



# South Bay Salt Pond Restoration Project

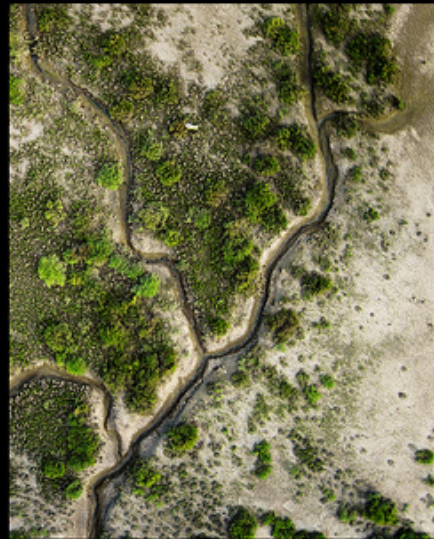
*Restoring the Wild Heart of the South Bay*



April 2008



September 2009



May 2010

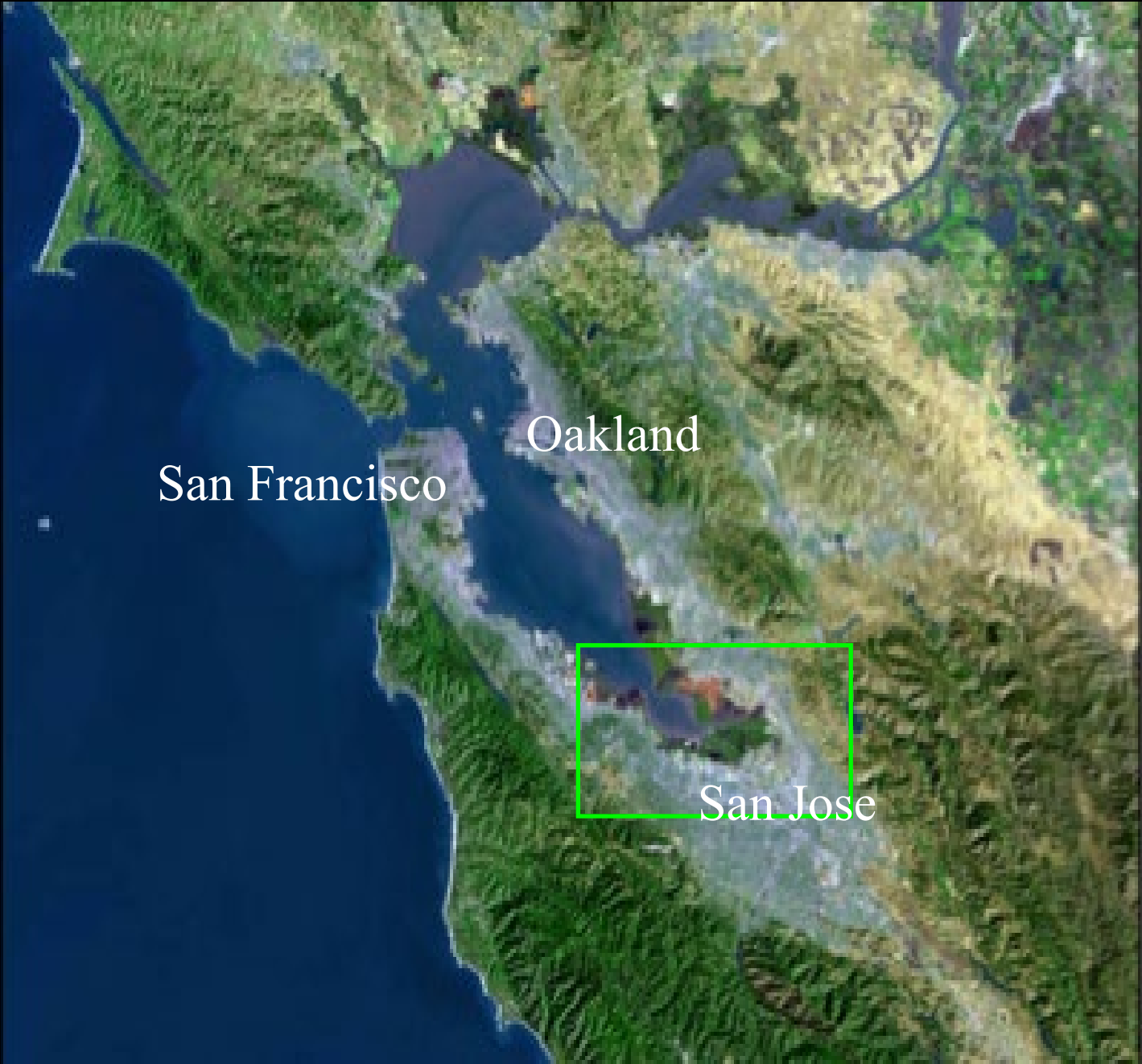


October 2010

SALT POND A21 SOUTH BAY SALT POND RESTORATION PROJECT

Kite aerial photographs of a small channel in the northeast corner following the 2006 breach to tidal flow. Field of view is ~ 120 feet. . C. Benton

**John Bourgeois, Former Executive Project Manager**



San Francisco

Oakland

San Jose

# 2003 Transfer: A Public/Private Partnership

- 16,500 acres
  - 15,100 in South Bay
  - 1,400 along Napa River







# Silicon Valley



# Key uncertainties

- Wildlife use of changing habitats
- Habitat evolution and sediment dynamics
- Mercury methylation
- Water quality
- Invasive species
- Public access
- Infrastructure support
- Sea level rise and climate change



