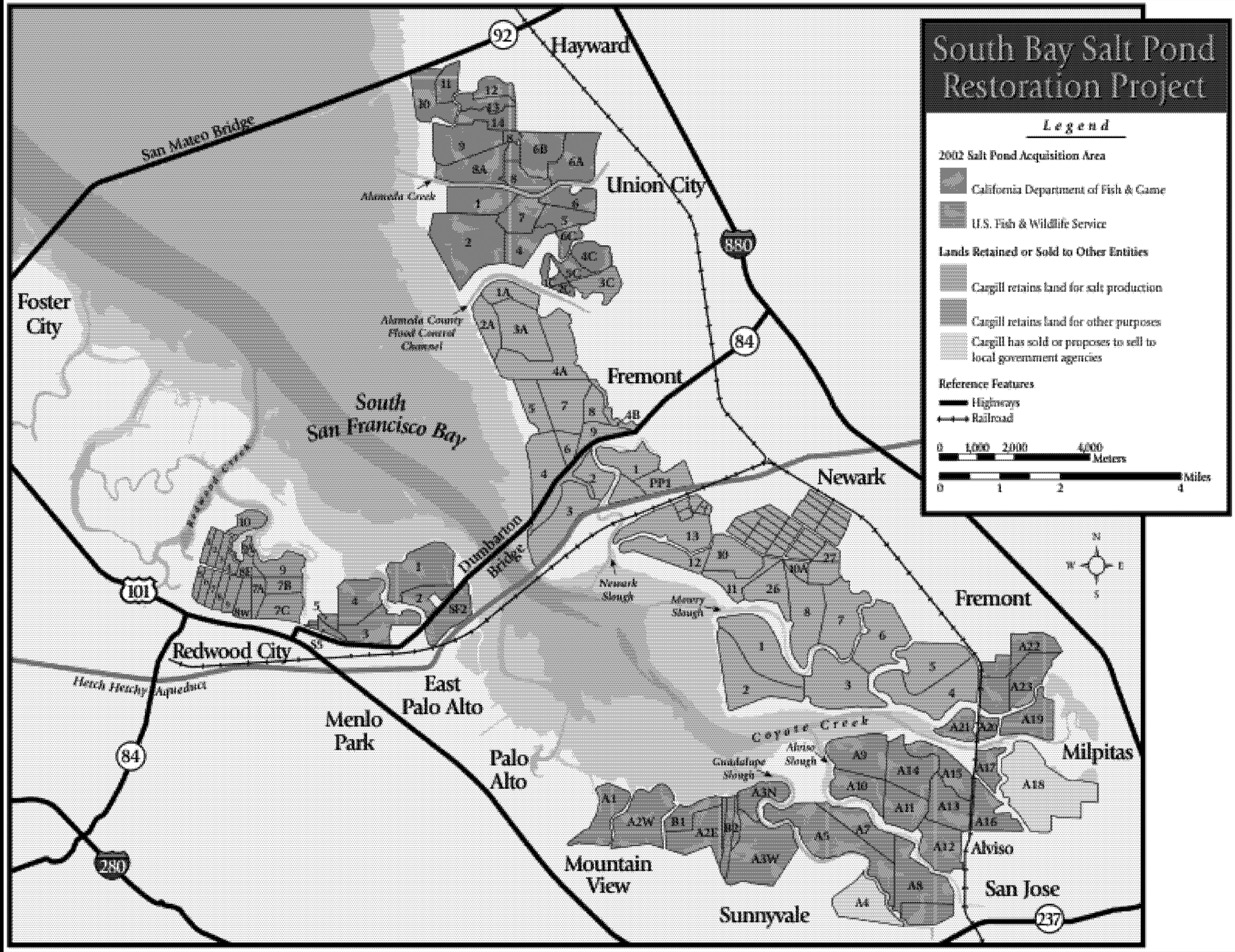
South Bay Salt Pond Restoration Project

Restoring the Wild Heart of the South Bay

Red light / Green light: A decade after the start of restoration, how is the South Bay Salt Pond Restoration Project performing

