

CEER Adaptive Management/NEPA Integration Panel Session

Missouri River F&W Recovery Program (MRRP)

April Fitzner, PMP
Senior Program Manager

Aaron Quinn – AM Project Manager

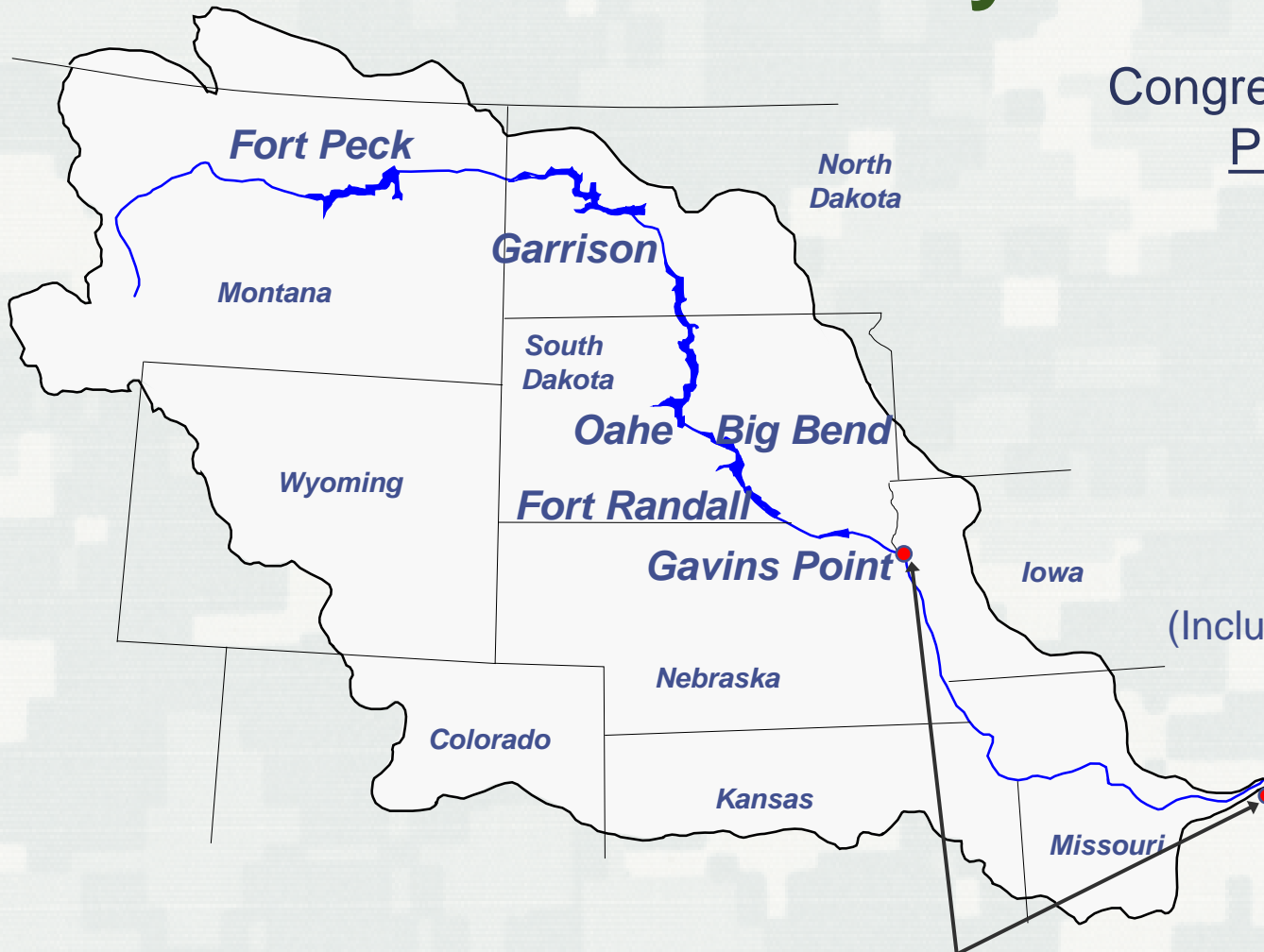
One Team : One River : One Mission



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Missouri River Mainstem Reservoir System



