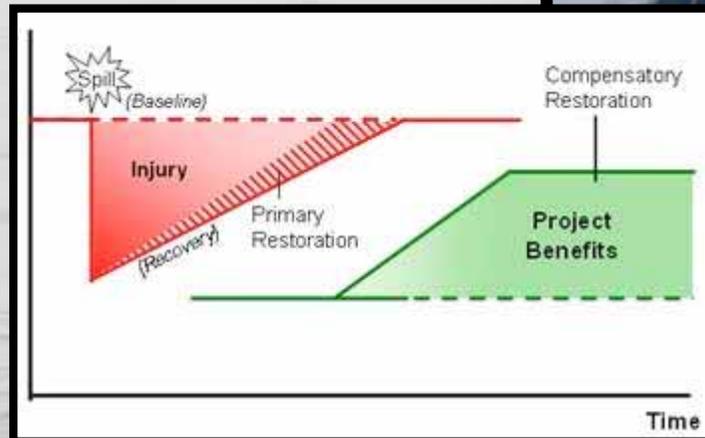


Oil Spill | BUSAN

GFNMS & Other Trustee Agency's Natural Resource Damage Assessment (NRDA) Efforts

February, 2008



Potential Components of a Pollution Case Settlement

- Response and clean-up costs
- Penalties
- Natural resource damages & Restoration Costs
- Other claims
 - public entities (lost tax revenue, lost parking fees, extra staff time, etc.)
 - private claims (lost income, injury to property, etc.)



