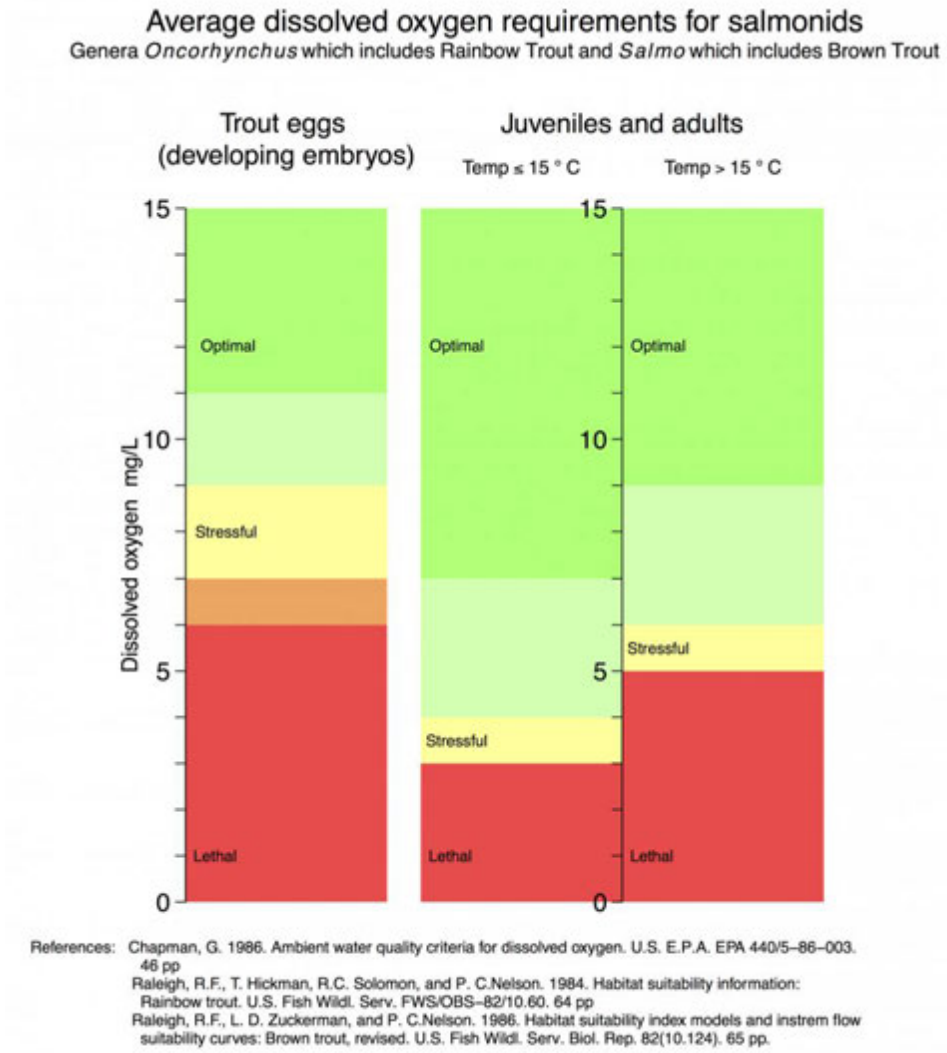
FIGURE 1 Average Monthly Sand Load from the Paria River and Little Colorado River Showing the Fall and Spring HFE Accounting Periods and Implementation Windows