# Ecological Trade-offs

- Tidal Marsh species vs. Salt Pond species



# Adaptive Management Restoration

Phased implementation of  
Project

Amount of  
tidal marsh  
restored

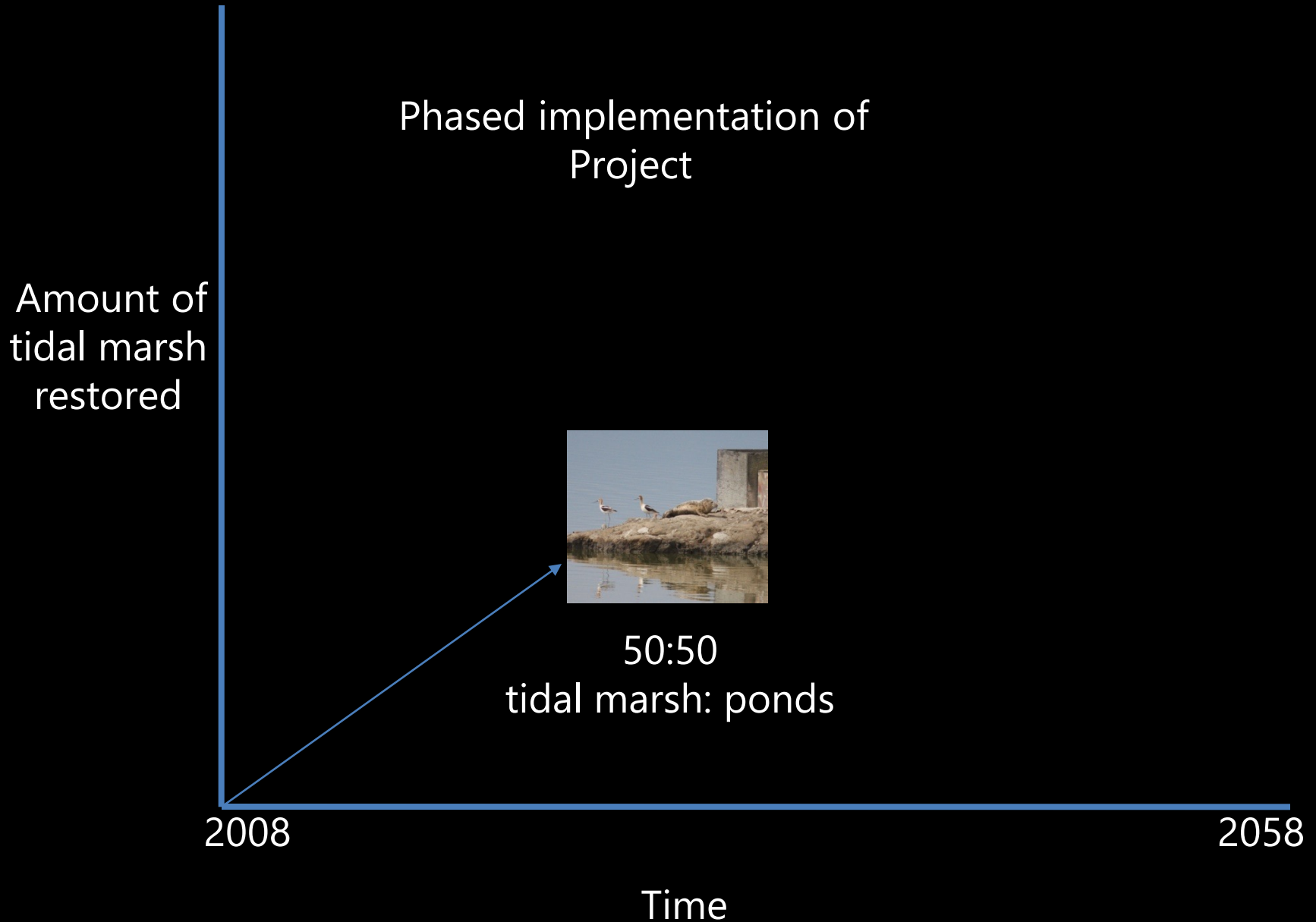
2008

2058

Time

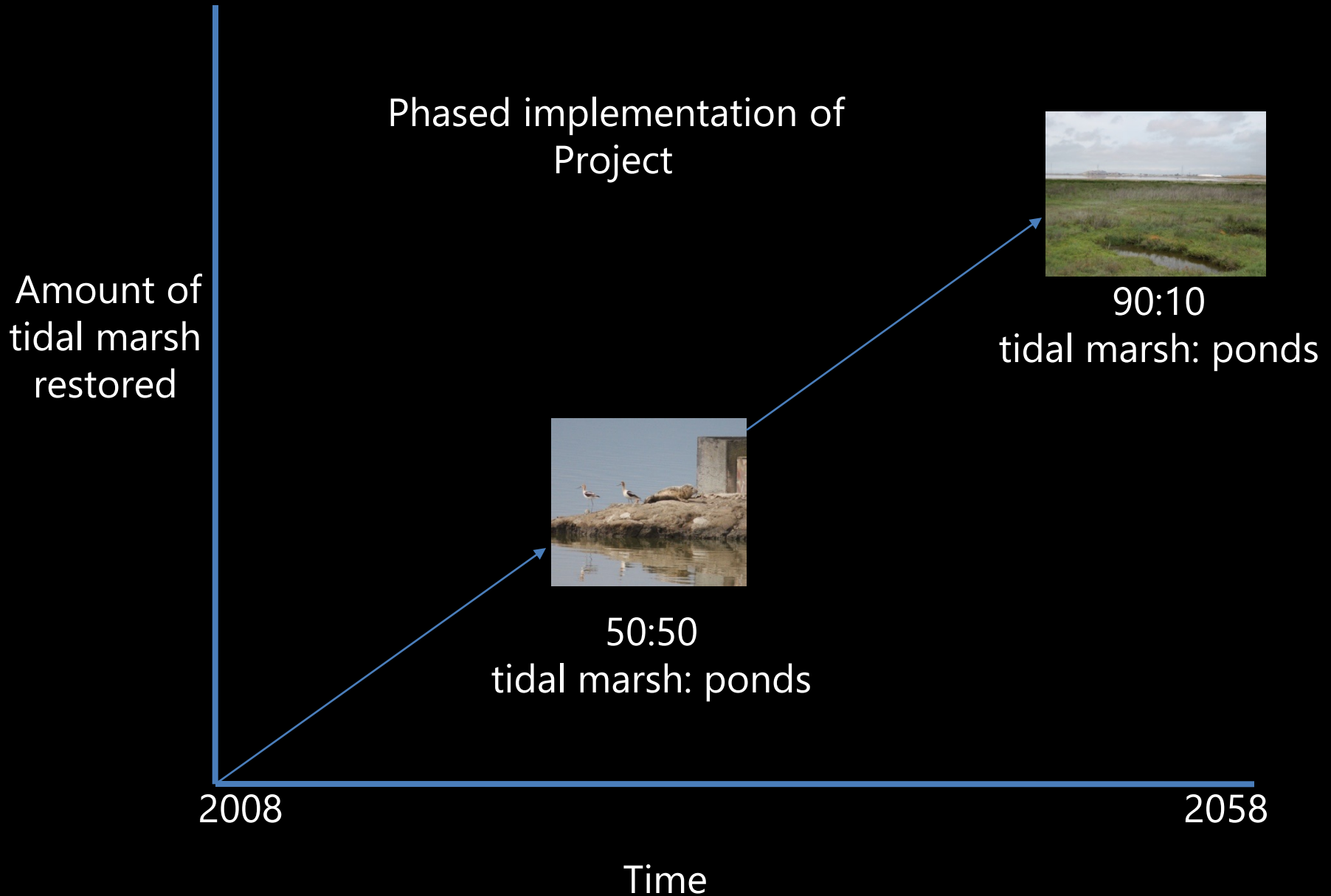