Laura Valoppi,
formerly with U.S. Geological Survey
John Bourgeois, CA Coastal Conservancy
Cheryl Strong, US Fish and Wildlife Service

South Bay Salt Pond Restoration Project



Legend

2002 Salt Pond Acquisition Area

- California Department of Fish & Game
- U.S. Fish & Wildlife Service

Lands Retained or Sold to Other Entities

- Cargill retains land for salt production
- Cargill retains land for other purposes
- Cargill has sold or proposes to sell to local government agencies

Reference Features

- Highways
- Railroad

0 1,000 2,000 4,000 Meters

0 1 2 4 Miles

Goals and Trade-offs

- Tidal marsh species *and* managed pond species
- Public use *and* wildlife needs
- Flood risk management and other infrastructure needs

Photos by J. Irving

Key Uncertainties

- Will there be enough sediment to fill ponds?
- How will restoration affect mudflat habitat?
- How will restoration affect birds, fish?
- How will nuisance species affect restoration?
- Will legacy mercury be a problem?
- How will trail use affect wildlife?
- How to manage pond water quality?
- How will climate change and SLR affect restoration?


C. Strong

Adaptive Management Restoration

Phased implementation
of Project

Amount of tidal marsh restored

90:10
tidal marsh:
ponds

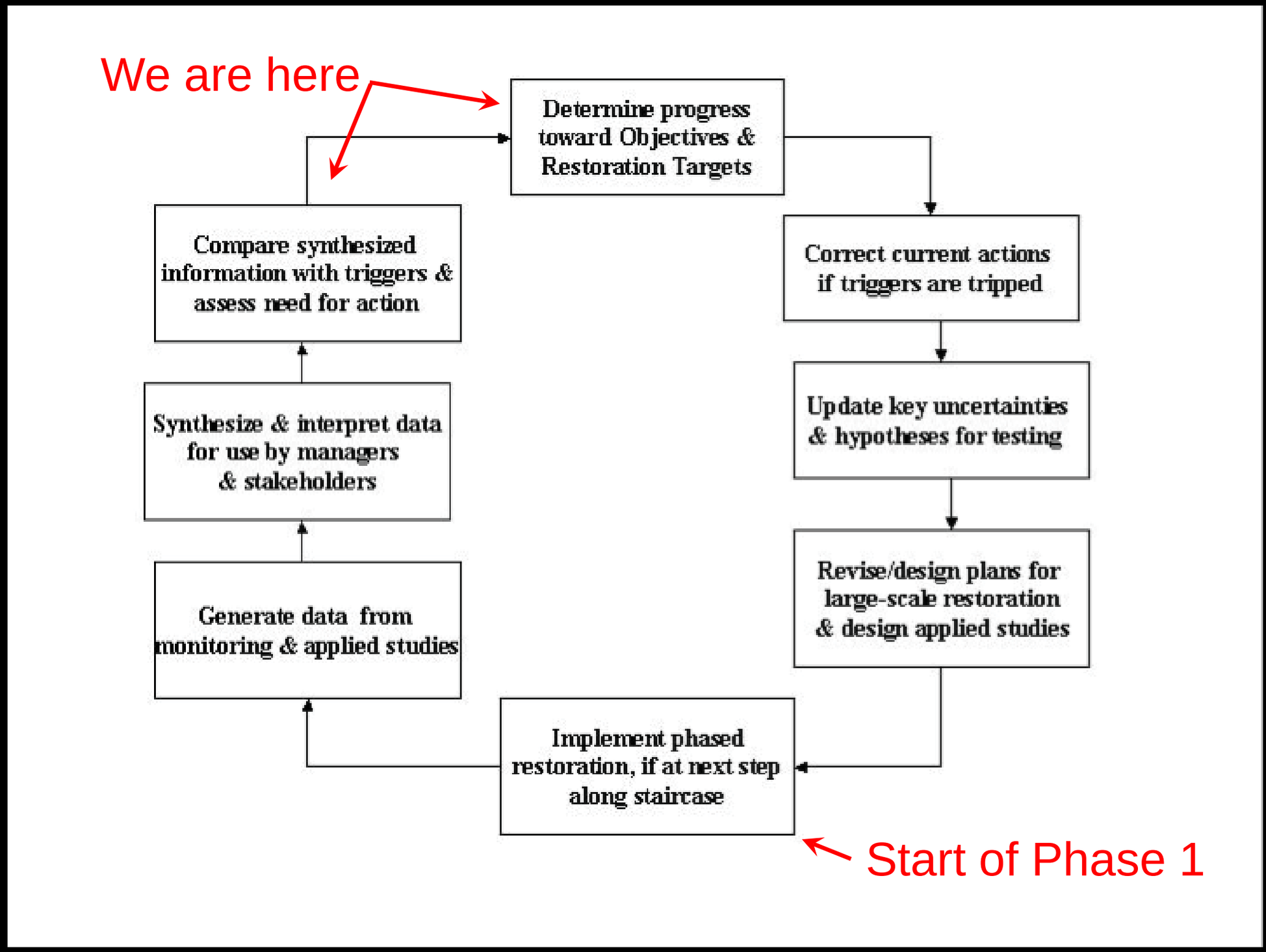
We are
~here

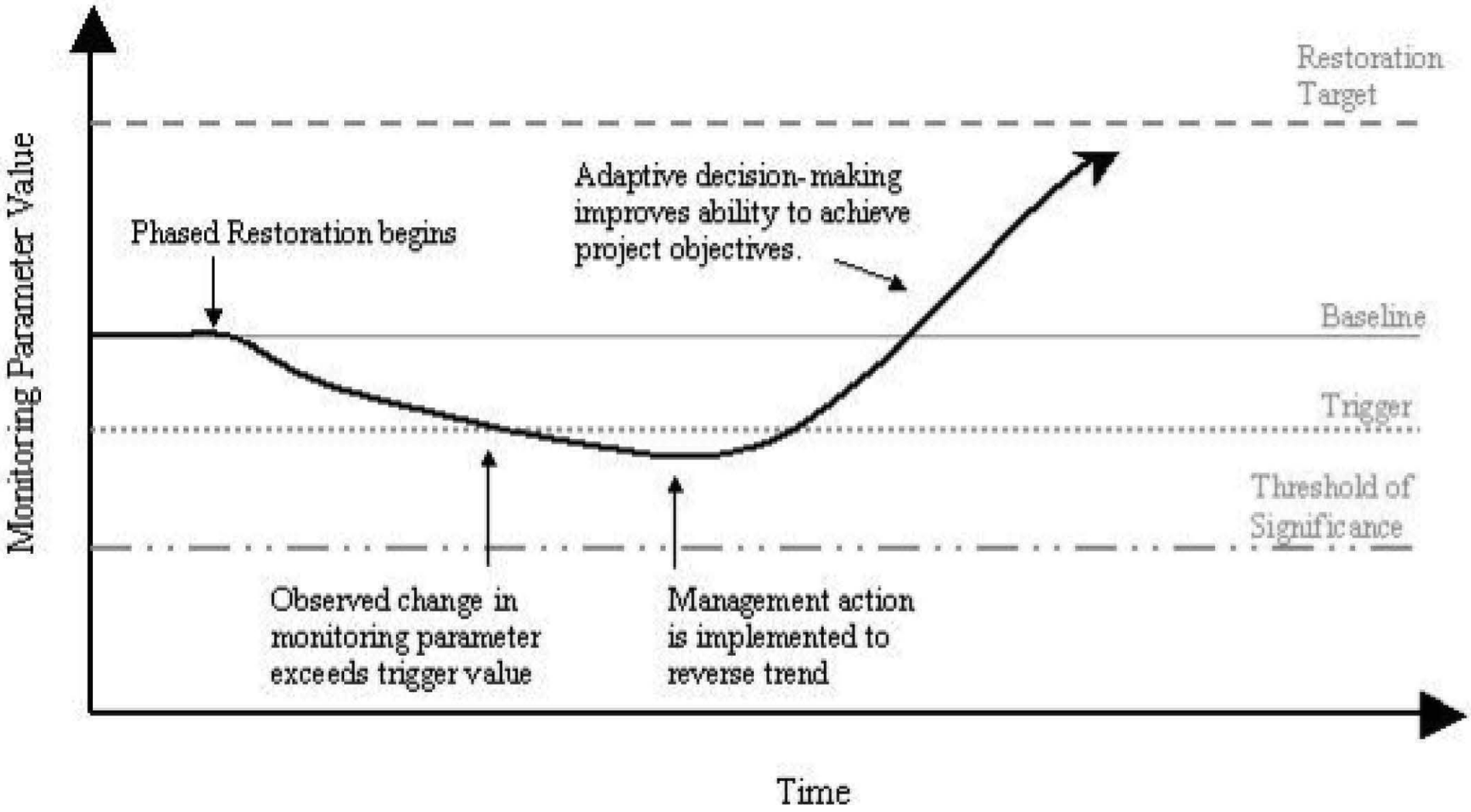
50:50
tidal marsh:
ponds

2008

2058

Time


We are here
Determine progress toward Objectives & Restoration Targets
Compare synthesized information with triggers & assess need for action
Synthesize & interpret data for use by managers & stakeholders
Generate data from monitoring & applied studies
Correct current actions if triggers are tripped
Update key uncertainties & hypotheses for testing
Revise/design plans for large-scale restoration & design applied studies
Implement phased restoration, if at next step along staircase
Start of Phase 1