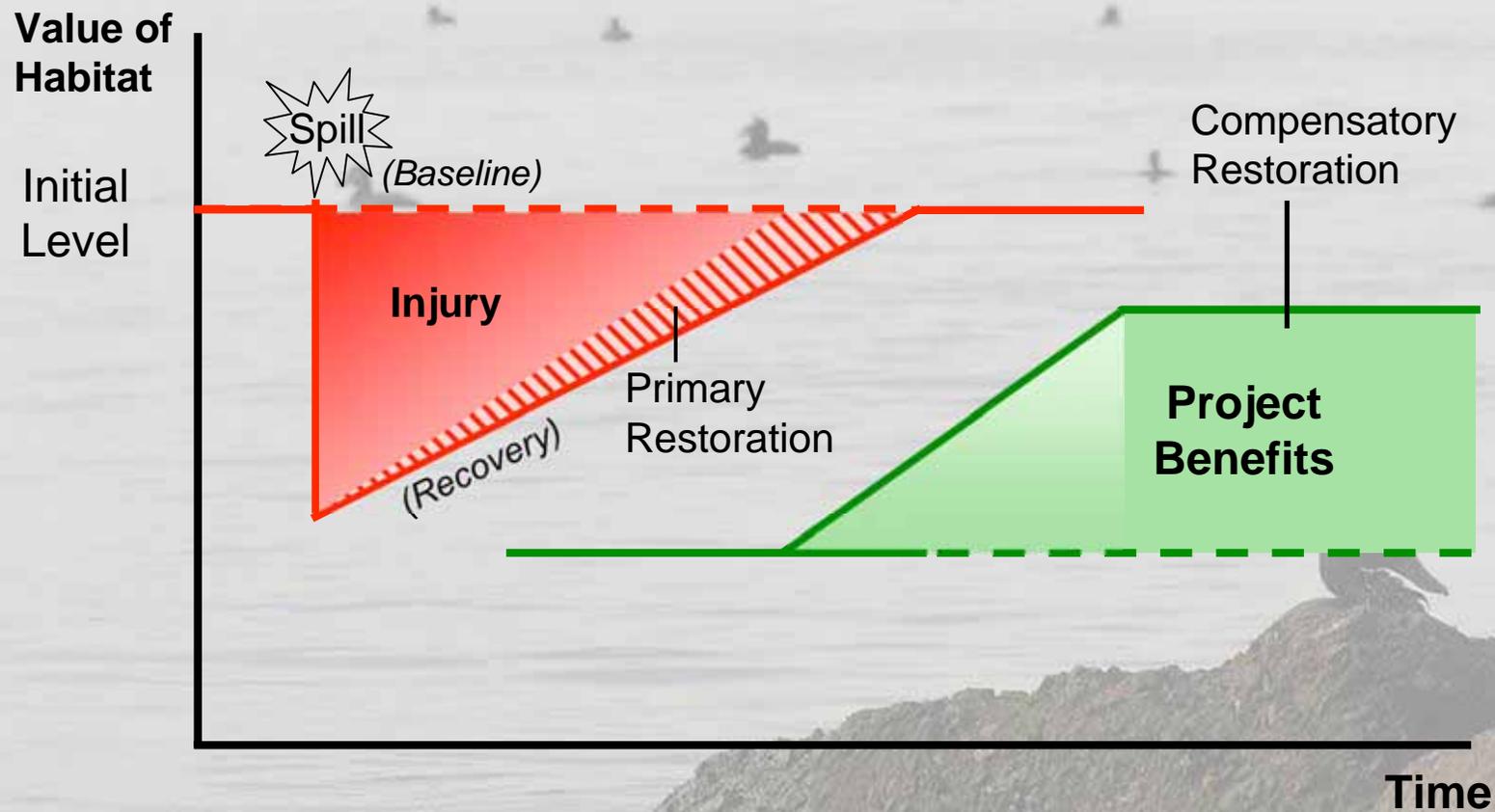
Injury Quantification

- Wildlife (birds, mammals, fish): size (#), duration (years lost)
- Habitat: size (acres), degree (%), duration (years)
- Human Uses: size (# of lost user-days, \$Value per Lost User-Day)



Habitat Equivalency Analysis

Acre-Years of Loss Due to Spill = Acre-Years Gained from Restoration Project



Who are the Trustees?



California Department of Fish & Game (CDFG)



California State Lands Commission (CSLC)



National Oceanic and Atmospheric Administration (NOAA)



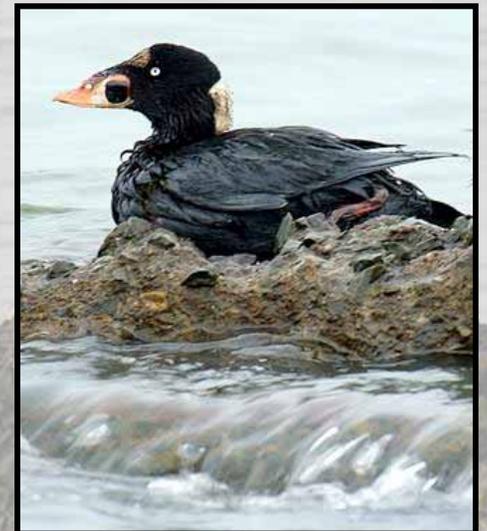
United States Fish & Wildlife Service (USFWS)



National Park Service (NPS)

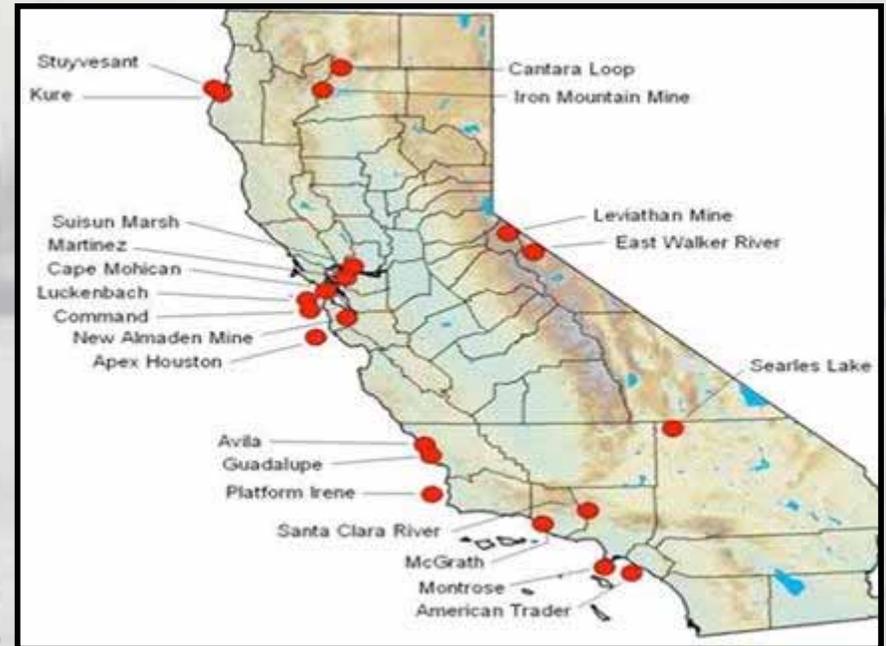


Bureau of Land Management (BLM)



The Process

- 1) Oil Spill
- 2) Data Collection
- 3) Public Information Meetings (still on-going)
- 4) Injury and Damage Quantification
- 5) Public Scoping Meeting
- 6) Draft Restoration Plan
- 7) Public Comment Period
- 8) Final Restoration Plan (DARP)
- 9) Implement Restoration Projects