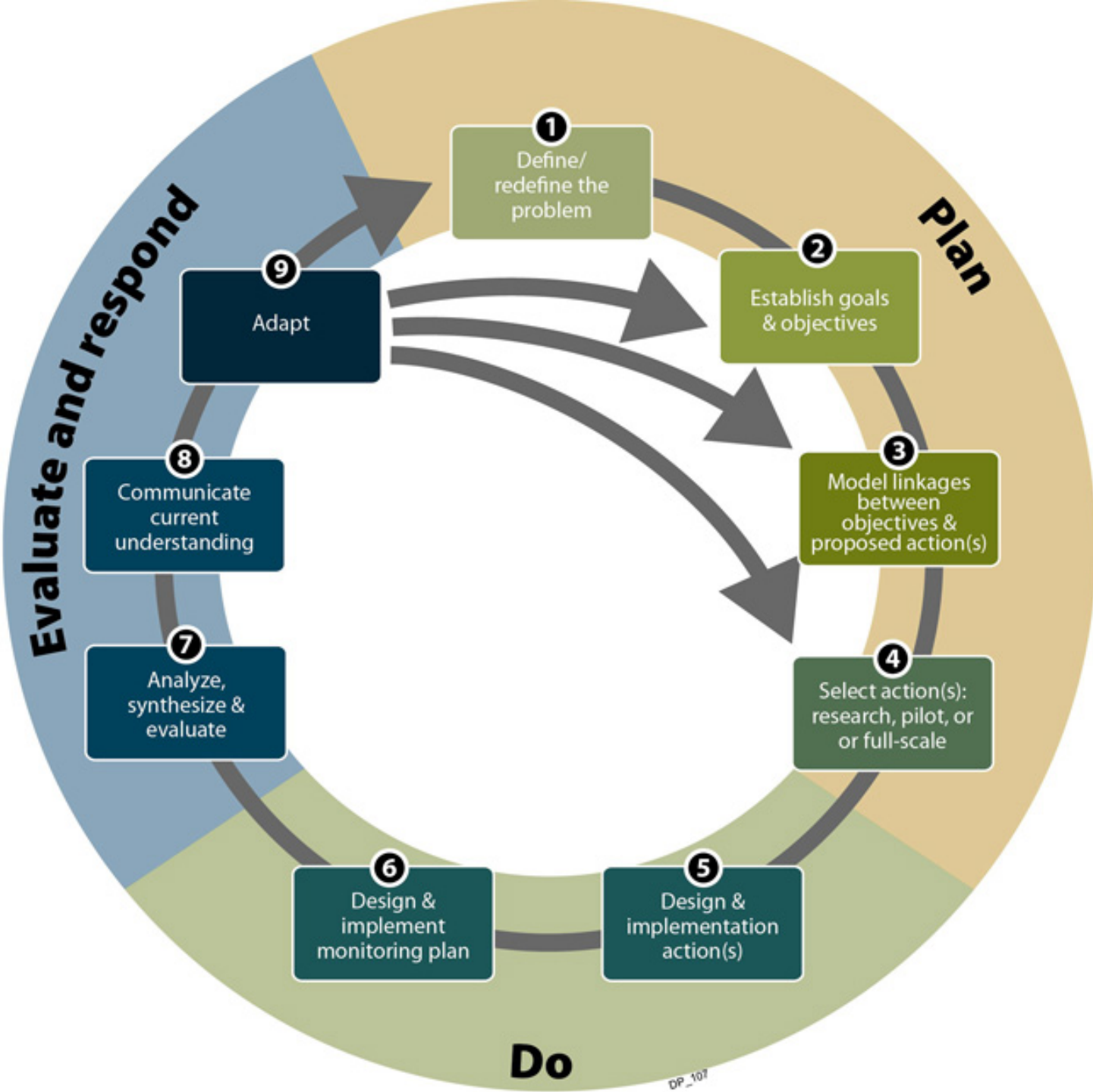
# Adaptive Management Restoration



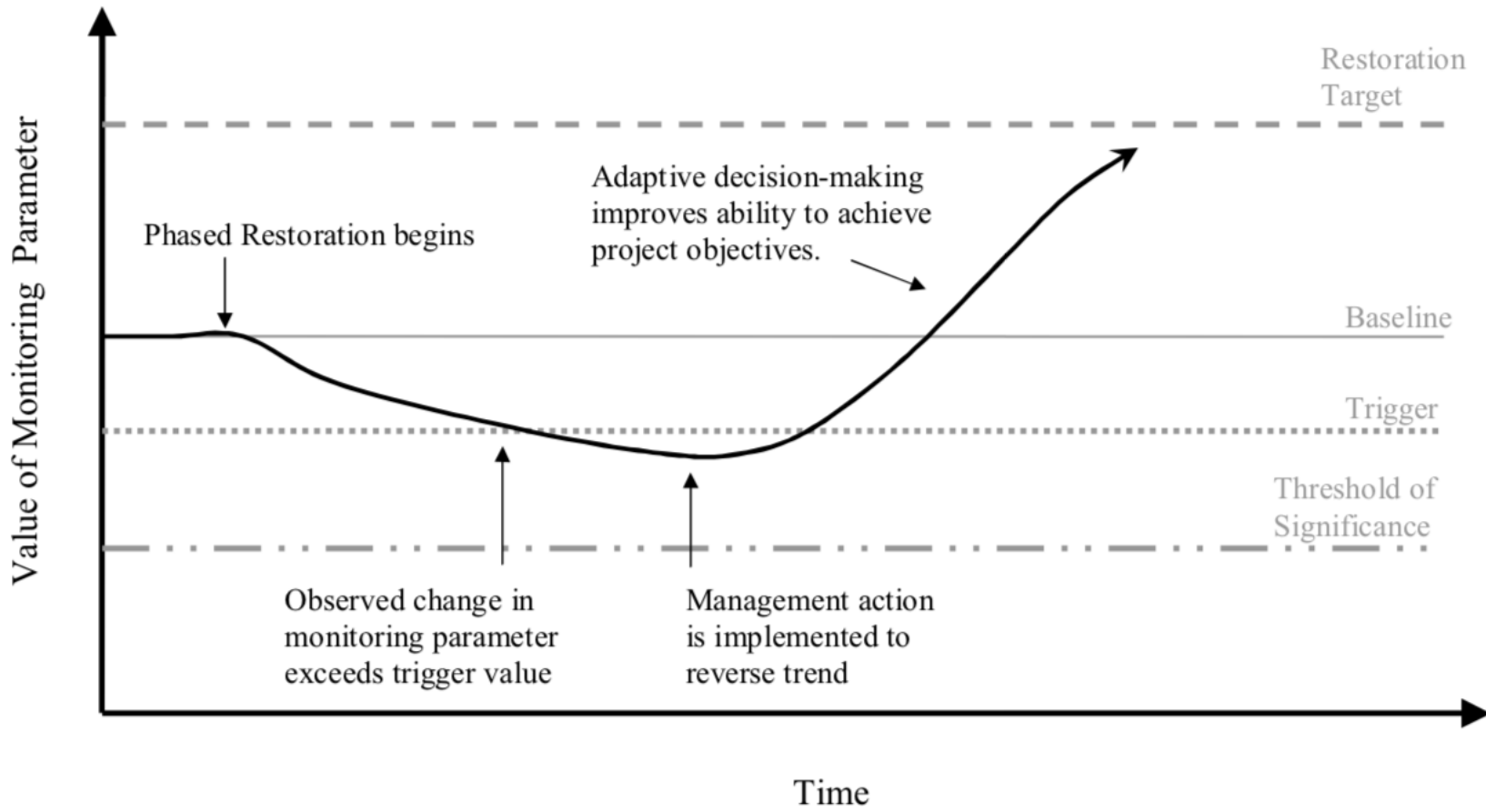