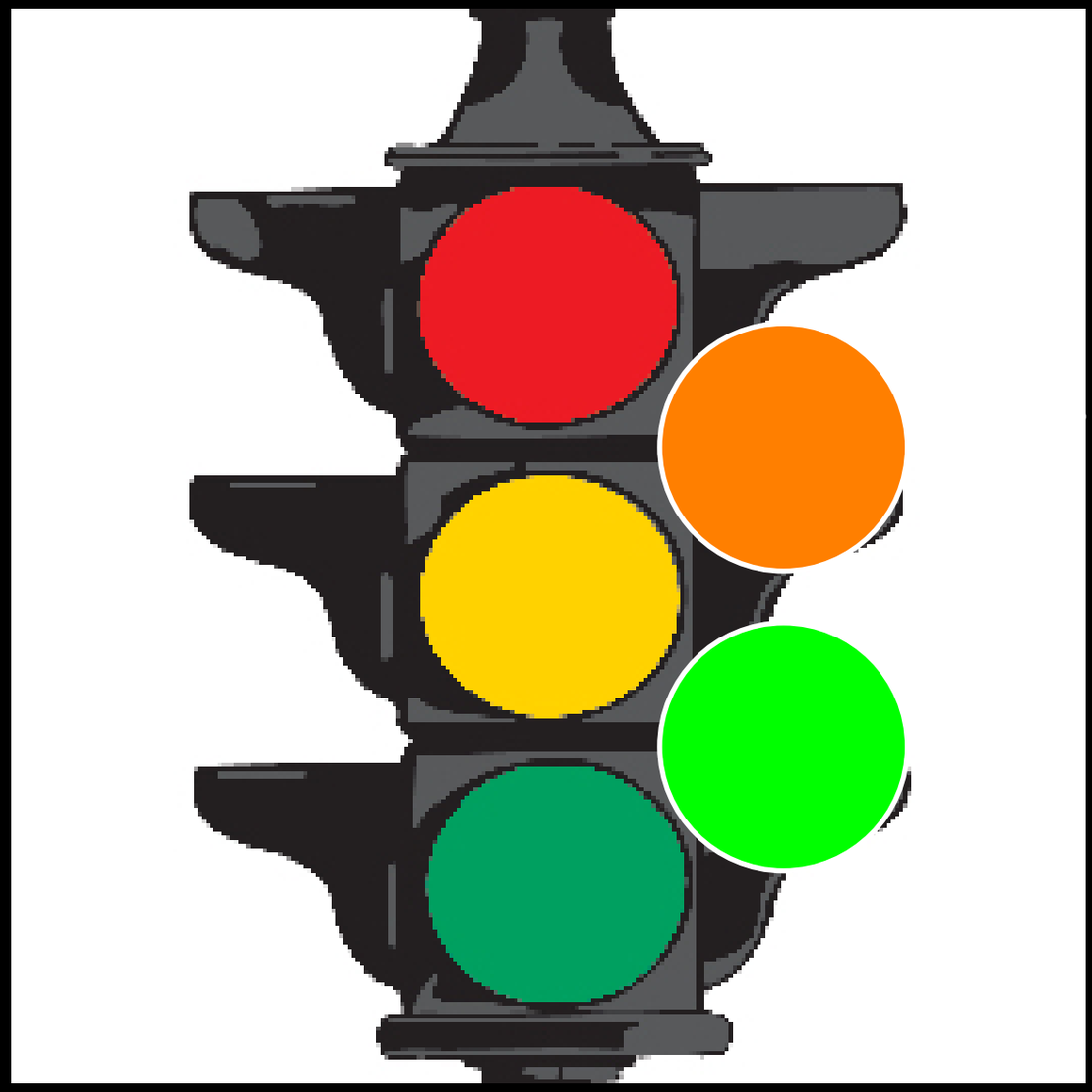

Monitoring Parameter Value
Restoration Target
Adaptive decision-making improves ability to achieve project objectives.
Phased Restoration begins
Baseline
Trigger
Threshold of Significance
Observed change in monitoring parameter exceeds trigger value
Management action is implemented to reverse trend
Time

Scoring Using an Expanded “Stoplight”

