

# Incorporating Adaptive Management in Funding Proposals

05 February 2021

Adaptive Management Forum



SACRAMENTO - SAN JOAQUIN

**DELTA** CONSERVANCY

*A California State Agency*

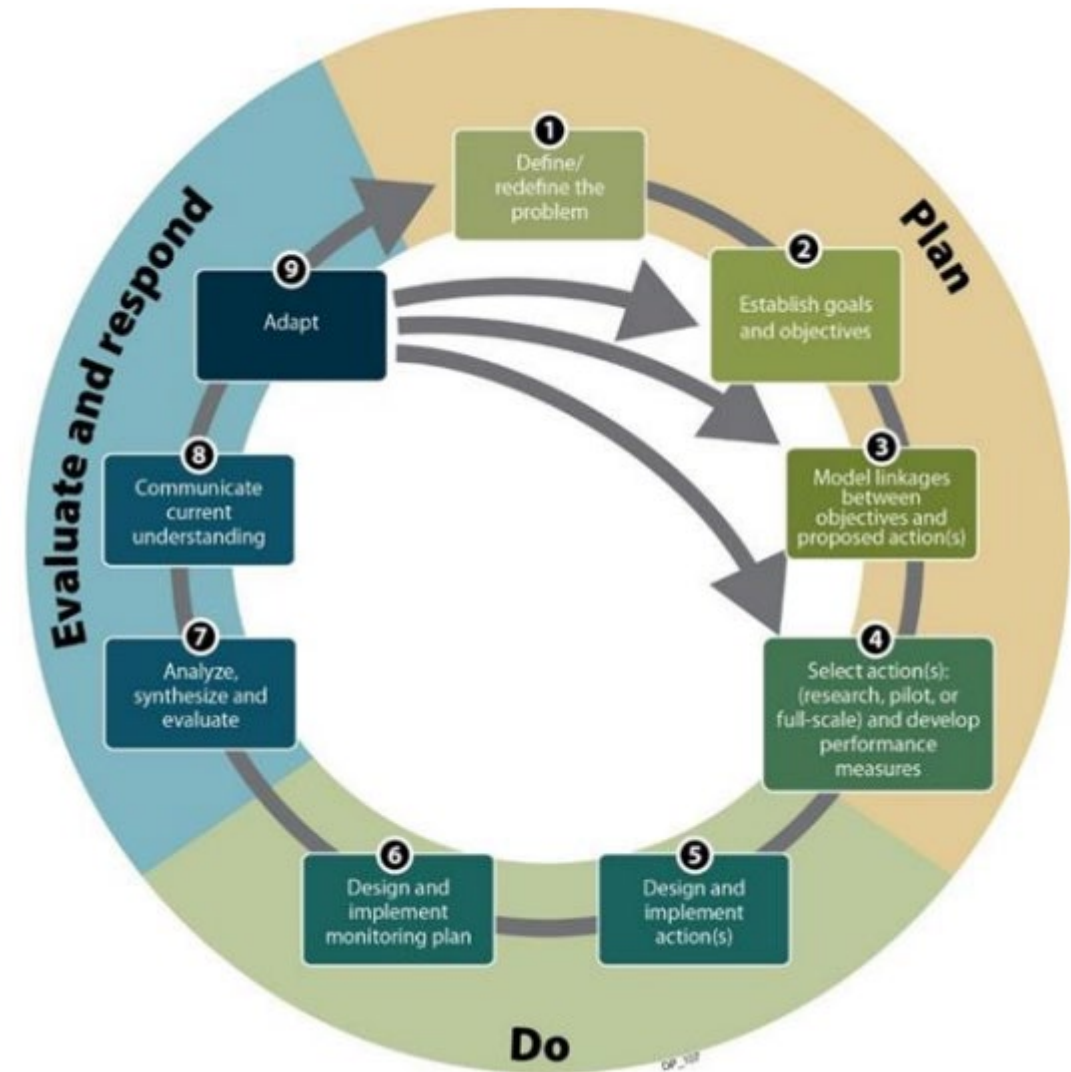
**Sarah Lesmeister, PhD**

# Outline

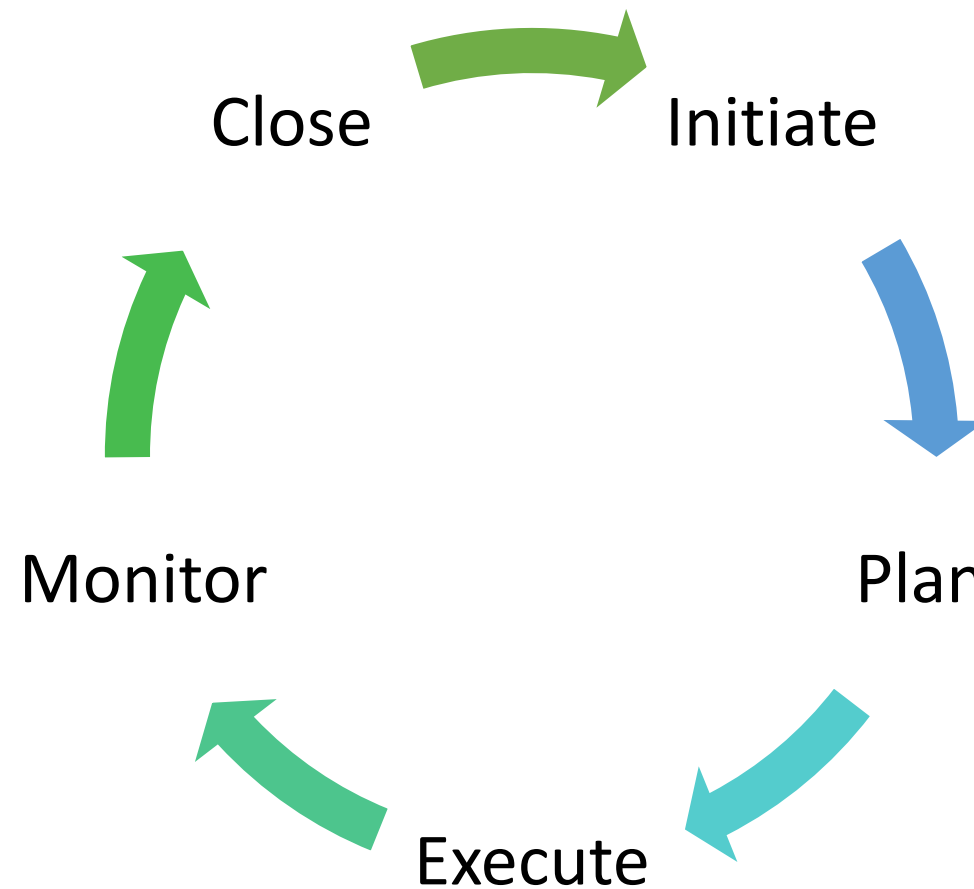
- Introduction
- Barriers to Adaptive Management
- Funding Adaptive Management: The Five W's
- Importance of Adaptive Management
- Example

# Introduction

- Adaptive Management (AM)
  - A science based, structured approach to environmental decision making under uncertain conditions
- Four steps to AM
  - Plan, Do, Evaluate, Respond



# Project Management



# General Barriers for Adaptive Management

- Decision-maker understanding of AM
- Lack of leadership for complex implementation of AM approach
- Funding

Article Carl J. Walters

## Is Adaptive Management Helping to Solve Fisheries Problems?

Adaptive management has been widely recommended as a way to deal with extreme uncertainty in natural resource and environmental decision making. The core concept in adaptive management is that policy choices should be treated as deliberate, large-scale experiments; hence, policy choices should be treated at least partly as a

way to probe the dynamic responses of a system, but more particularly such tests are justified only if the experimental policy represents a possible opportunity to improve management and if historical data are inadequate to show whether the policy has already been tried (inadvertently or deliberately). Counterintuitive responses arise when scientists or managers

# Barriers for Adaptive Management in the Delta

- Environmental Review
- Permitting
- Funding
- 2016 Delta Independent Science Board
  - Biggest difficulty to AM is long-term reliable funding

JULY 2017

**SAN FRANCISCO ESTUARY & WATERSHED SCIENCE**  
Sponsored by the Delta Science Program and the UC Davis John Muir Institute of the Environment