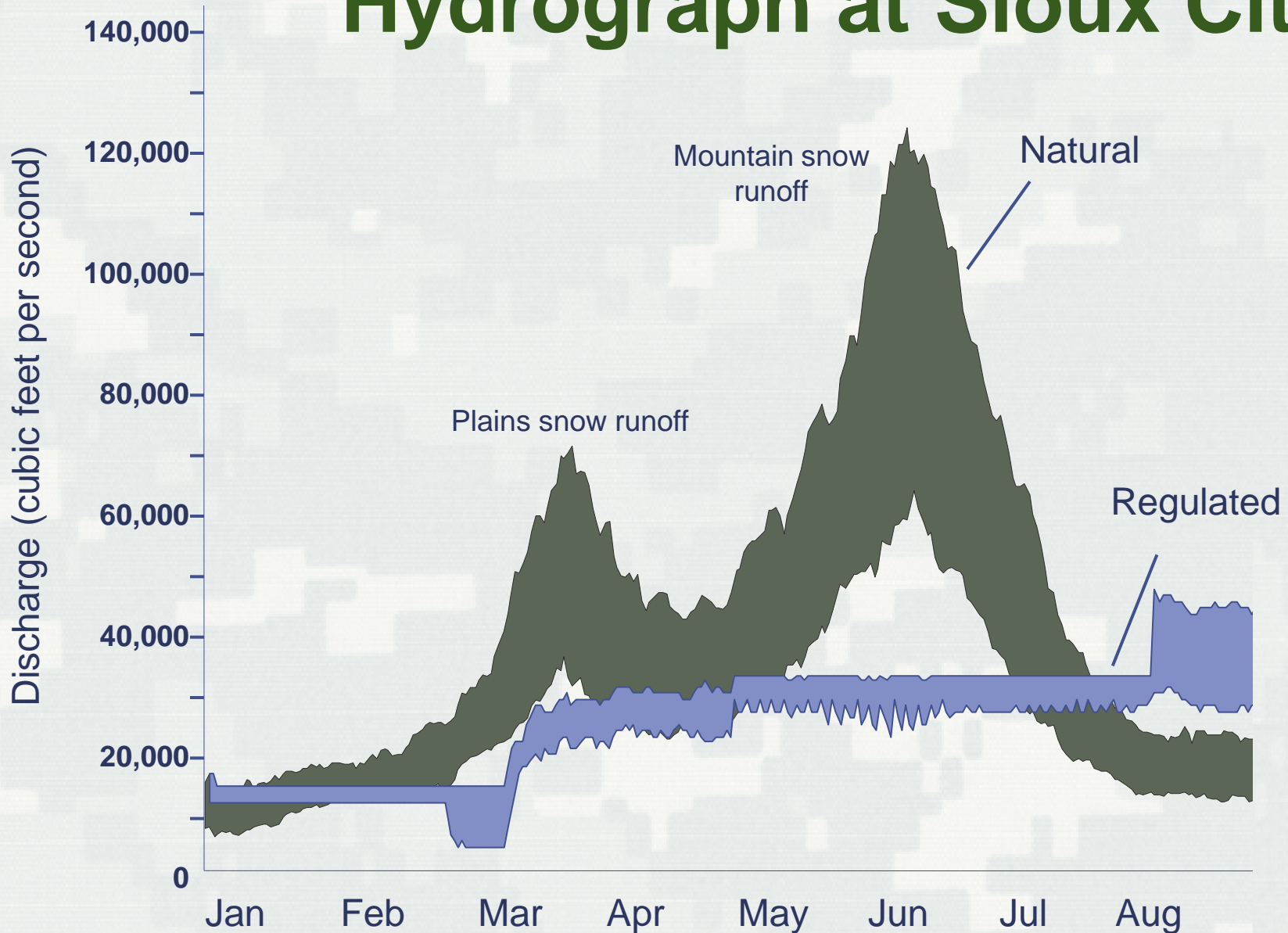
Congressionally Authorized Project Purposes

- Flood Control
- Navigation
- Hydropower
- Irrigation
- Recreation
- Water Supply
- Water Quality
- Fish and Wildlife
(Including endangered species)

