

Program Evaluations

August 21, 2025

Some AMWG Charter Reminders

- “The AMWG provides advice and recommendations to the Secretary relative to the operation of Glen Canyon Dam.” (§ 3)
- “The AMWG recommends suitable monitoring and research programs and makes recommendations to the Secretary.” (§ 3)
- “Advise the Secretary in meeting environmental and cultural commitments...” (§ 4.b)
- “Annually review long-term monitoring data to provide advice on the status of resources and whether the AMP goals and objectives are being met.” (§ 4.f)

Some LTEMP ROD Reminders

- “DOI will conduct a comprehensive review after October 1, 2027, to evaluate what has been learned from the experimental studies and an evaluation of resource conditions after 10 years of LTEMP operational experience.” (p. 20-21)
- “...the DOI will hold GCDAMP annual reporting meetings for all interested stakeholders; these meetings will present the best available scientific information and learning from previously implemented experiments and ongoing monitoring of resources.” (p. B-17)

Evaluations Have Been a TWG Discussion Topic

“The TWG's main function is to provide technical assistance to the AMWG...”
(LTEMP ROD p. 14)

Commitment to AMWG to review TWP budget procedures (Aug. 2024, AMWG)

Evaluations

- Key element of adaptive management
- Where we have been to help us decide where we want to be, and how to get there
- Multiple forms, long history (e.g., GCES, NRC, SCORE, KA's, PEP's, AR's, syntheses, evaluations, etc.)

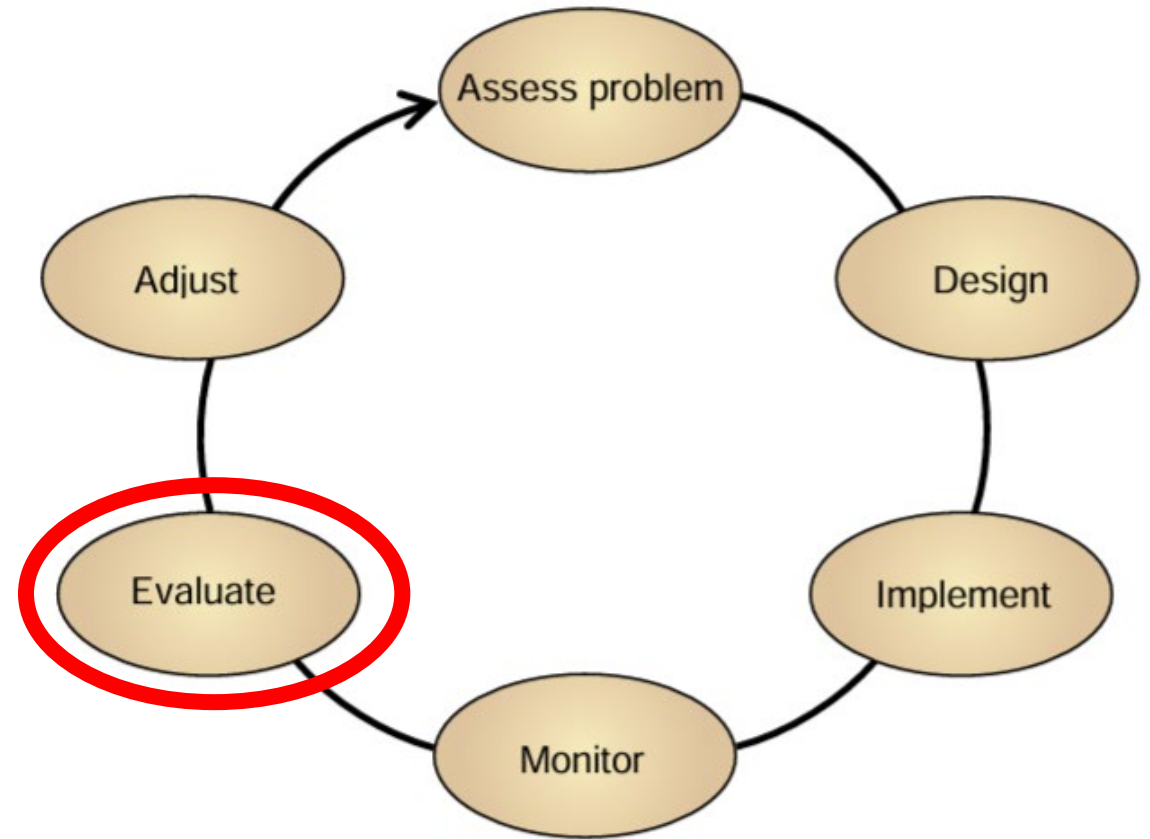


Figure 1.1. Diagram of the adaptive management process.