# Adaptive Management Restoration

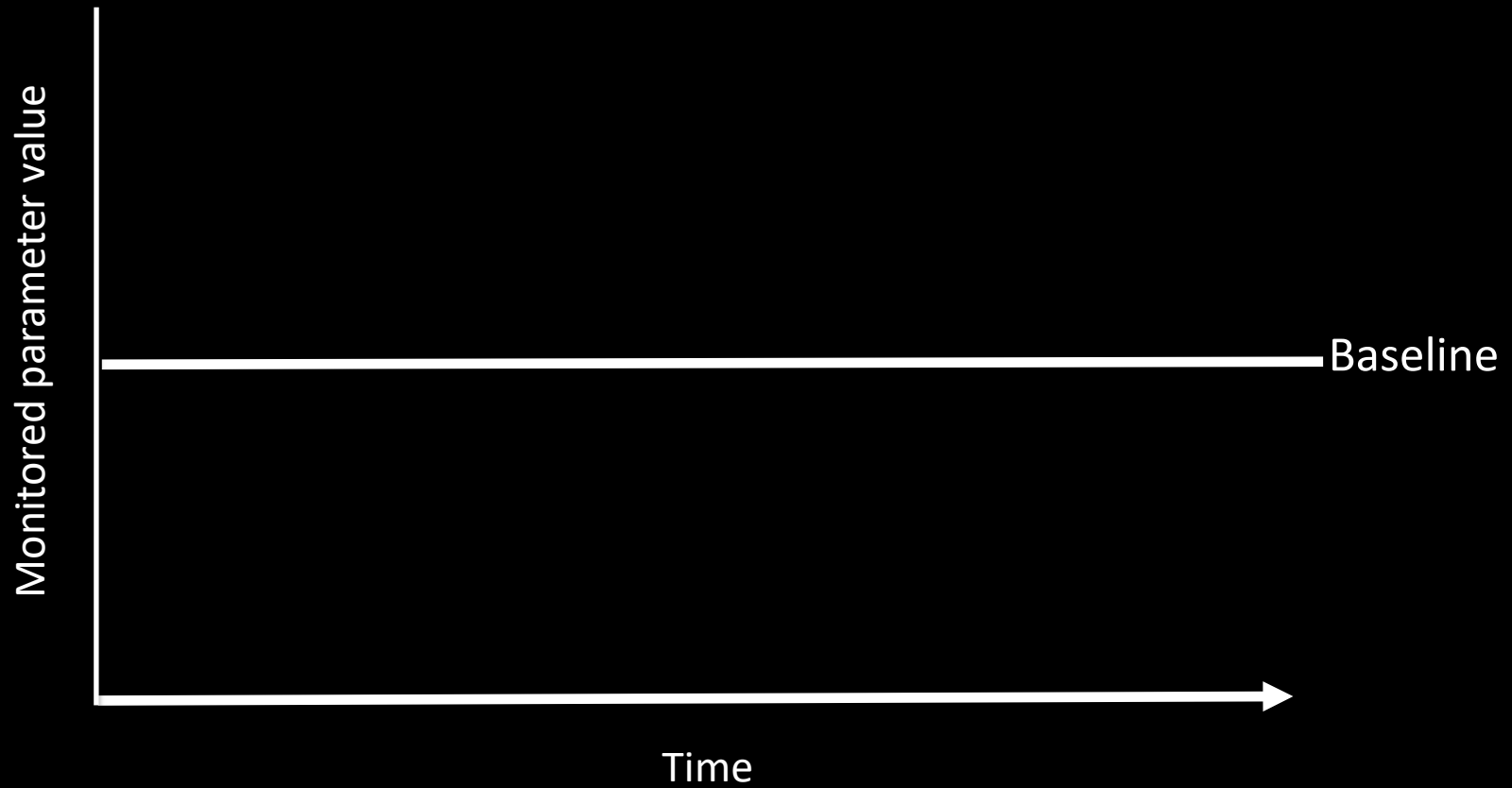






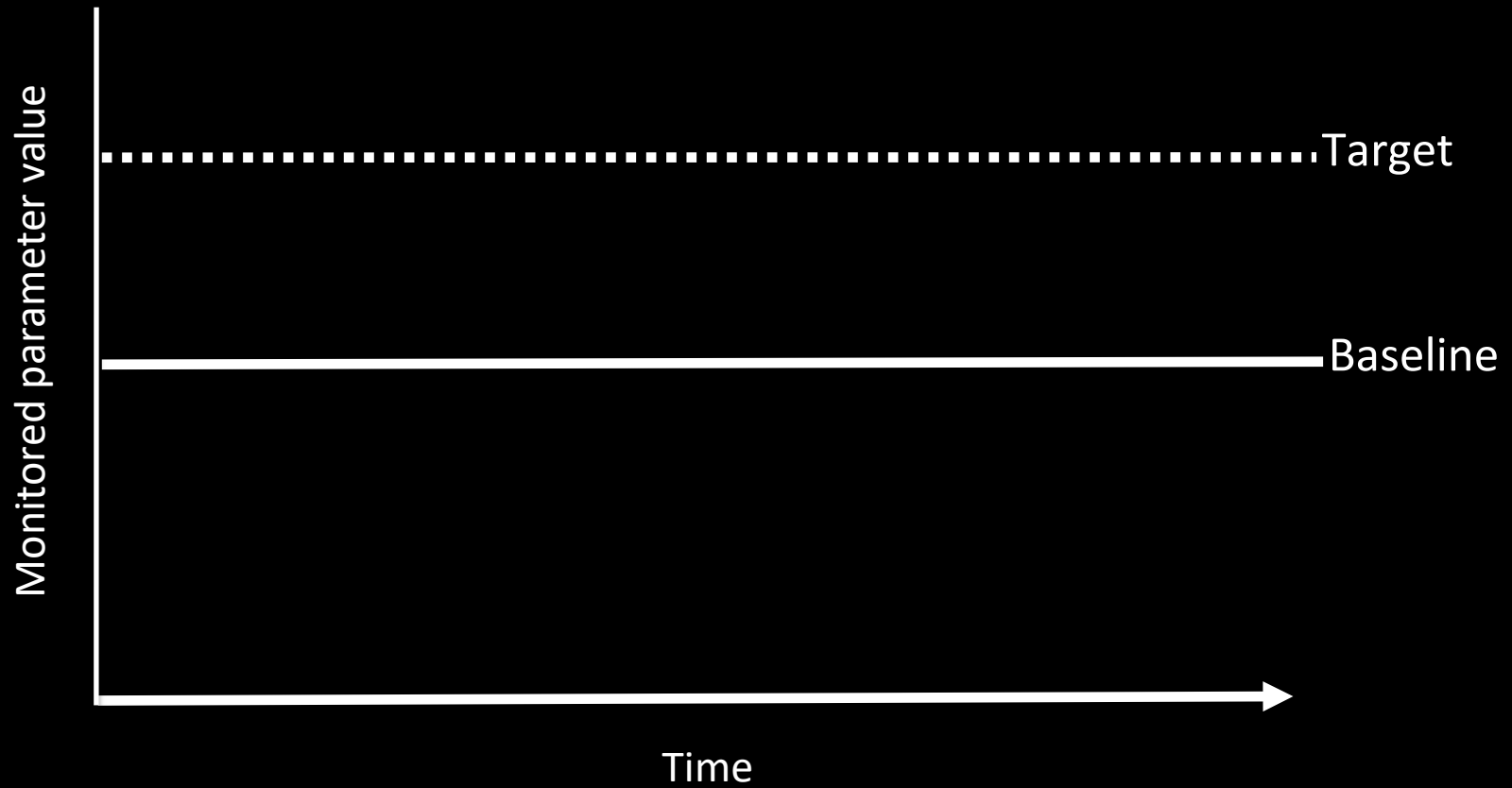


# Targets and Triggers