**Bank Stabilization and Navigation Project
Sioux City, IA – St. Louis, MO**



Hydrograph at Sioux City



Biological Opinion

- 1990/1993 – initiated / reinitiated consultation with FWS;
 - Informal / formal Sec 7 consultation for next 11 yrs
- 2000 BiOp:
 - Operation of system jeopardized continued existence of pallid sturgeon, least tern and piping plover;
 - RPA would preclude jeopardy
 - Actions: spring flow rise, low summer flows (split navigation season), Ft Peck flow enhancement
- 2003 – Corps requests reconsultation
 - Agree to original RPA but propose replacing certain elements
 - Modified drought conservation plan;
 - Gavins Point summer release schedule;
 - Construct 1200 acres of SWH;
 - Hatchery propagation improvements;
 - Adaptive management (research, monitoring, evaluation and flow tests)
 - Implementation of these measures allow the Corps to continue to operate the system for the 8 Authorized Purposes



Threatened and Endangered Species



Interior Least Tern



Piping Plover



Pallid Sturgeon

(High Uncertainty age 0)

- **Elements of the Biological Opinion**
- Habitat Construction / Channel Modification
- Propagation / Hatchery Support
- Research, Monitoring, and Evaluation
- **Adaptive Management**
- Flow Modifications
 - Release adjustments for nesting birds from May through August
 - Gavins Point spring pulse in March and May for pallid sturgeon
 - Independent Science Advisory Panel determined existing pulse not meeting intended objectives
 - Spring pulse temporarily suspended; will re-examine as part of the Missouri River Recovery Program Management Plan



MRRP Authorities/Mandates

Endangered Species Act

Least Tern
Endangered
1985



Piping Plover
Threatened
1986

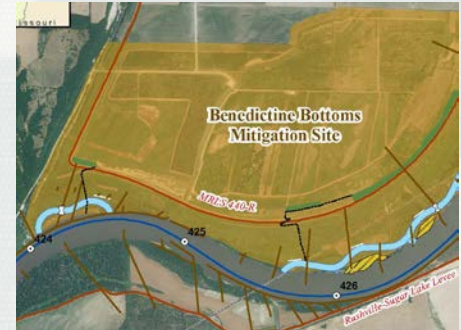


Pallid Sturgeon
Endangered
1990



Water Resources Development Act

BSNP
Mitigation
WRDA 1986
44,900 acres



BSNP
Mitigation
Expanded
WRDA 1999
166,750 acres



MRRIC
WRDA 2007



CHALLENGE: Integrating Adaptive Management into NEPA Planning to Expedite Large-Scale Ecosystem Restoration / Recovery Implementation

MRRP Management Plan - . The 2003 Amended BiOp issued by USFWS required an implementable comprehensive Adaptive Management Plan (AM). In order to do this it is necessary to complete a NEPA analysis to disclose impacts associated with potential AM actions.

Therefore, compliance with this BiOp element is occurring simultaneous to program NEPA assessment.



- Goal of the Management Plan will provide NEPA compliance for current and future management actions and develop a focused and cost effective monitoring and AM process.
- The plan would also utilize information collected from Corps monitoring efforts to date (about 11 years) to evaluate the reasonableness, effectiveness, and the programmatic impacts of current actions and potential future actions to avoid jeopardy
- We are currently in the second year of a three year study