Williams et al. (2009)

Strategic Science Plan (2009)

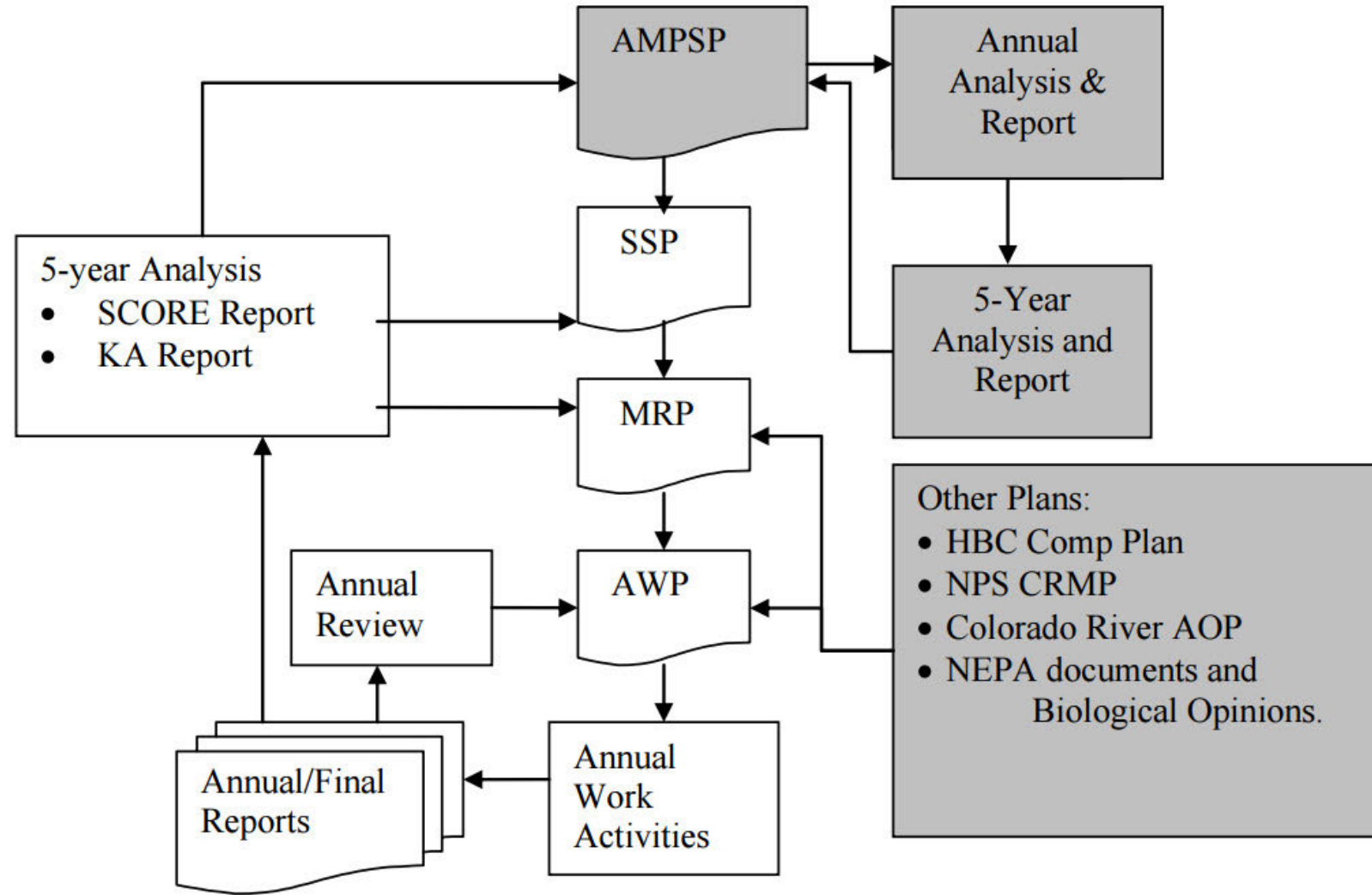


Figure 2. Collaborative science planning and implementation process. The Glen Canyon Dam Adaptive Management Program and the U.S. Department of the Interior have lead responsibility for the shaded boxes. The Grand Canyon Monitoring and Research Center has lead responsibility for the boxes that are not shaded.

Knowledge Assessments in the LTEMP Era

- Intended as part of ARM's prior to developing TWP's and used to evaluate experiments
- Kicked off in 2016
- Continued in 2019
- Amended in 2020 for FLAHG SDF
- Skipped in 2022 (and 2023 after the 1-year continuation to address workload concerns)
- Next up 2026 and for hydropower improvement flows

KA's in the LTEMP Era

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

