Establishing and Implementing Adaptive Management for CERP

SFER Working Group and Science Coordination Group

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Presentation Overview

- Background and Definition
- 2010 CISRERP Report
- CERP Adaptive Management Integration Guide
- Integrating Adaptive Management into Existing CERP Processes and Decision-making
- Ongoing Initiatives
- Challenges
- Discussion

Background

- 1999 – Restudy described uncertainty in predicting ecosystem response to restoration projects and the need for an adaptive management approach
- 2000 – in WRDA Congress recognized CERP as a framework for restoration and authorized an Adaptive Assessment and Monitoring Program
- 2003 – Programmatic Regulations (33 CFR 385.31) require development of an adaptive management program and that new information, monitoring, modeling etc be used to refine CERP

Background, cont'd

- 2003 – CERP Monitoring and Assessment Plan (MAP) developed
- 2006 – CERP Adaptive Management Strategy published
- 2009 – USACE guidance that all ecosystem restoration projects are required to have adaptive management plans
- 2010 – Adaptive Management Integration Guide and CERP Guidance Memorandum released

Adaptive Management Framework

- The CERP Adaptive Management Strategy (2006) is a framework for seeking a better understanding of the South Florida ecosystem and using new scientific / technical information to improve the Plan
- The CERP Adaptive Management Integration Guide (2010) provides the details on how to implement adaptive management within the USACE six-step planning process, which governs the planning and implementation of CERP projects

Definition of Adaptive Management

- ***Basic Definition:***
  - ***A structured management approach that links science to decision-making in order to improve the probability of restoration success***

Adaptive Management Principles

- Promote stakeholder engagement, interagency collaboration, and conflict resolution
- Employ a formal science-based management approach using learning to address scientific/technical uncertainties
- Incorporate flexibility and robustness into planning, design, and construction and operations to address uncertainty
- Iteratively incorporate scientific information into the decision-making process to allow for changes as implementation proceeds
- Utilize the most cost-effective approach to maximize ecosystem restoration

CISRERP: Introduction to Chapter 6: Use of Science in Decision Making

"Given the enormous scope and complexity of the restoration effort, the success of the CERP depends on strategic, high-quality, responsive, and sustained science and an effective, adaptive management framework."

CISRERP - Adaptive Management

- Largely has been the purview of RECOVER
- Development of framework and programmatic documents have been an important CERP accomplishment (e.g., Adaptive Management Integration Guide)
- Constructive stakeholder engagement and interagency coordination are key elements of an adaptive management program
- Time to put theory into practice, requiring stronger institutional mechanisms