Adaptive Management Concept



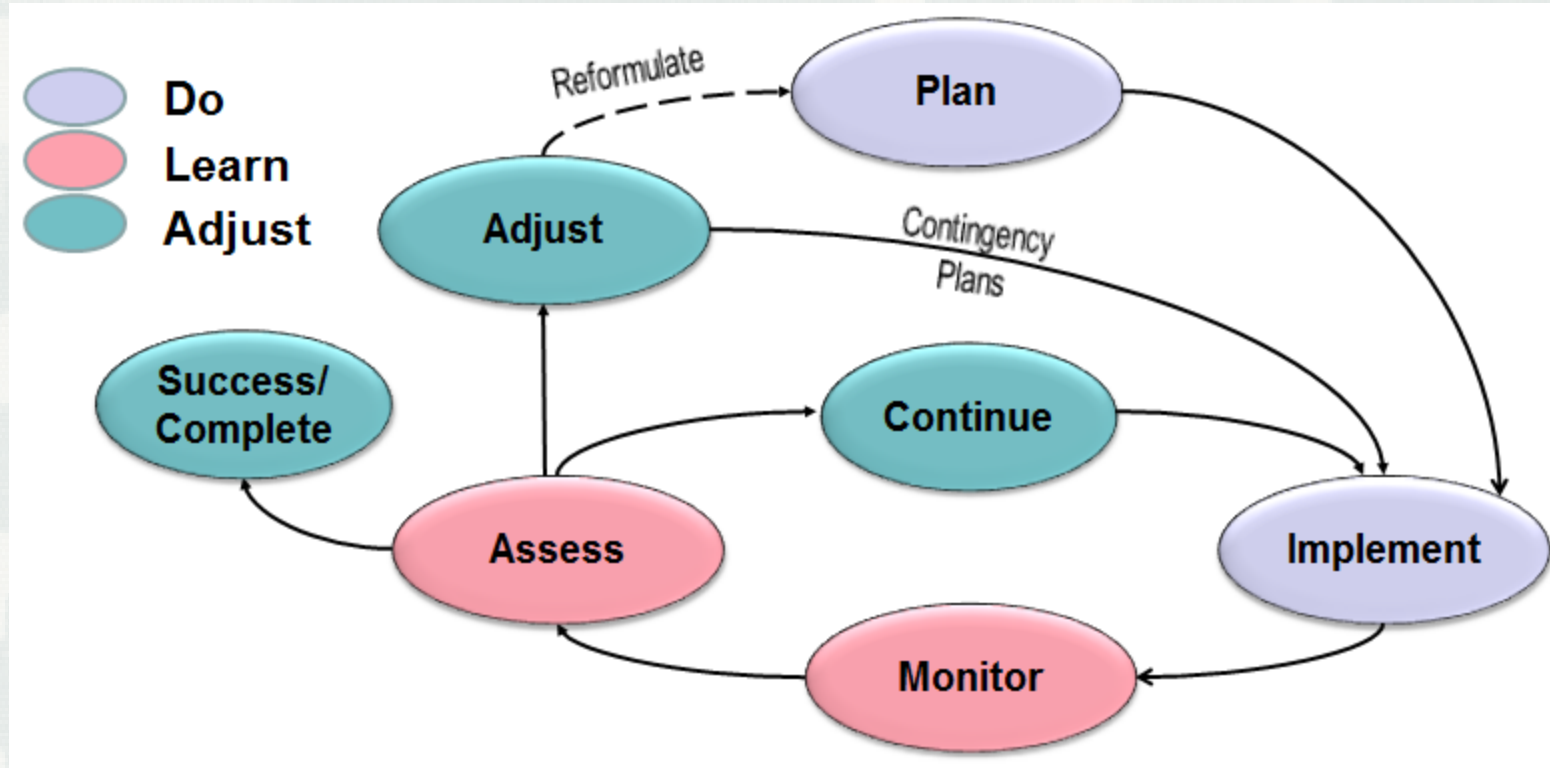
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Objectives

- Provide overview of AM Concept
- Describe Effects Analysis, AM Strategy development, and AM Implementation Phases
- Describe hypotheses evaluation and routing concept