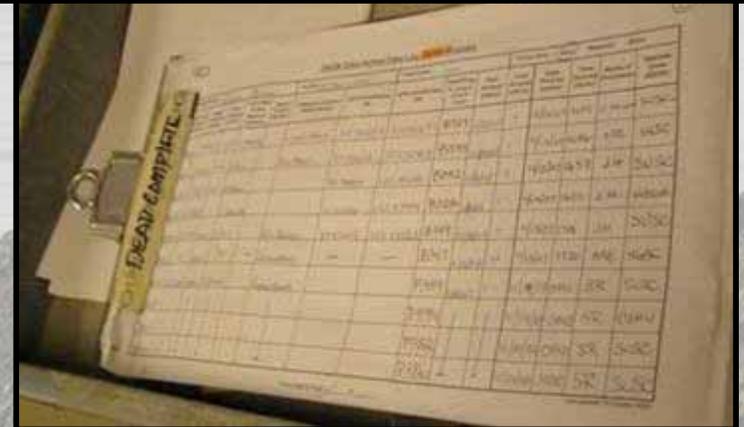


WE ARE HERE

COSCO *BUSAN* NRDA to Date

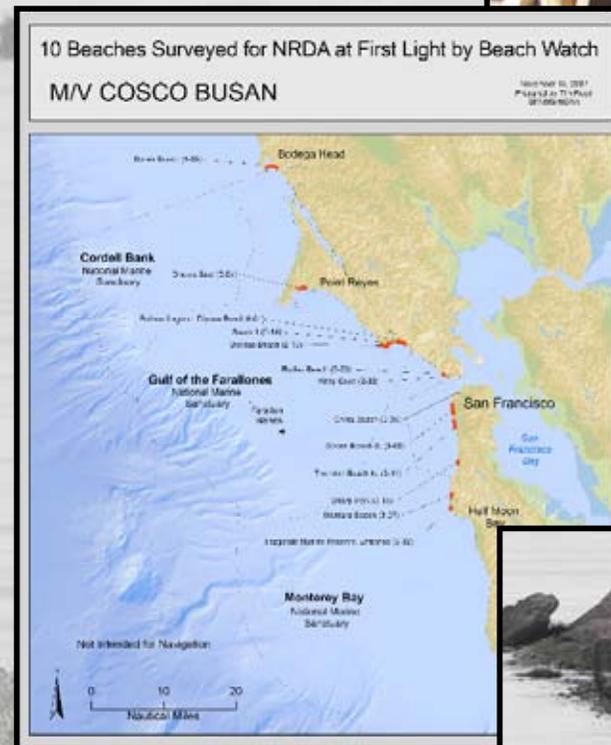
- Currently divided into nine teams according to injured resource category:

- Birds
- Mammals
- Fish
- Salt marsh habitat
- Rocky intertidal habitat
- Sandy beach habitat
- Eelgrass habitat
- Human uses (recreation)
- historical and cultural resources



GFNMS NRDA Tasks

- Birds
 - Intake stations and search effort
 - Historic & spill beached bird rates
 - Special shoreline surveys for beached bird model
- Mammals
 - Historic mammal rates
- Rocky intertidal habitat
 - Historic & spill density and spp.
 - Mussel (*Mytilus* sp.)
 - Historic tarball rates



GFNMS NRDA Tasks

- Sandy beach habitat
 - Intake station & search effort
 - Mole crab (*Emerita* spp.)
 - Historic tarball rates
 - Historic & spill wrack/drift algae abundance
- Human uses (recreation)
 - Historic & spill sandy beach activities



Preliminary Results

Birds

1,084 collected live
(421 rehabbed and released)
1,858 collected dead
SUSC, WCGR, COMU, EHGR, Corm,
ducks, GRSC, NOFU, 3 MAMU, others

Mammals

1 collected live, which died
NFSE
2 collected dead, HASE & NFSE
at least 223 observed oiled
mostly CSLI & HASE

Human Uses

more than 50 beaches, piers,
and coastal access points
closed

Rocky Intertidal Habitat

50 miles of coastline oiled
(3.1 moderately or heavily oiled)

Sandy Beach Habitat

41 miles of coastline oiled
(2.3 moderately or heavily oiled)

Saltmarsh Habitat

7.5 miles of coastline oiled
(0.7 moderately or heavily oiled)

Eelgrass Habitat

200 acres within impacted area

These numbers are subject to further refinement and analysis.

Restoration Project Selection Criteria

- Nexus to Injured Resources
- Technical Feasibility
- No Duplicate or Replacement Funding
- Legality
- Likelihood of Success
- Cost Effectiveness
- Multiple Resource Benefits
- Duration of Benefits
- Public Health and Safety
- Avoidance of Adverse Impacts
- Opportunities for Collaboration



Questions? See websites below for additional information as it becomes available.

darrp.noaa.gov/southwest/cosco/index.html

fws.gov/contaminants/Issues/OilSpill.cfm

dfg.ca.gov/ospr/spill/nrda/nrda_cosco-busan.html



Photos by Bob Dang, Amy Dean, Peter Pyle, Jan Roletto