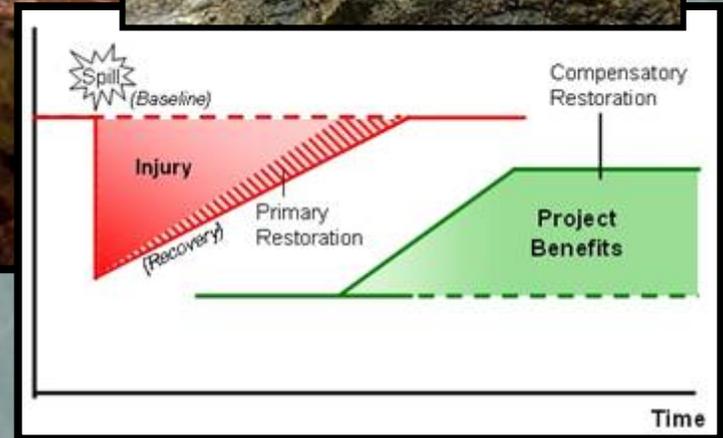


# Natural Resource Damage Assessment (NRDA) in California

Enforcenomics Workshop  
January 10, 2008



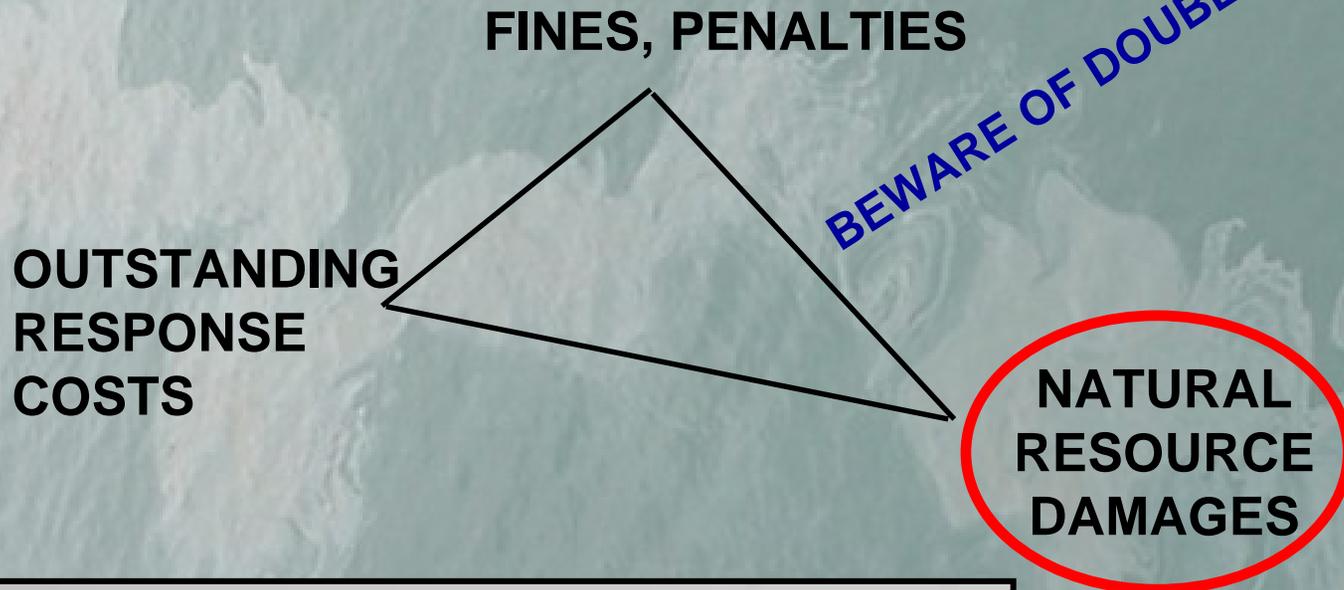
Steve Hampton, Ph.D.  
California Department of Fish and Game

# Overview

- **Legal context in California**
- **Who are the active Trustee Agencies?**
- **Case experience in California**
  - **Methods**
  - **Settlements**
  - **Restoration**