Basic AM Process

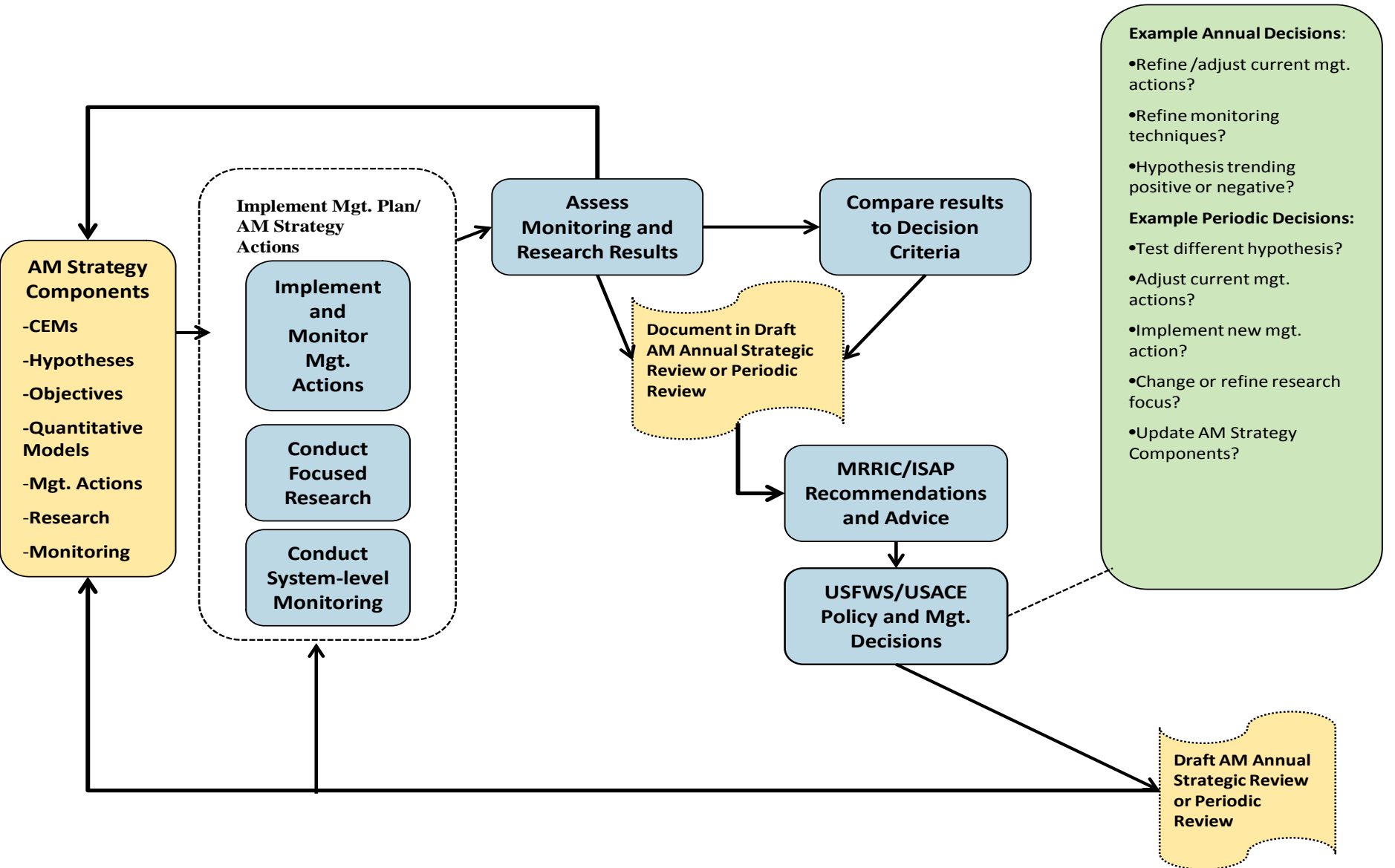


Goals for applying AM

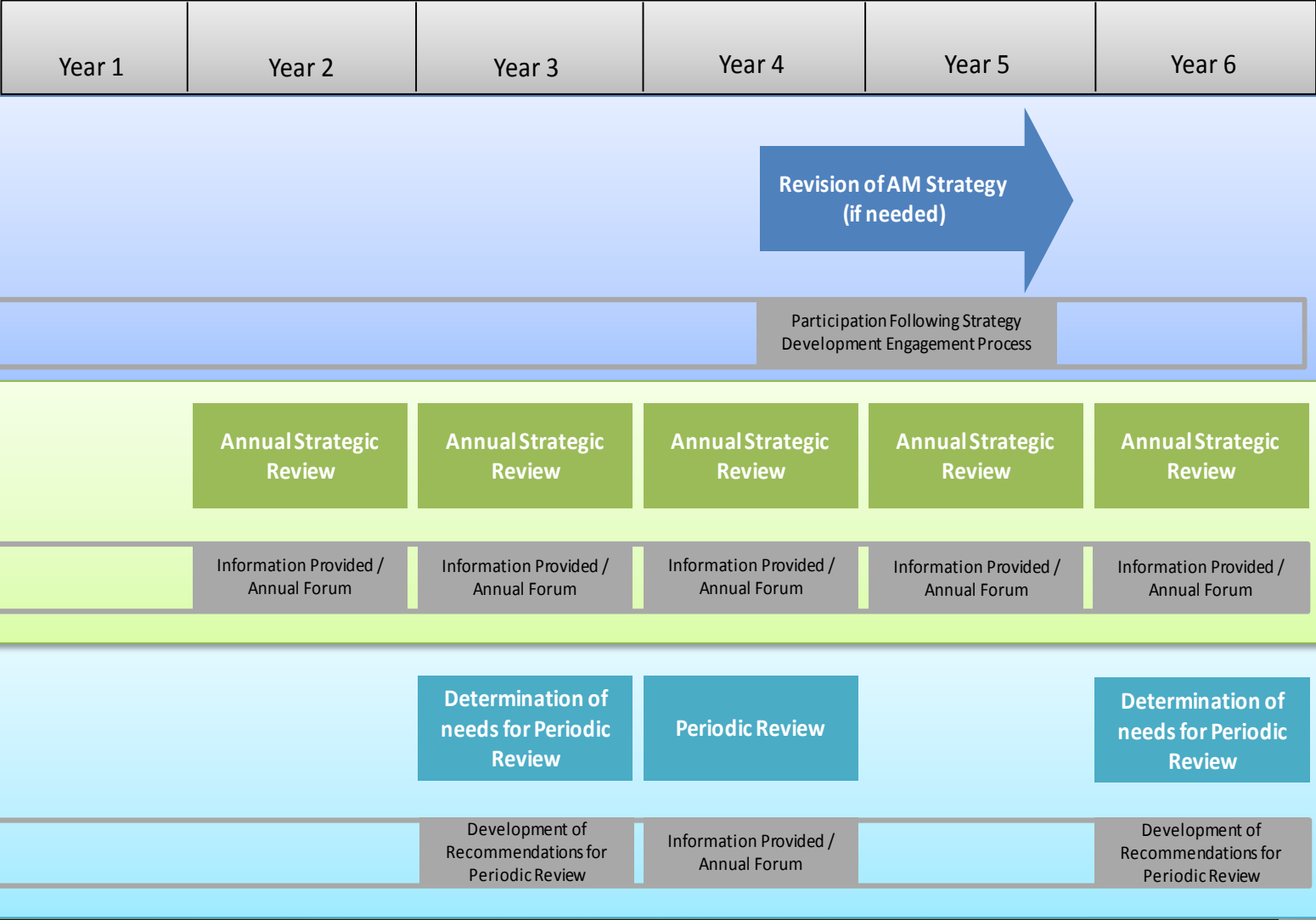
- Involve MRRIC, stakeholders, Tribes and other federal and state agencies in the MRRP process
- Integrate Planning, Implementation, and Monitoring & Investigations activities across the MRRP
- Ensure monitoring and investigations are directly tied to clear, measurable objectives
- Ensure data is collected, analyzed, and documented in a way that results in learning from the outcomes of management actions and influences decision-making regarding management actions
- Ensure that necessary adjustments are made to the MRRP to achieve success in meeting objectives