Desired Outcomes

- A set of simple tables that:
 - Are easily understood by stakeholders
 - Inform work planning and budgeting
- A standard assessment process that can be repeated with minimal effort

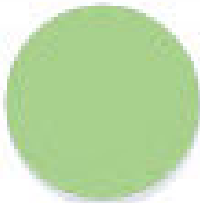
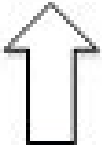
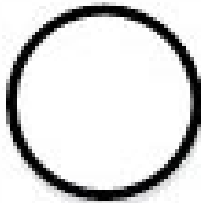
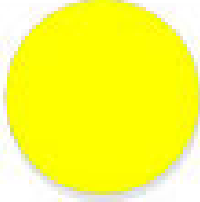
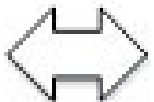
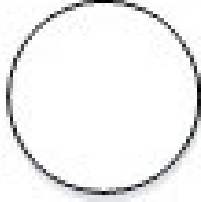
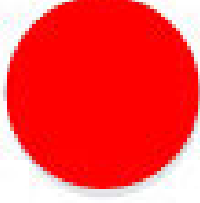
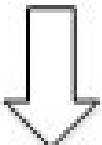


Three Elements

Drivers and Constraints: What environmental factors, including human actions and basic dam operations, most strongly affect resource status and trend, how strong are these effects, and do these effects constrain or drive resource condition toward or away from management objectives?