# Potential Components of an Oil Spill Settlement



**NOT PUNITIVE**

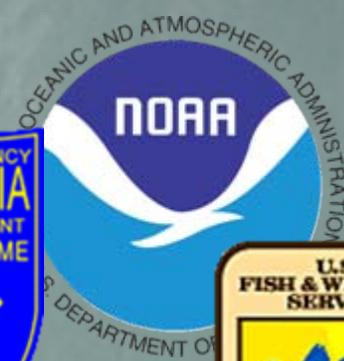


# Legal Authority

- Federal Law
  - OPA 90 (oil spills)
  - CERCLA (hazardous materials)
  - Clean Water Act
- California Law
  - Lempert-Keene-Seastrand (marine oil spills)
  - Fish and Game Code (2014, 5650, 12016)



# Who are the Trustees?



## ALMOST ALWAYS:

California Department of Fish & Game (CDFG)

National Oceanic and Atmospheric Administration (NOAA)

United States Fish & Wildlife Service (USFWS)

## SOMETIMES:

California State Lands Commission (CSLC)

California Department of Parks and Recreation (CDPR)

Regional Water Board

National Park Service (NPS)

Bureau of Land Management (BLM)

Tribes



# The Montrose Case CV Study

- CV study to value injuries to fish, eagles, falcons, and other animals
- Cost = \$7 million
- Study was done concurrently with injury analysis
- Basis for injury fell apart in depositions
- Plaintiffs motioned for CV to be rejected, as the injury scenario didn't match; the judge agreed