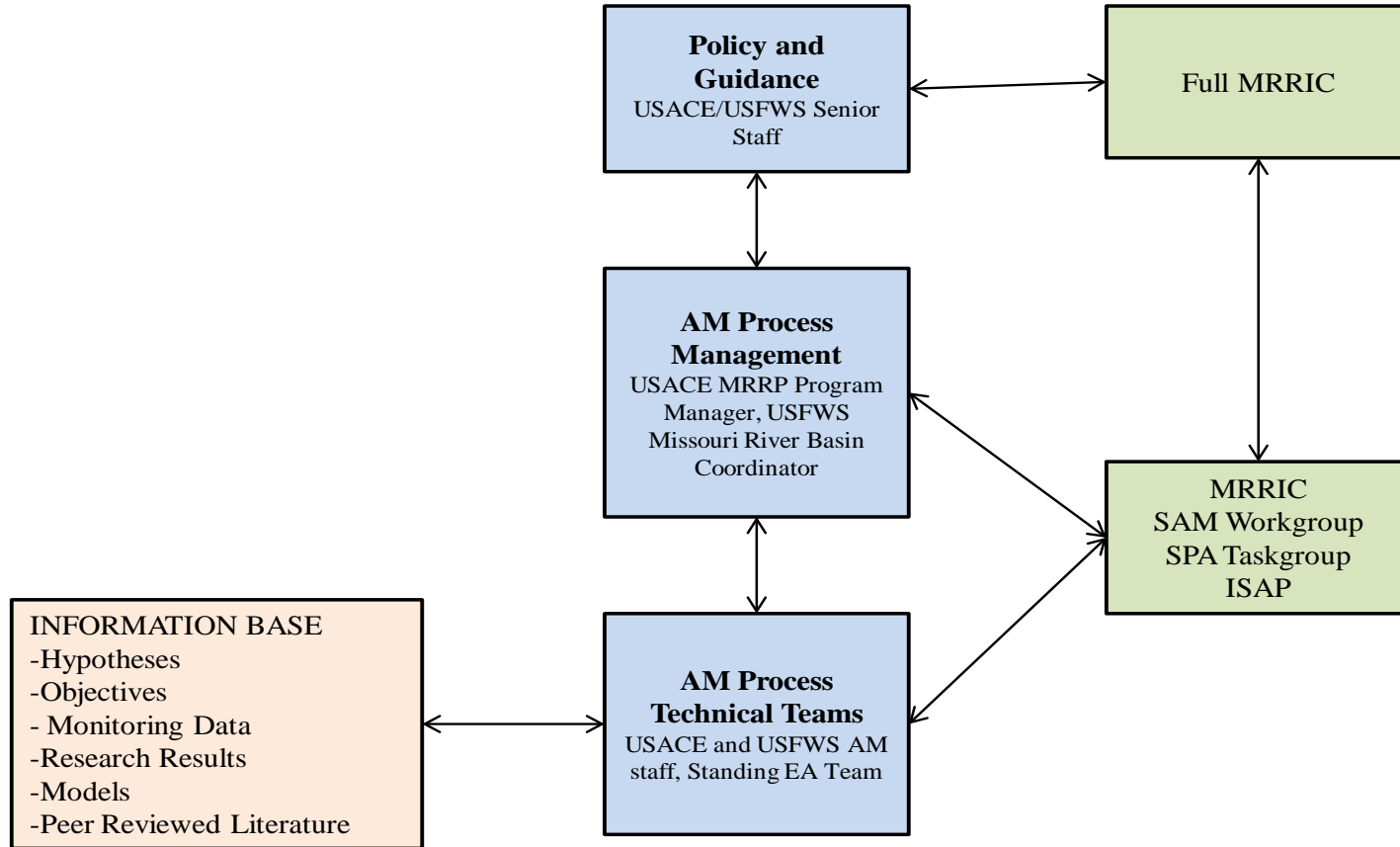
AM Implementation



Annual and 3-5 Year AM Assessment Cycles



General Governance Structure

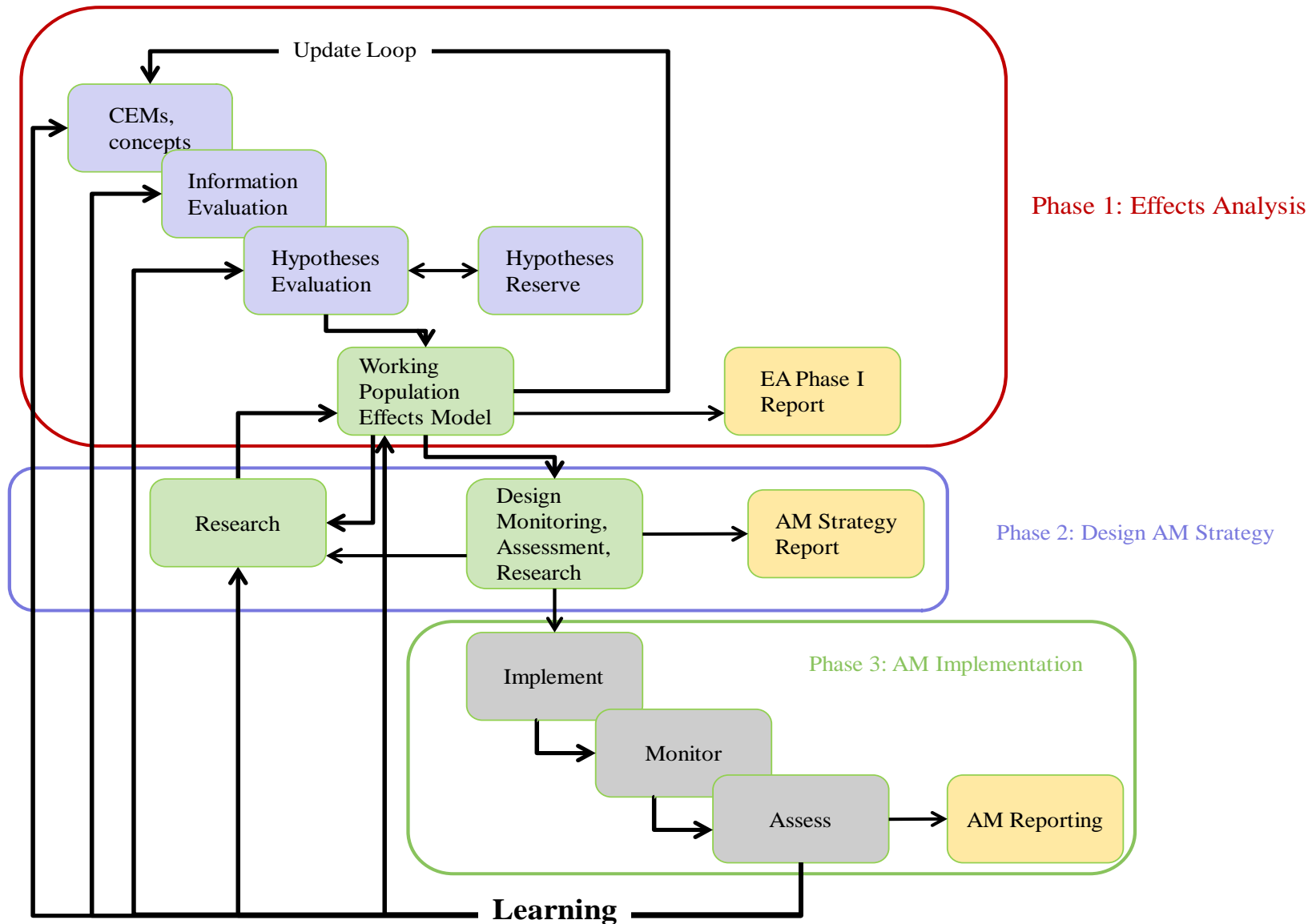


AM Strategy Components

- Fundamental and Means Objectives
- CEMs (Conceptual Ecological Models)
- Hypotheses
- Quantitative models
- Mgt. actions and alternatives
- Decision criteria
- Monitoring and focused research
- Assessment process
- Data Management Plan and Information Base
- Reporting
- Governance and decision-making process



EA, MP, and AM Phases



Decision Triggers

- the AM process must include **clear criteria for adjustments** to project activities in response to information provided by new information from research, monitoring, and implementation of mgt. actions.
- **Commitments** need to be in place to ensure that management will react and change appropriately during the AM process.
- The process must **clearly identify the adjustments that will be made** when monitoring during project implementation indicates that the action is not achieving its intended result, is causing unintended and undesirable effects, or the scale/magnitude of the activity needs to be adjusted to better achieve objectives.



NEPA Challenges

- Uncertainty of future actions due to AM
 - How to adequately assess to get NEPA coverage?
 - Supplemental EAs?
 - Out year budgets
- Scrutiny of funding activities with high uncertainty

Good reference: DOI ESM-10-20 Adaptive Management and NEPA



Wrap Up and Questions?

<http://moriverrecovery.usace.army.mil>



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