Trout Management Flows Discussion Group

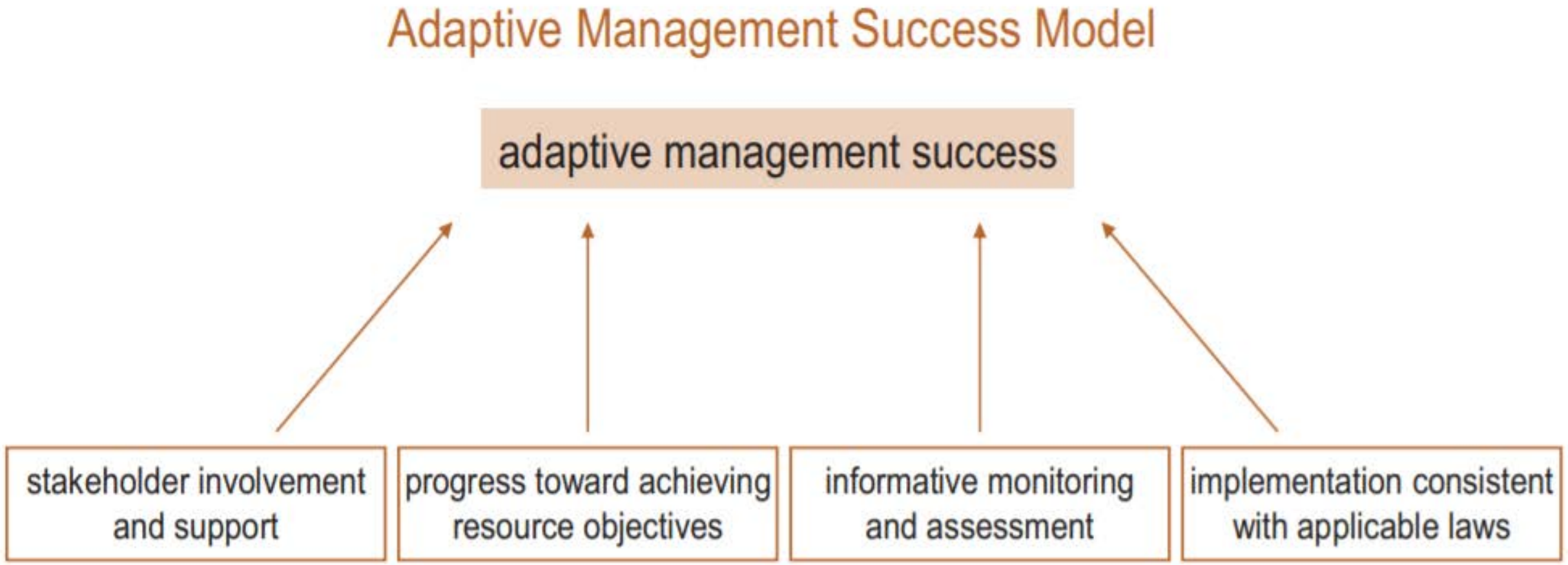
- Reclamation and Service led discussion (NOT DECISION-MAKING!)
- Purpose
  - Discuss process and compliance for TMF's
  - Discuss status of current research efforts to understand them
  - Discuss information needs
- Result
  - Re-acknowledged that tribal consultation is needed
  - Re-acknowledged use of Implementation/Planning Team process, when appropriate
  - More research and discussion needed

Low DO Monitoring and Response





Knowledge Assessment – a tool to help us succeed



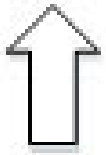
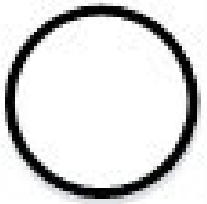
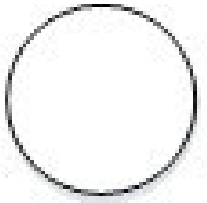
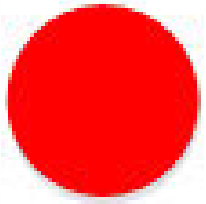
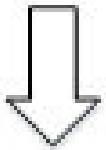
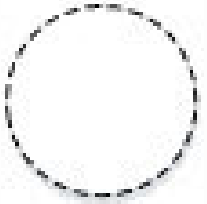
2019-2020 Knowledge Assessment

- Objectives
  - To summarize what is known
  - To assess ongoing needs for monitoring to sustain crucial knowledge
  - To identify critical gaps and weaknesses in this knowledge that require attention
- Assessment themes
  - Status and trend
  - Drivers and constraints
  - Effects of management actions