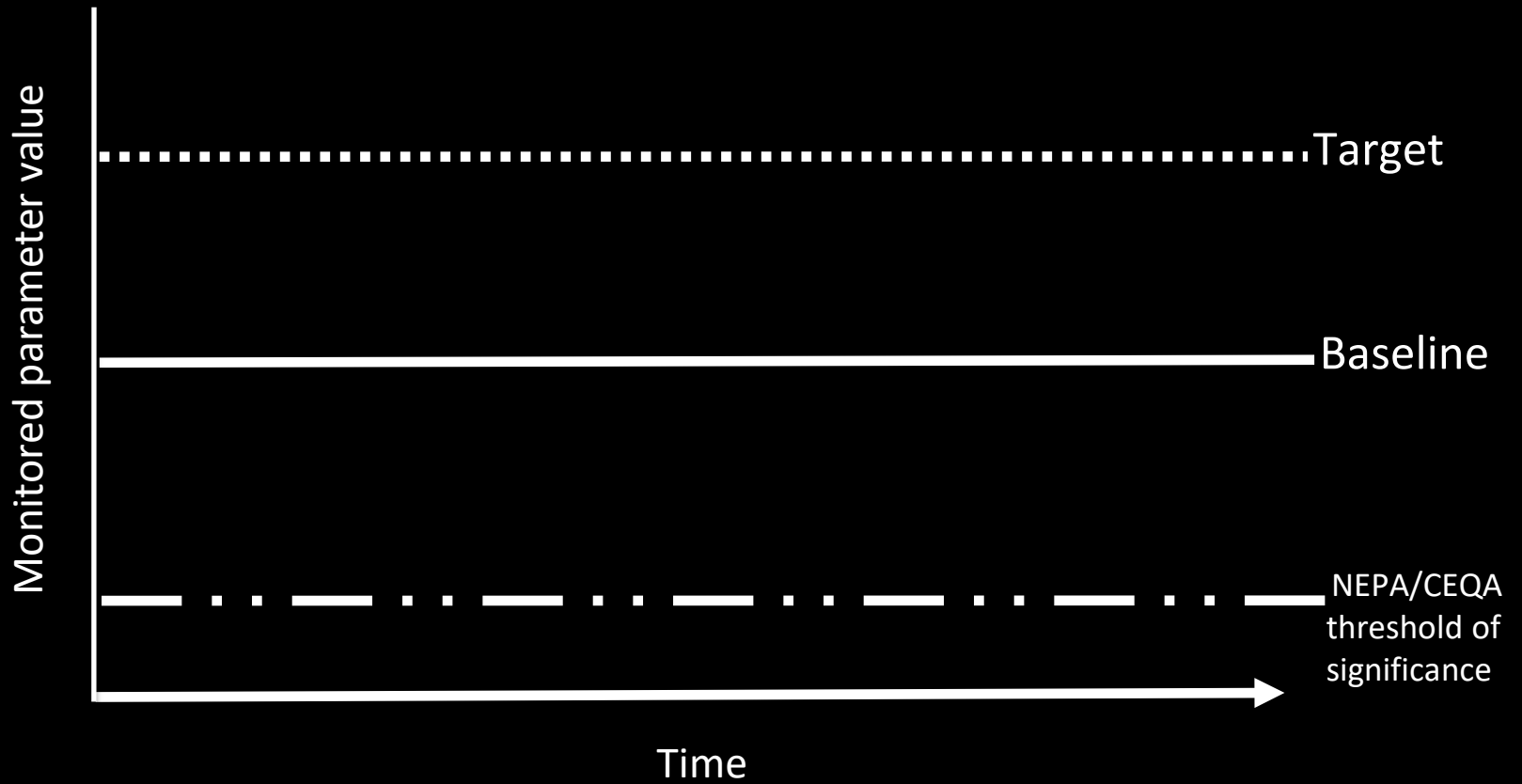




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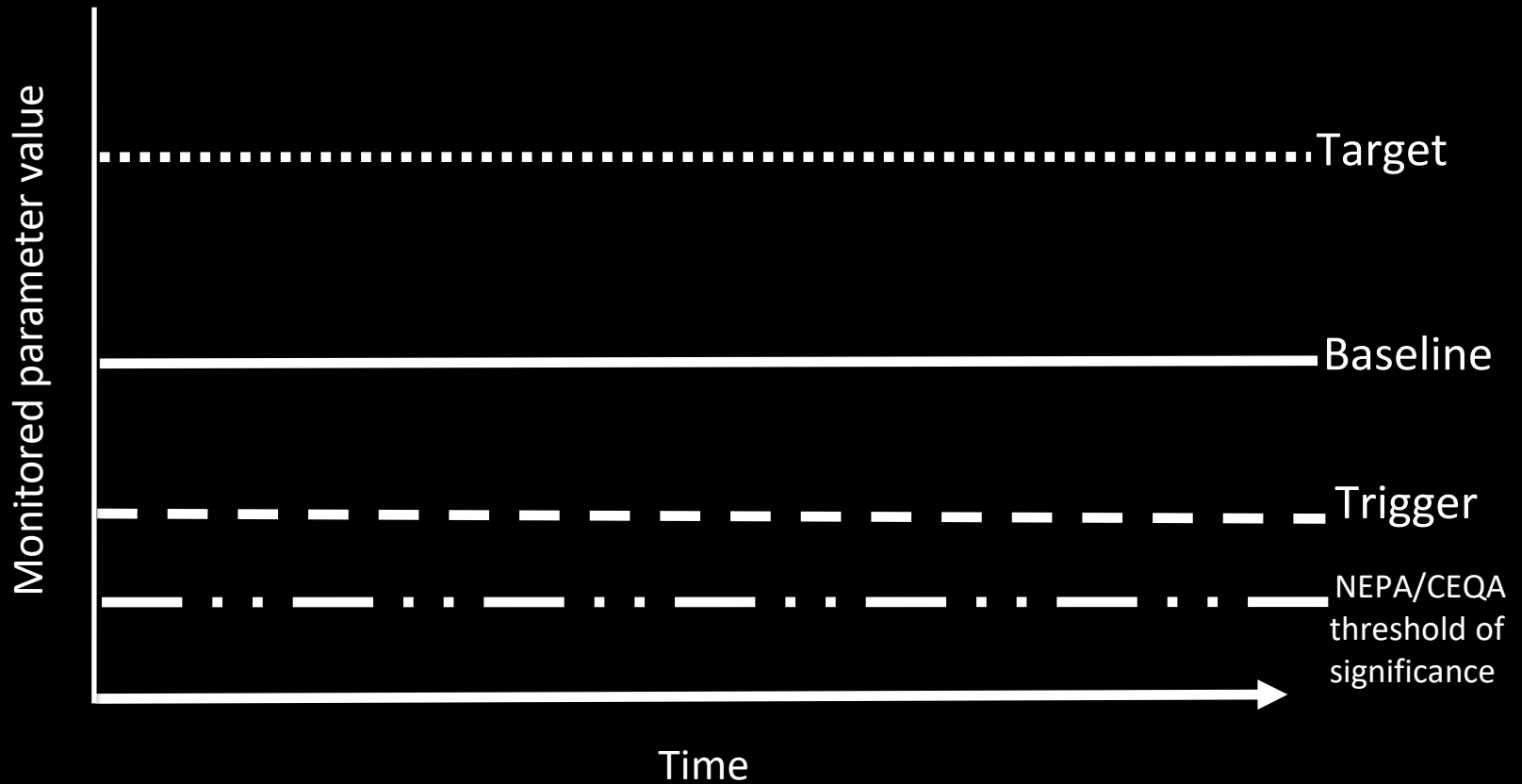