**RESEARCH**

**Facilitating Adaptive Management in California's Sacramento–San Joaquin Delta<sup>1</sup>**

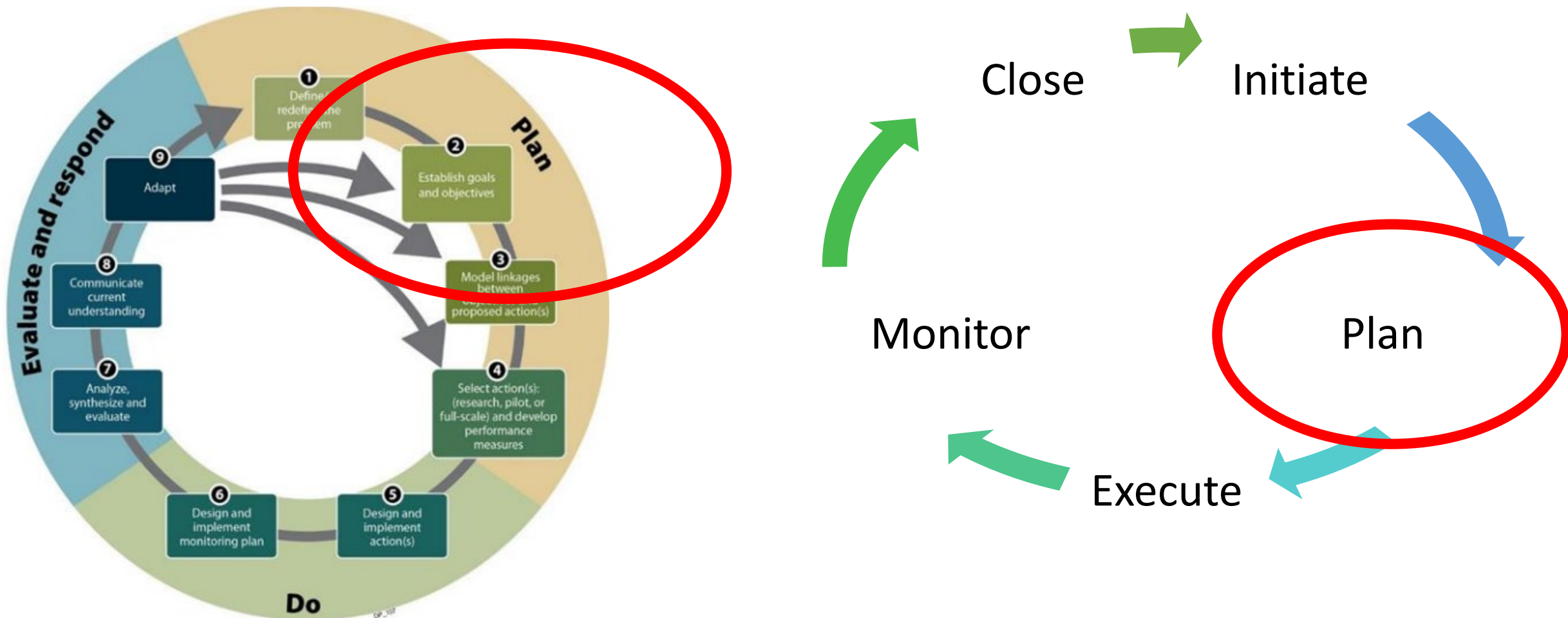
John A. Wiens<sup>\*,1</sup>, Joy B. Zedler<sup>2</sup>, Vincent H. Resh<sup>3</sup>, Tracy K. Collier<sup>4</sup>, Stephen Brandt<sup>5</sup>, Richard B. Norgaard<sup>3</sup>, Jay R. Lund<sup>6</sup>, Brian Atwater<sup>7</sup>, Elizabeth Canuel<sup>8</sup>, and Harindra J. Fernando<sup>9</sup>

Volume 15, Issue 2 | Article 3  
<https://doi.org/10.15447/sfews.2017v15iss2art3>

\* Corresponding author: [jwiens300@gmail.com](mailto:jwiens300@gmail.com)

and examples of its use elsewhere to suggest how the process can be facilitated. Although a highly structured adaptive-management process may not always be needed, several elements are essential.

# How and When to Address AM Funding?





# Funding Requirements

- Delta Reform Act (2009) legally requires AM for all restoration and water management activities in the Delta
  - Cal. WC § 85308(f)
- California Marine Protected Area
  - Cal. FGC § 2852



Incidental Take Permit Application for Long-Term Operation of the California State Water Project



WATER CODE - WAT  
 DIVISION 35. SACRAMENTO-SAN JOAQUIN DELTA REFORM ACT OF 2009 [85000 - 85350] ( Division 35 added by Stats. 2009, 7th Ex. Sess., Ch. 5, Sec. 39. )  
 PART 4. COMPREHENSIVE DELTA PLANNING [85300 - 85350] ( Part 4 added by Stats. 2009, 7th Ex. Sess., Ch. 5, Sec. 39. )