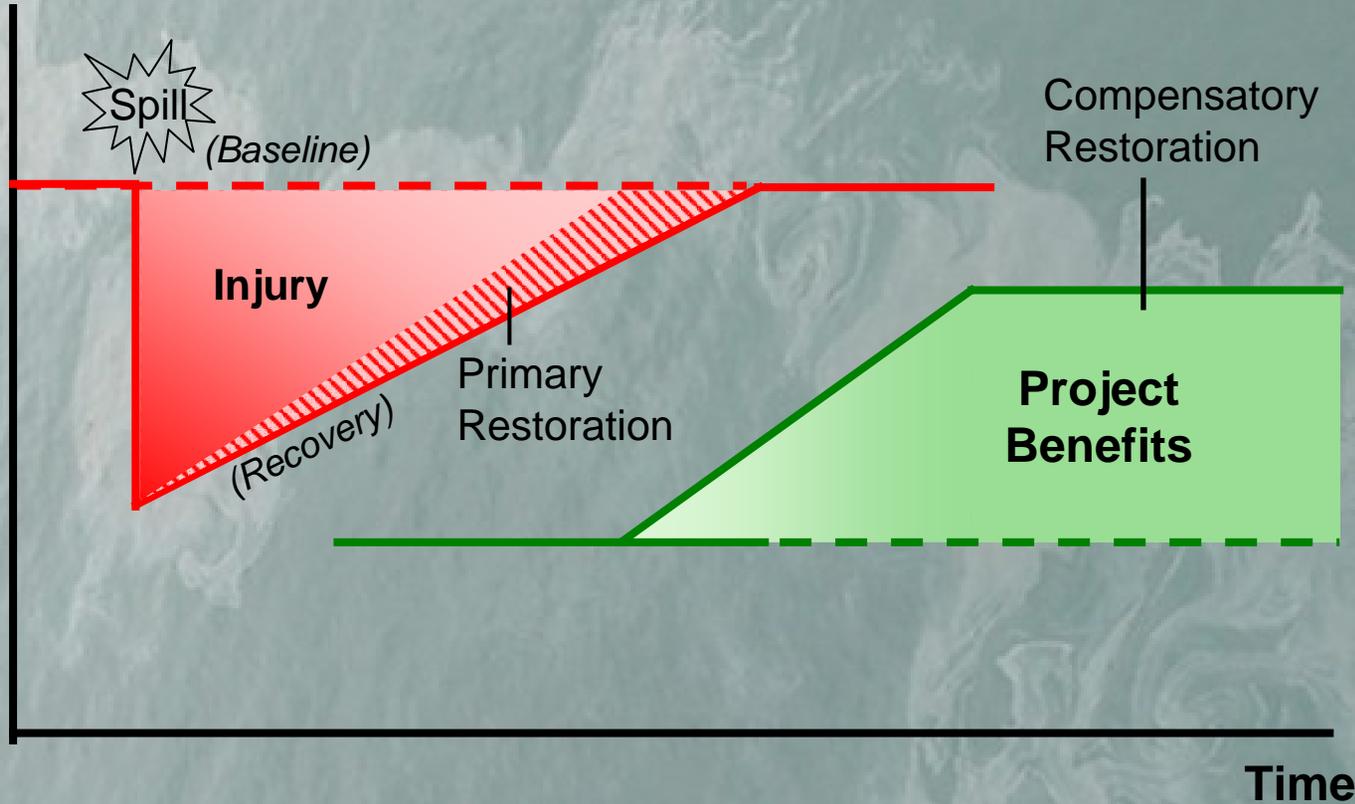


# Habitat/Resource Equivalency Analysis

$$\text{Acre-Years of Loss Due to Spill} = \text{Acre-Years Gained from Restoration Project}$$

Level of Resource Services

Initial Level



# Habitat/Resource Equivalency Analysis

## LITERATURE:

Unsworth, R.E., and R.C. Bishop. 1994. Assessing natural resource damages using environmental annuities. *Ecological Economics* 11: 35-41.

NOAA. 1995. Habitat Equivalency Analysis: An Overview. Policy and Technical Paper Series, No. 95-1, (Revised 2000 and 2006).

Flores, N.E., and J. Thacher. 2002. Money, who needs it? Natural resource damage assessment. *Contemporary Economic Policy* 20(2): 171-178.

Zafonte, M. and S. Hampton. 2007. Exploring welfare implications of resource equivalency analysis in natural resource damage assessments. *Ecological Economics* 61: 134-145



# Habitat/Resource Equivalency Analysis

## COURT DECISIONS:

**United States v. Fisher, 977 F. Supp 1193 (D.D. Fla 1997)**

**United States v. Great Lakes Dredge & Dock Co., No. 97-02510-CIV-EBD, 1999.**

**U.S. Dist. LEXIS 17612 (S.D. Fla. Sept. 27, 1999), aff'd, 259 F.3d 1300, 1305-06 (11th Cir. 2001).**



# Habitat/Resource Equivalency Analysis

## Habitat Types

Saltmarsh

Freshwater Marsh

In-stream – large rocky

In-stream – small rocky

In-stream – soft-bottom slough

Riparian

Upland

Vernal Pool

Sandy Beach

Rocky Intertidal

Groundwater ???

## Species

Birds (approximately 20 species)

Sea Otters

Deer

Salmon smolt



# For Human Use Losses

- Basic Calculation:

- Lost Use =  
(# of Lost User-days) X  
(\$Value per Lost User-Day)

Value of a day at the beach = \$13.19  
Adjusted for inflation = \$21.65

- Types of Recreational Use

- General beach use
- Jogging/Bicycling/Dog-walking
- Water-related activities (e.g., surfing, sailing, swimming)
- Fishing (e.g., pier, shoreline, charter boat)
- Sightseeing and Special Events



# NRDA Settlements in California

<u>CASES</u>	<u>LARGE</u>	<u>SMALL</u>
settled.....	19	65
terminated (no recovery)...	0	7
<u>active.....</u>	<u>5</u>	<u>29</u>
TOTAL.....	24	101
TOTAL DAMAGES...	\$126M	\$4.3M

**Another "A-Bomb For A-Rod" Contract**  
Signs Record 10-Year, \$275M Deal With Yankees

# Restoration Project Examples

- Devil's Slide Common Murre Colony Restoration
- Santa Cruz Mtns Old Growth Forest Acquisition
- Anacapa Island Rat Eradication
- Brown Pelican Roost Site Protection
- Santa Clara River Land Acquisition
- Santa Clara River Habitat Restoration
- Santa Cruz Mtns Campground Corvid Management
- Big South Cape Islands, NZ Rat Eradication
- Marre Weir Fish Barrier Removal
- Filipponi Wetland Restoration
- Interpretive Education Center at Guadalupe Dunes
- Playground equipment, bike trail, and lifeguard towers at Avila Beach
- Santa Maria River Habitat Restoration
- Nipomo Creek Habitat Restoration
- Guadalupe Endowment for Restoration and Education Projects
- Wetland Enhancement and Pt. Edith Wildlife Area (Contra Costa County)
- Wetland Enhancement at McNabney Marsh (Contra Costa County)
- Pacific Herring Spawning Habitat Enhancement in San Francisco Bay
- Steelhead Stream Habitat Enhancement at San Francisquito Creek



# Contact Information

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