Not Meeting Expectations

Uncertain

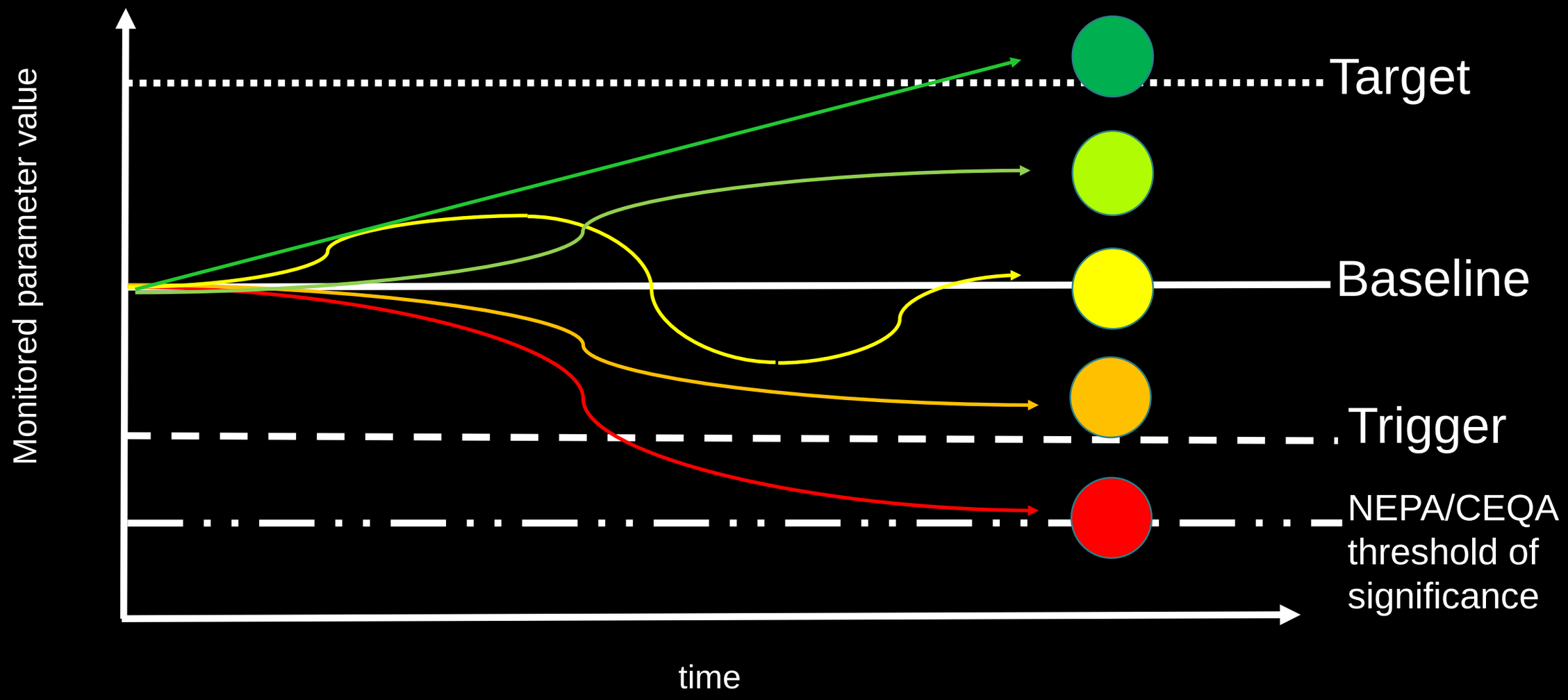
Meets/Exceeding Expectations



Trending Negative

Trending Positive

Expanded stoplight and triggers/targets



Meets/Exceeding Expectations

-Marsh Accretion Rates
-Snowy Plovers

Trending Positive

-Tidal Marsh Establishment
-Ridgway's Rail
-Salt Marsh Harvest Mouse
-Sediment Accretion
-Sustaining Mudflats
-Long-term Hg Impacts; Channel Scour
-Diving Ducks; Migratory Shorebirds
-Salt Pond Specialists
-Estuarine Fishes; Harbor Seals
-Visitor Experience
-Wildlife/Public Interactions

Uncertain

-California Gulls
-California Least Terns
-Water Quality
-Steelhead

Trending Negative

-Water Quality: Algal Composition

J. Irving

Not Meeting Expectations

-Short-term Hg Effects
-Nesting Islands

Final Report Card, fall 2016:
B+

2

1

3

14

2

April 2008

September 2009

May 2010

October 2010

June 2011

C. Benton

SALT POND A21 SOUTH BAY SALT POND RESTORATION PROJECT

Kite aerial photographs of a small area in the northwest corner of Pond A21, which was breached to tidal flow in 2008. Field of view is approx. 120 feet. C. Benton

J. Kitzenberger

South Bay Salt Pond Restoration Project

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Scoring using expanded stoplight

- Meeting/exceeding expectations
- Uncertainty, trending positive
- Uncertain
- Uncertain, trending negative
- Not meeting expectations

- **Red light – Green light: A decade after the start of restoration, how is the South Bay Salt Pond Restoration Project moving forward?**
- The South Bay Salt Pond Restoration Project is the largest tidal wetland restoration project on the West Coast of the United States. As planned, the project will restore 15,100 acres of former industrial salt ponds to a mosaic of tidal wetlands and managed ponds for the benefit of native wildlife, public access, and flood risk reduction. As we finish up our first decade on the Project and ramp up design and planning for the next phase, we created a score card to gauge progress of our adaptive management program and investigations of key uncertainties. In collaboration with our project management and local science team, we derived a “traffic light” system for rating. Most topics were favorably in the green, including sediment dynamics and mercury contamination; while water quality and island design for nesting birds clearly need more attention. This check-in comes at a time when reduced funding and impending sea level rise are of increasing concern. However, let’s not forget the progress that has been made in just 10 years: 3000 acres restored to the tides, 400 acres of ponds enhanced, and sightings of endangered species in new marsh habitat. The traffic light system can help guide the use of limited science and monitoring funds as we move forward to the next ten years of restoration.