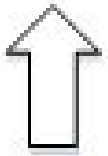
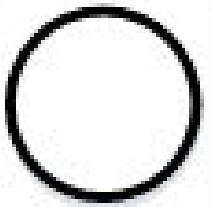
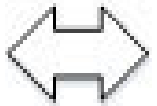
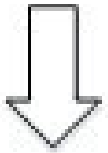
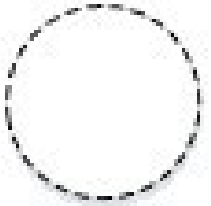
2019-2020 Knowledge Assessment

- Tribal resource assessment needs resolution
- Conducted Dec. 2 – Jan. 8
- Results on the Wiki - gcdamp.com
- 5 of 9 resource topics completed
- To be used for Budget and Work Plan development
- Continue to learn lessons

Status and Trend Symbol Set

Resource Status		Trend in Status		Confidence in Status & Trend Assessments	
	Resource is in Good Condition		Condition is Increasing		High
	Condition Warrants Moderate Concern		Condition is Unchanging		Medium
	Condition Warrants Significant Concern		Condition is Decreasing		Low
	Status Unknown	.....	Trend Unknown	(n/a)	

Drivers and Constraints AND LTEMP Experimental and Management Actions Symbol Set

Strength of Effect		Direction of Effect		Confidence in Strength & Direction Assessments	
	Strong Effect		Increasing Effect		High
	Moderate Effect		No Effect		Medium
	Weak Effect		Decreasing Effect		Low
	Strength of Effect Unknown	.....	Direction of Effect Unknown	(n/a)	

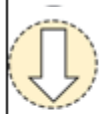
Other Native Fish

Status and Trends – Example

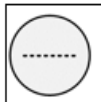
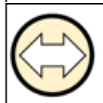
Resource Characteristic	Specific Measure
 Razorback sucker population	Razorback larval CPUE
 Razorback sucker population	Razorback abundance est.
 Flannelmouth sucker population	CPUE or trib abundance
 Bluehead sucker (tribs)	Pop. Growth rate (Tribs)
 Bluehead sucker (Col. River)	CPUE (Col R)
 Native fish community	Native species richness (out of 8) CRE

Drivers and Constraints - Example

Resource Characteristic	Driver or Constraint
 Razorback sucker population; Flannelmouth sucker population, bluehead sucker (Col. River)	Rearing habitat quality (Col. R)
 Razorback sucker population; Flannelmouth sucker population, bluehead sucker (Col. River)	Aquatic food base
 Razorback sucker population; Flannelmouth sucker population, bluehead sucker (Col. River)	Warmwater invasives (catfishes, bass, walleye, sunfish, etc.)

Resource Characteristic	Driver or Constraint
 Flannelmouth and Razorback sucker populations	Spawning habitat
 Razorback sucker population	River/tributary flow variation
 Razorback sucker population; Flannelmouth sucker population, bluehead sucker (Col. River)	Thermal regime

Effects of Management Actions – Example

Resource Characteristic	Specific Measure	Management Action
 Razorback sucker population; Flannelmouth sucker; Bluehead sucker; Native fish community	CPUE	Fall HFEs > 96-hr duration
 Razorback sucker population	Razorback larval CPUE	Macroinvertebrate production flows
 Razorback sucker population; Flannelmouth sucker; Bluehead sucker; Native fish community	CPUE, abundance, pop. Growth rate, species richness	Larval humpback chub head-start program
 Razorback sucker population; Flannelmouth sucker; Bluehead sucker; Native fish community	CPUE, abundance, pop. Growth rate, species richness	Riparian vegetation restoration
 Razorback sucker population; Flannelmouth sucker; Bluehead sucker; Native fish community	CPUE, abundance, pop. Growth rate, species richness	Incentivized harvest

Future TWG Agenda Items

- Budget workshop
- Sediment accumulation in western Grand Canyon
- Bug flow status
- Bird surveys (flycatchers and rails)
- Monitoring metrics?!