

Using Lessons Learned to Build an Adaptive Management Plan to Guide Restoration/Recovery Efforts

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Background

- Nov. 2011 – ISAP recommended the USACE conduct a review of managed flow programs in “Final Report on Spring Pulses and Adaptive Management”
- Sept. 2013 – Literature review “Summary of Flow-Related AM Programs”
- August 2014 – Expanded MRRP AM Team formed to develop AM Plan
- Nov. 2014 to Feb. 2015 – Subset of AM Team built upon initial effort and conducted 9 in-depth AM program interviews

Goals

- Identify best practices
- Identify common challenges faced by AM programs and measures to address them
- Select key take-aways to guide AM Plan development
- Share results with broader audience



AM Programs Interviewed

Platte River Recovery Implementation Program	Chad Smith, Headwaters Corporation
Comprehensive Everglades Restoration Plan	Andy Loschiavo, USACE Jacksonville District
Upper Columbia Salmon and Steelhead Recovery Plan	Derek Van Marter & James White, Upper Columbia River Salmon Recovery Board
Columbia Estuary Ecosystem Restoration Program	Ben Zelinsky, Bonneville Power Administration & Blaine Ebberts, USACE Portland District
Columbia River Channel Improvement Project	Steve Bartell, Cardno ENTRIX, Inc.
Glen Canyon Dam Adaptive Management Program	Marianne Crawford, Bureau of Reclamation
South Bay Salt Pond Restoration Project	Laura Valoppi, United States Geological Survey
San Joaquin River Restoration Program	Ali Forsythe and Katrina Harrison, Bureau of Reclamation
Sacramento-San Joaquin River Delta Plan (Delta Plan)	Lauren Hastings, Delta Science Program

Methods

- Developed a series of topics and specific questions to guide interviews
 - » Administration
 - » Monitoring and Evaluation
 - » Implementation
- Interviewed person(s) responsible for AM in each program
- 1.5 hr. interviews with follow-up calls/emails
- Composed report including interview summaries

Governance Structures for AM

- Of programs interviewed two general governance models were identified
 - » Governance entity with representation from all parties (e.g., Platte, Glen Canyon)
 - » Implementing agencies make decisions with input from stakeholders via public comment opportunities (e.g., CERP)
 - » *Note: MRRP represents a third model: formal stakeholder group providing consensus input to implementing agency decision making*
- Governance entity reports to implementing agencies for final approval of decisions
- Approach to governance often established in enabling legislation and detailed in AM Plan

Decision-Making

- Responsibility for decision-making generally rests with governing entity and/or implementing agency
- Formal processes for decision making
- Charters/agreements
- All plans utilize some type of annual work plan
- Plans for numerical decision criteria; utilize qualitative/directional criteria in interim, given uncertainties



Monitoring and Evaluation

- Purposes for monitoring:
 - » Fill data gaps
 - » Measure performance of management actions
- All governance structures had a science team dedicated to reviewing monitoring and research results and incorporating new knowledge into the AM program
- All programs...
 - » Went through a maturation process to improve effectiveness and address “big questions”
 - » Struggled with fluctuating science budgets
 - » Contained independent science review

Stakeholder Involvement

- Critical to each program, but engagement approach and composition varies
- Some have formal stakeholder committees, whereas others utilize public review and comment processes for stakeholder input
- Unique situations include:
 - » Mechanisms to propose and review projects
 - » Mechanisms for non-voting members to serve on technical committees
 - » Official/non-official mechanisms for disseminating information

Relevance to AM Plan Development – Role of Science

- **Key Take Away**

- » Science and AM programs must be integrated into how the recovery/restoration effort does business
- » Learning must be a priority

- **Integration into an AM Plan**

- » Implement AM as an integral method of conducting daily business rather than tool simply available to decision makers
- » Create a governance structure that is dependent upon scientific information and new learning

Relevance to Development of AM Plan – AM Approach

- **Key Take Away**

- » Most programs use a passive AM approach
- » Active AM experiments used to address critical uncertainties that limit achievement of program goals and objectives

- **Integration into an AM Plan**

- » Use active AM to learn, fill data gaps, and address critical uncertainties (e.g., MRRP Pallid life history stages)
- » Use passive AM to evaluate performance of management actions that have less uncertainty (e.g., MRRP ESH creation and bird population responses)

Relevance to Development of AM Plan – Governance Structure

- **Key Take Away**

- » Each program has a different approach to governance, but all employ basic tenants of AM to establish learning opportunities and make adjustments
- » Stakeholders sit on decision-making body in several programs, but federal agency often retains ultimate authority
- » Several programs have considered or made adjustments to governance structures to better meet program and stakeholder needs
- » Overarching need for open communication within and among agency/stakeholder groups and extensive vetting prior to decisions

- **Integration into an AM Plan**

- » Evaluate potential need to create/alter existing governance structure to enhance the role of AM and science to support decision making, and improve transparency

Relevance to Development of AM Plan – Need for Agency AM Champion

- **Key Take Away**

- » Successful AM programs have an internal agency staff member assigned to facilitate and implement the AM plan

- **Integration into MRRP AM Plan**

- » Proposed governance structure should include a role of for an AM Implementation Manager to coordinate and manage technical work, and support development of AM recommendations based on monitoring and evaluation results

Relevance to Development of AM Plan – Translating Science into Management Recommendations



- **Key Take Away**

- » Several programs have protocols for translating evaluation reports (prepared by scientific experts) into recommendations that can be understood by decision makers and stakeholders
- » Ensure that there are reasonable expectations and timelines for reports to be generated

- **Integration into MRRP AM Plan**

- » Develop requirements for an annual AM report that will translate scientific evaluations into key findings and recommendations for decision makers

Common Challenges of AM Programs

- Maintaining sufficient funding
- Coordinating with various monitoring entities
- Obtaining and sharing program data
- Processing and synthesizing data in timely manner
- Time required for stakeholder engagement, communication, and vetting
- Acknowledging uncertainties and still obtaining buy-in from managers
- Limitations on adjustments due to authorized purposes

Concluding Thoughts

- Detailed elements of AM programs cannot easily be transferred from one application to another
- General principles of AM can be applied and guide the development process; but each application is unique to the circumstances of that particular recovery/restoration effort

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