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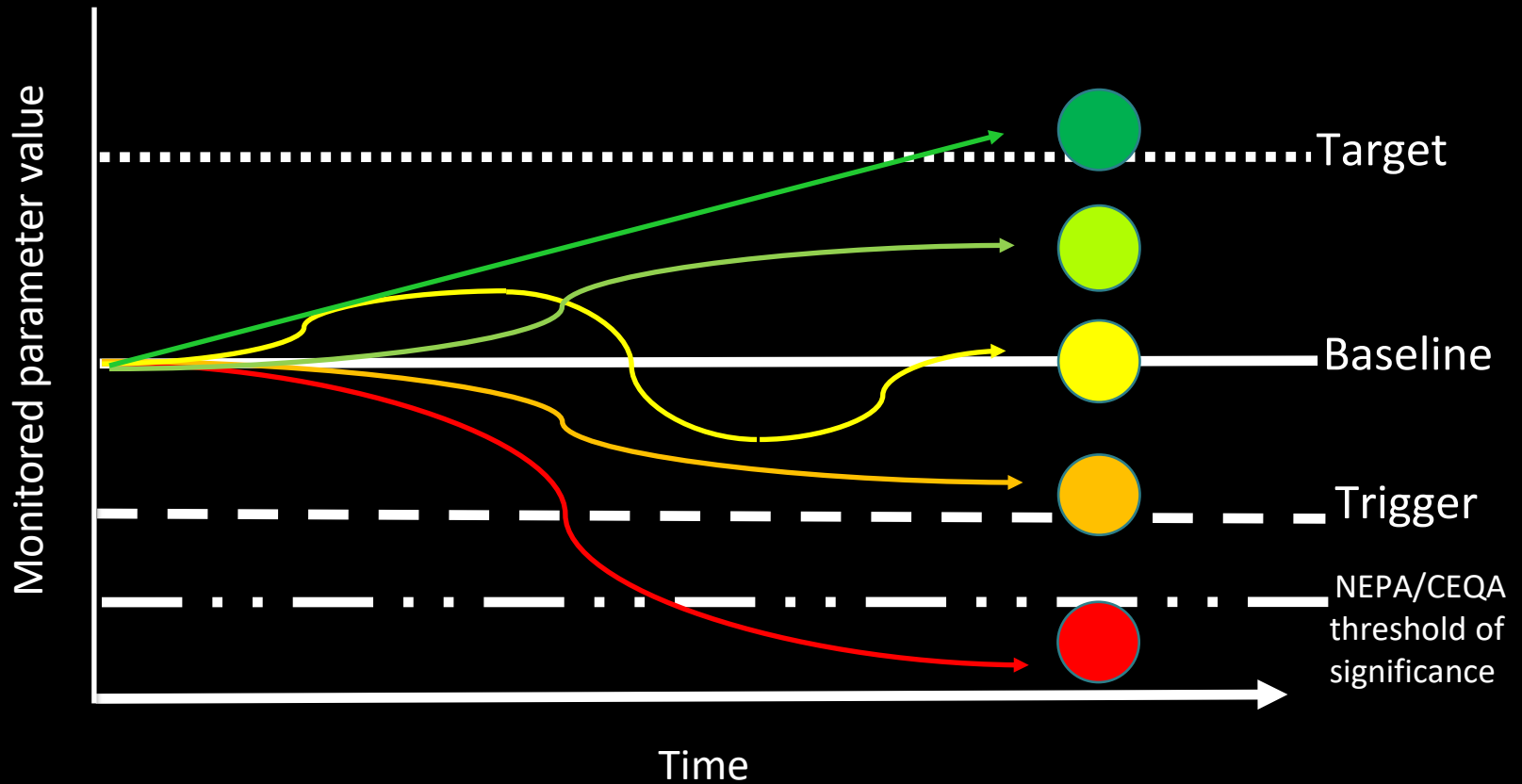




# Targets and Triggers



# Targets and Triggers



# **“Big Table” elements**

- **Category**
- **Restoration Target**
- **Monitoring Parameter**
- **Spatial Scale**
- **Time-frame for Management Decisions**
- **Management Trigger**
- **Applied Studies**
- **Potential Management Actions**



CATEGORY/ PO	RESTORATION TARGET	MONITORING PARAMETER (METHOD)	SPATIAL SCALE FOR MONITORING RESULTS
<p><b>Sediment Dynamics</b> Project Objective 1 (Preserve existing estuarine habitat areas)</p>	<p>No significant decrease in South Bay intertidal and subtidal habitats (south of San Bruno shoal), including restored pond mudflat, intertidal mudflat, subtidal shallow and subtidal channel areas.</p>	<ul style="list-style-type: none"> <li>▪ Area of restored mudflat.</li> <li>▪ Area of outboard mudflat.</li> <li>▪ Area of subtidal shallows and channel.</li> </ul> <p>Methods: Bathymetry and LiDAR surveys will be performed periodically, initially every 3–5 years and then less frequently if data suggest slower rates of changes over time.</p>	<ul style="list-style-type: none"> <li>▪ Change in tidal mudflat and subtidal shallows expected to vary at the pond complex scales. Areas will be estimated and reported on the pond complex scale.</li> <li>▪ Changes in South Bay need to be placed within system-wide (San Francisco Estuary) context to assess influence of external factors.</li> </ul>

