



## Salton Sea Ecosystem Monitoring and Assessment Plan

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U.S. Geological Survey

### Outline

- Introduction
  - Problem
  - Overarching goal: Implement a data collection, analysis, management, and reporting system to inform and guide management actions for the Salton Sea ecosystem.
  - Objectives:
    - 1) Determine the baseline conditions of the Salton Sea ecosystem
    - 2) Establish baseline standards against which data gathered during long-term monitoring can be compared
    - 3) Identify and prioritize existing data gaps and collect data to fill this void
    - 4) Store, manage, and make publicly available monitoring data in a timely manner
  - Scope



### Outline (continued)

- Retrospective analyses
- Sampling design and strategy
- Episodic and Unpredictable Events
- Data Collection
  - Hydrologic
  - Climatologic/Air Quality
  - Biologic
  - Geologic/Geographic
  - Socioeconomic
- Prioritization and integration
- Data Management



### Outline

- Data Analysis and Assessment
- Reporting
- Quality Assurance
- External Peer Review



### Scripps Proposal Objectives

- define the fault patterns in the Salton Sea and determine the earthquake history, which will provide valuable new insights into earthquake hazards and recurrence intervals for the Salton Sea region
- determine post 1907 sediment character, distribution, and thickness in the Salton Sea to assess susceptibility to wind erosion (air quality concerns) if portions of the sea are allowed to evaporate.
- map the thickness of the Lake Cahuilla sediments overlying the Borrego Formation. If any barrier is constructed across the sea, the weak Lake Cahuilla sediments will need to be excavated in those regions.
- characterize seafloor roughness as well as detect objects on the seafloor (e.g., airplanes, unexploded ordnances, etc.).
- define deltaic structures and biohabitats along northern and southern parts of the sea.



### Scripps Proposal Approach



### Components of a Monitoring and Assessment Plan

- Objectives and Metrics—identified thru local, state, federal, and tribal agencies; scientific experts, NGOs, and general public. Will need to meet regulatory requirements;
- Retrospective analysis—identify, gather, review, existing data;
- Data Collection
  - Hydrologic
  - Biologic
  - Geographic/Geologic
  - Climatologic
  - Socioeconomic



### Components of MAP continued

- Data Management—includes transfer, storage, and access of field measurements—point and spatial, IMS.—build off of existing agreements.
- Data Analyses and assessment—query, retrieval, assessment, hypothesis testing, etc
- Reporting—distribute results to scientists, managers, stakeholders, and the general public;
- Quality Assurance
- Peer Review.



### Uses of Monitoring data

- Assess and document progress towards meeting performance measure targets and interim and long-term goals.
- Detect undesirable system responses as early as possible in order to minimize the adverse effects of these responses;
- Provide a basis for identifying options for improvements in the design and operation of projects and components;



### Uses continued

- Develop reports on the status and progress of the SSRP for the agencies involved, the public, Congress, the California legislature, and stakeholders;
- Evaluate SSRP hypotheses and performance measures and revise conceptual ecological models as appropriate;
- Enhance predictive ability through improvements in simulation models before and after project construction.

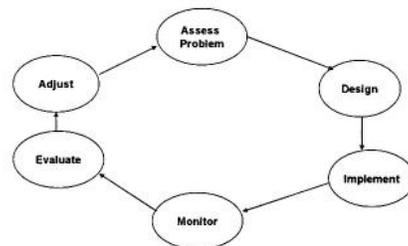


### Steps for Adaptive Management

- Set-up Phase
  - Stakeholder involvement
  - Objectives—id clear, measurable, agreed-upon
  - Management actions—id set of pot mgmt actions
  - Models—id models that characterize hypotheses
  - Monitoring plans—design & implement
- Iterative phase
  - Decision making—select mgmt actions
  - Follow up monitoring—track system responses
  - Assessment—improve understanding
  - Iteration



### Adaptive Management



## Template for Content Slide

- Background color is the RGB equivalent of “dark blue” from the USGS color palette (specified in PowerPoint)
- Identifiers on the title and content slides are specified to print black when printing to a B&W printer