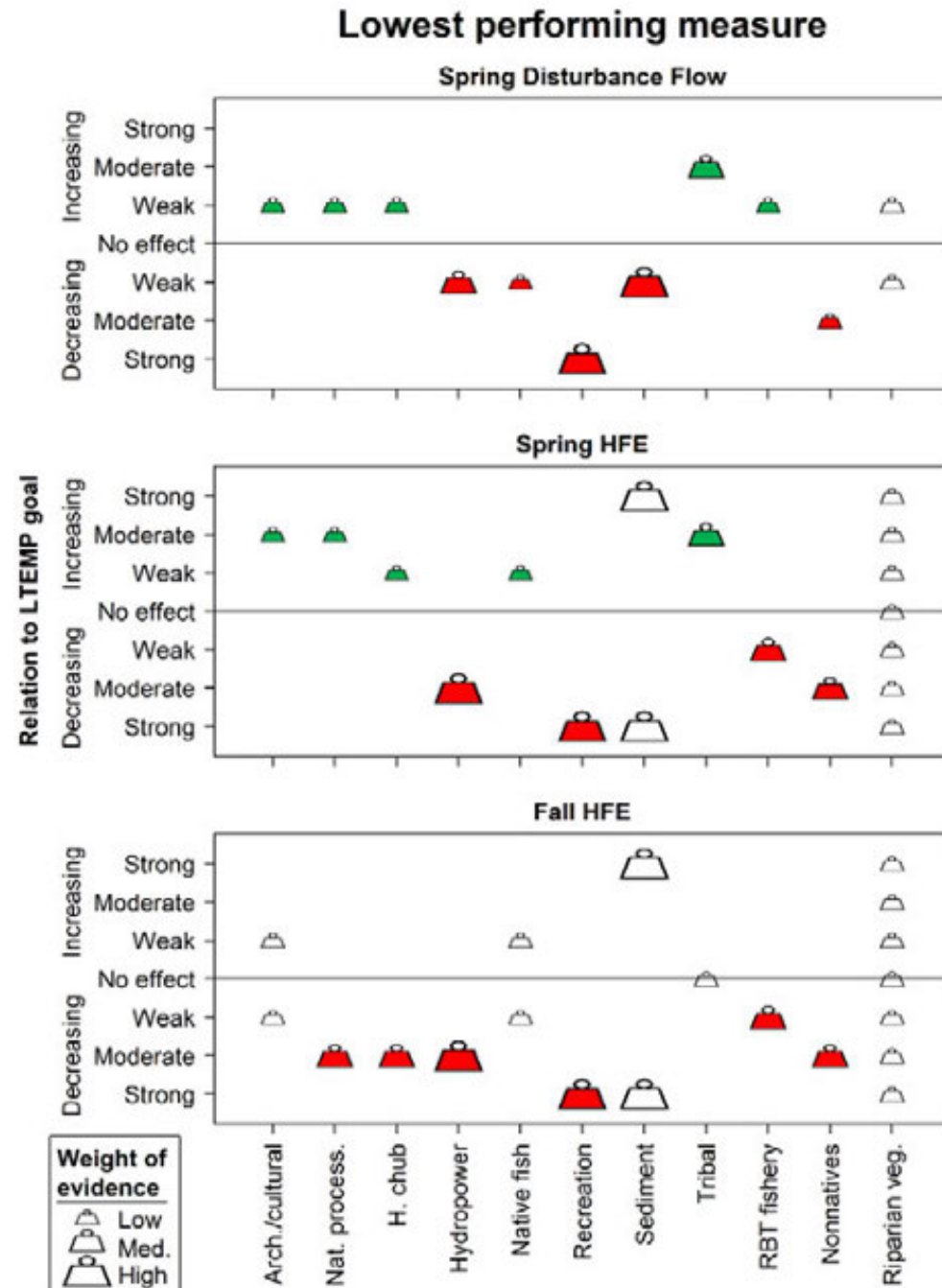
LTEMP Experimental and Management Actions: Which LTEMP experimental and management actions are expected to affect resource condition and trend, how strong are these effects expected to be, and are these effects expected to drive resource condition toward or away from management objectives?

Status and Trend: How closely does the condition of the resource currently approach management objectives and, if the current condition shows any trend, is this a trend toward or away from management objectives?

Status and Trend Symbol Set

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

FLAHG KA for Predicted Effects of Spring Disturbance Flow



Some Challenges to Address

- Differences in world view
- Make complex information accessible
- Repeatable with minimal additional effort
- Metrics quantified but objectives (targets) aren't
- How to resolve scientific and value-based disagreements

Why do this?

- Monitoring metrics are complete, time to evaluate
- To address Budget Ad Hoc Group feedback and make improvements from the previous FY25-27 TWP process
- Fulfills the ROD requirement of a comprehensive 10-year review of LTEMP.

Next Steps

- Continue Annual Reporting Meeting and Annual Report (incorporated monitoring metrics)
- Develop improved TWP procedures
- Develop format for annual evaluations (KA's)
- Develop format for 10-year review

OBTAIN DIRECTION FROM AMWG

Potential Timeline

- 2025
 - Fall TWG – Develop evaluation framework
 - Begin planning for first workshop
- 2026
 - Winter – TWG (AR meeting)/Workshop 1
 - AMWG - status update
 - Spring – TWG/Workshop 2
 - Summer – TWG/Workshop 3
 - AMWG – status update
 - Fall – TWG/Workshop 4
 - Begin planning for FY28-30 TWP
- 2027
 - Winter – TWG (AR meeting)/Workshop 5 (if needed)
 - AMWG – status update
 - Spring – Develop Report
 - Summer – AMWG recommends FY28-30 TWP