CHAPTER 1. The Delta Plan [85300 - 85309] ( Chapter 1 added by Stats. 2009, 7th Ex. Sess., Ch. 5, Sec. 39. )

**85308.** The Delta Plan shall meet all of the following requirements:

- Be based on the best available scientific information and the independent science advice provided by the Delta Independent Science Board.
- Include quantified or otherwise measurable targets associated with achieving the objectives of the Delta Plan.
- Where appropriate, utilize monitoring, data collection, and analysis of actions sufficient to determine progress toward meeting the quantified targets.
- Describe the methods by which the council shall measure progress toward achieving the coequal goals.
- Where appropriate, recommend integration of scientific and monitoring results into ongoing Delta water management.
- Include a science-based, transparent, and formal adaptive management strategy for ongoing ecosystem restoration and water management decisions.

(Added by Stats. 2009, 7th Ex. Sess., Ch. 5, Sec. 39. (SB 1 7x) Effective February 3, 2010.)



# Funding Sources

- Grants
- Contracts
- Endowments
- Revenue/ Program Costs

STATE OF CALIFORNIA  
**STANDARD AGREEMENT**  
 STD 213 (Rev 06/03)

AGREEMENT NUMBER <b>123456789</b>
REGISTRATION NUMBER [REDACTED]

- This Agreement is entered into between the State Agency and the Contractor named below:  
 STATE AGENCY'S NAME  
 Delta State Agency  
 CONTRACTOR'S NAME  
**Applicant Doing Adaptive Management**
- The term of this Agreement is: January 1, 2018 through December 31, 2018
- The maximum amount of this Agreement is: \$841,274.00 (eight hundred forty-one thousand, two hundred seventy-four dollars and zero cents)
- The parties agree to comply with the terms and conditions of the following exhibits which are by this reference made a part of the Agreement.

Exhibit A – Scope of Work

7 pages

# Funding Groups

- Funding program managers
  - Application requirement
  - Application scoring
- Project managers
  - Outside expertise
  - Training
- Regulators



DELTA STEWARDSHIP COUNCIL



SACRAMENTO - SAN JOAQUIN  
**DELTA CONSERVANCY**  
A California State Agency

# Funding Applicants

- Add in AM funding proposal even if not required
- Use standard language
  - Line item (e.g. 10-20 percent)
- Concrete deliverables associated with AM activities
  - AM Plan
  - Meeting notes

# UC DAVIS



# Importance of Funding Adaptive Management

- The costs of AM are small relative to the costs of unanticipated outcomes or making irreversible mistakes
- Increased likelihood of project success
- Confirm factors that caused (or prevented) project success
- Allows for best available science for decision making



Photo source:  
<https://www.dailydemocrat.com/2020/08/06/bridges-installed-in-yolo-bypass-wildlife-area-to-improve-wetlands/>



# Example

- Nutria Eradication Project
- Goal: Delineate, contain, and eradicate Nutria in California before the population and its distribution become exceedingly large
- AM: Continuous monitoring evaluation and spatial detections of organisms
  - Adjust monitoring based on detections
    - Locations, methodology, etc.

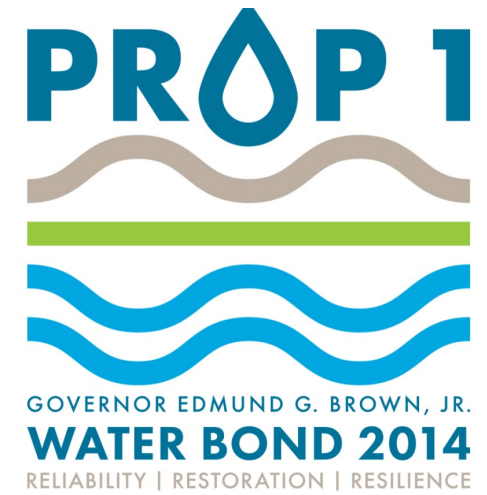


Photo source:  
<https://wildlife.ca.gov/Conservation/Invasives/Species/Nutria/Infestation>,  
Peggy Sells

# Summary

- Funding consistently listed as a main barrier for AM
- AM requires resource planning and funding
- Top-down and bottom-up approaches
- AM reduces project risk and increases likelihood of success



# Questions?



SACRAMENTO - SAN JOAQUIN

---

**DELTA** CONSERVANCY

*A California State Agency*