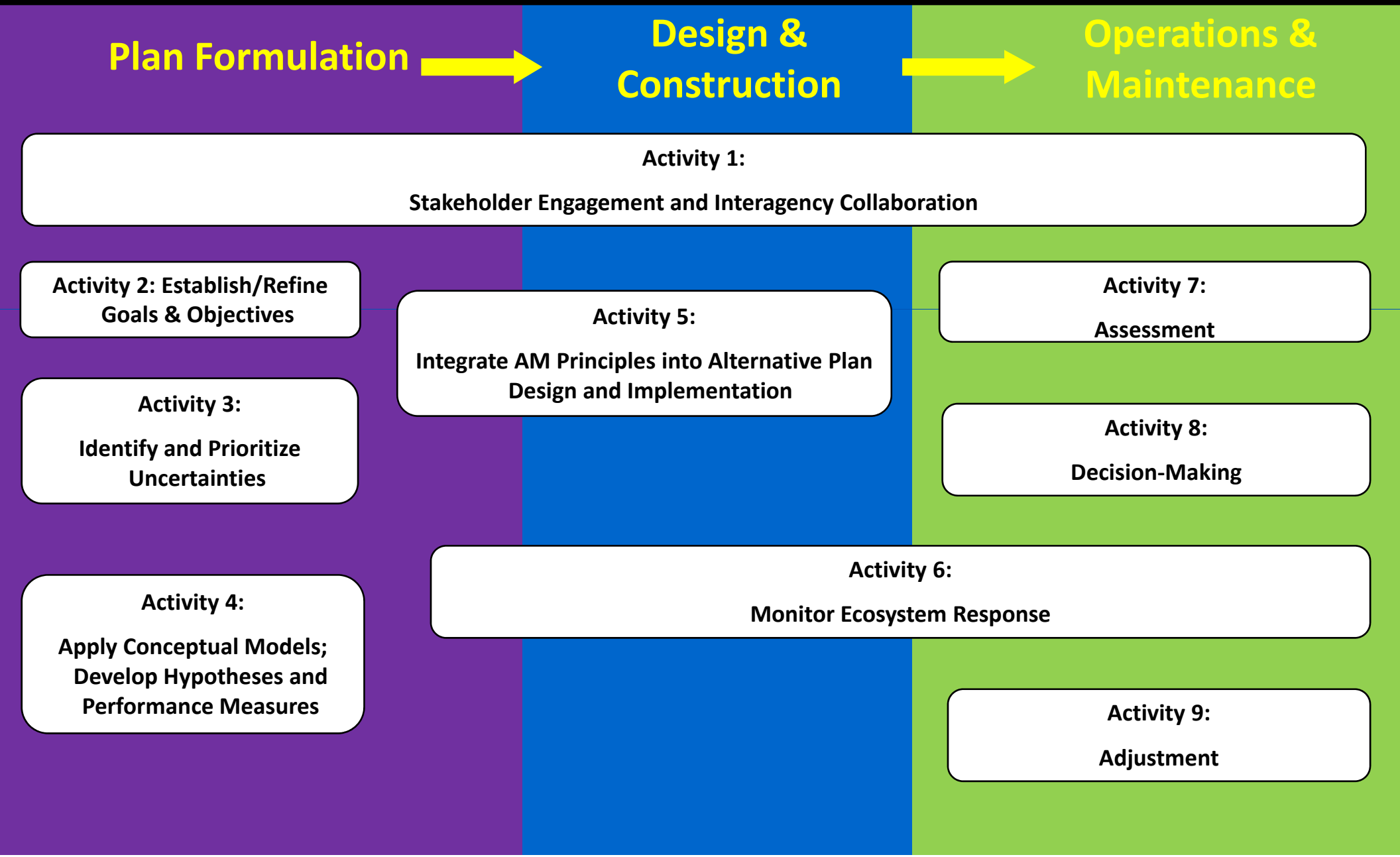
Adaptive Management Integration Guide

- **Program level**
  - **Identify key program uncertainties**
  - **Identify potential actions / management options**
  - **Communicate with managers / policy makers on potential actions / options**