EXPECTED TIME FRAME FOR DECISION-MAKING	MANAGEMENT TRIGGER	APPLIED STUDIES	POTENTIAL MANAGEMENT ACTION
<ul style="list-style-type: none"> <li>▪ Change in tidal mudflat &amp; subtidal shallow: 10–20 years, assuming significant tidal habitat restoration continues beyond Phase 1.</li> <li>▪ Subtidal channel change: 0–5 years.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Outboard mudflat decreases greater than the range of natural variability + observational variability/error.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Will sediment movement into restored tidal areas significantly reduce habitat area and/or ecological functioning (such as plankton, benthic, fish or bird diversity or abundance) in the South Bay?</li> <li>▪ Development of a 2- and 3-D South Bay tidal habitats evolution model.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Convene study session to review and interpret findings to assess if observed changes are due to restoration actions or system-wide changes in the sediment budget (<i>e.g.</i>, effects of sea level rise).</li> <li>▪ Study biological effects of loss of mudflat, subtidal shallows, and/or subtidal channel habitat.</li> <li>▪ Adjust restoration phasing and design to reduce net loss of tidal mudflats. Potential actions include remove bayfront levees to increase wind fetch and sustain tidal mudflat, phase breaching to match demand and supply, and/or breach only high-elevation ponds to limit sediment demand</li> <li>▪ Reconsider movement up staircase</li> </ul>

# South Bay Salt Pond Restoration Project Restoration Program Plan



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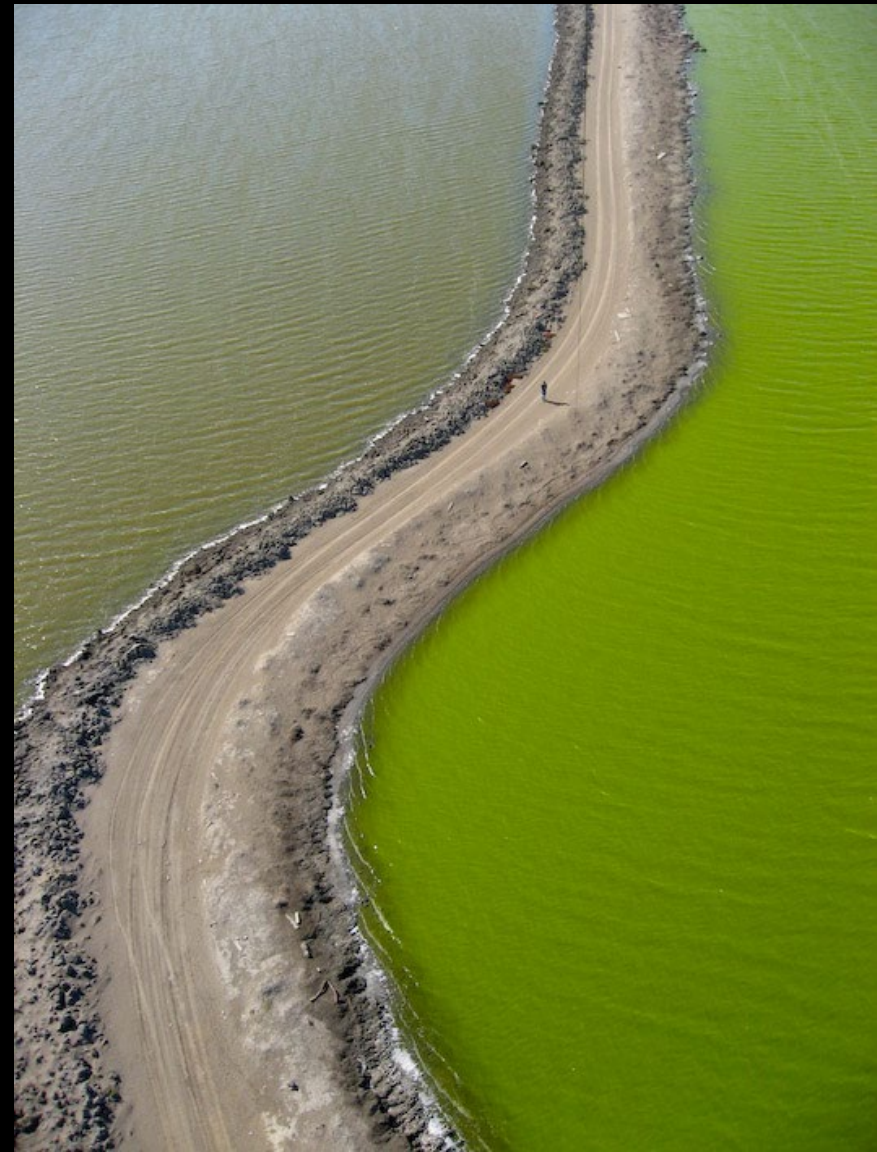
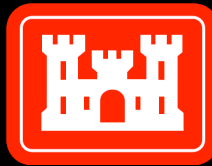


# South Bay Salt Pond Restoration Project Restoration Program Plan





# Partnerships





# South Bay Salt Pond Restoration Project

*Restoring the Wild Heart of the South Bay*

**John Bourgeois**

Deputy Operating Officer  
Watershed Stewardship & Planning



**Valley Water**

Clean Water • Healthy Environment • Flood Protection

[JBourgeois@valleywater.org](mailto:JBourgeois@valleywater.org)

[www.southbayrestoration.org](http://www.southbayrestoration.org)

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Name:  
South Bay Salt  
Pond Restoration  
Project