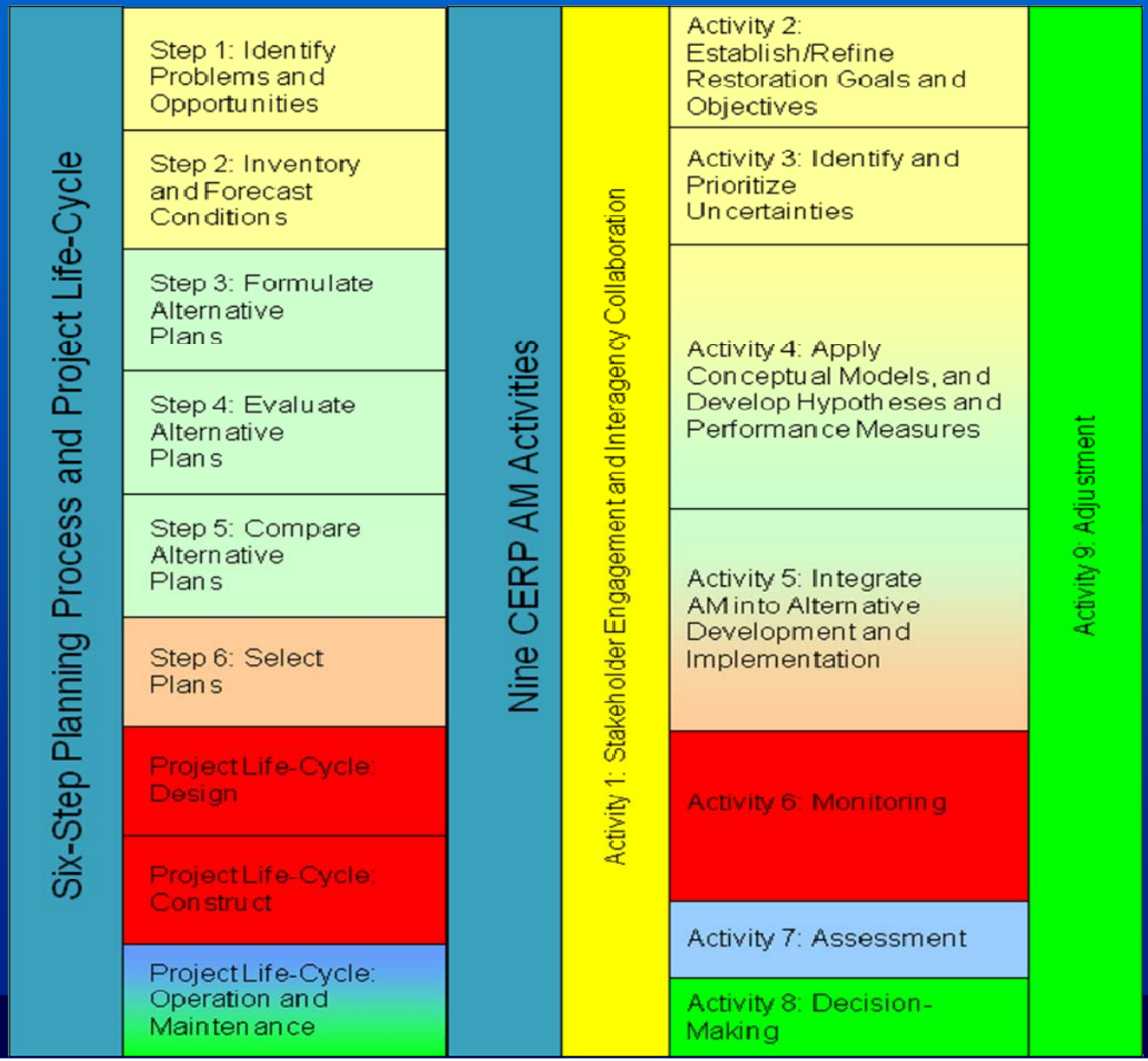
Adaptive Management Integration Guide

- **Project level**
  - **Adaptive management principles applied to USACE six-step planning process**
  - **Early listing of project uncertainties and potential actions**
  - **Early management review and approval**
  - **Interagency teams to evaluate monitoring and provide feedback**
  - **Increased stakeholder engagement**
  - **Goal is to address uncertainties, improve restoration success, avoid delays**

Adaptive Management Activities for CERP



Integration into CERP Process



Current Feedback to CERP Decision Making Process

Action	Identify need for adjustment based on new information	Identify and develop management (mgmt) options	Evaluate options and propose adjustment to management action(s)	Formal public review and comment on proposed action(s)	Finalize decision	Implement management action(s)
	Assessment (Activity 7)	Feedback to Decision Making (Activity 8)				Adjustment (Activity 9)
Entity	Agency science & technical staff	Middle mgmt (DCT)	Upper mgmt (QRB, JPRB)	Tribal, Agency/ public	USACE & SFWMD	USACE & SFWMD

Management Options Matrix

Stressor/ Attribute Metric	Restoration Target (Timeframe)	Management Option 1	Management Option 2	Management Option 3
Oyster Recruitment	Presence/absence adults and larvae (2-3 years)	Seed with juveniles	Stock adults	Change operations to avoid too much or too little flow in key months
Seagrass	Increase biomass and range of *Vallisneria / Halodule* seagrass (2-5 years)	If water quality targets have not been met, then address first	If desired salinity range is met, change operations to adjust flows based on new hypothesis	Implement seagrass plantings in coordination with state, USDOI, and NOAA

Ongoing Initiatives

- ***Program-level***
  - MAP/System Status Report 2009
  - Adaptive Management Integration Guide
  - Scientific Knowledge Gained
  - Predictive performance measures refinement

- ***Project-level***
  - Integration of adaptive management plan components for each project
  - DECOMP Physical Model
  - C-111 Spreader Canal
  - Biscayne Bay Coastal Wetlands
  - Picayune Strand
  - Aquifer Storage and Recovery pilots

Challenges

- Stakeholder engagement and collaboration with non-agency stakeholders
- Integrating applied science
- Clarifying feedback to CERP decision-making process
- Achieving institutional change that embraces adaptive management principles

Stakeholder Engagement and Collaboration

- Federal Advisory Committee Act (FACA) limits the ability of teams (PDTs and RECOVER) to engage in two-way dialogue with non-agency stakeholders
  - ***Option 1***: SFWMD can engage in one-on-one dialogue with non-agency stakeholders
  - ***Option 2***: South Florida Ecosystem Restoration Task Force, Working Group, and Science Coordination Group
  - ***Option 3***: SFWMD Water Resources Advisory Committee
- Maintaining interagency collaboration

Thank you

Discussion