



### Introduction to Natural Resource Damage Assessment (NRDA)

#### What is NRDA?

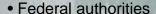
- A legal process to determine
  - Injuries to or lost use of the public's natural resources
  - Appropriate amount & type of restoration needed to offset losses
- Goal is to "make public whole" following release of hazardous substances & oil
- Federal, state and tribal "Trustees" representing the public are required to demonstrate causality between release and resource injury and lost use





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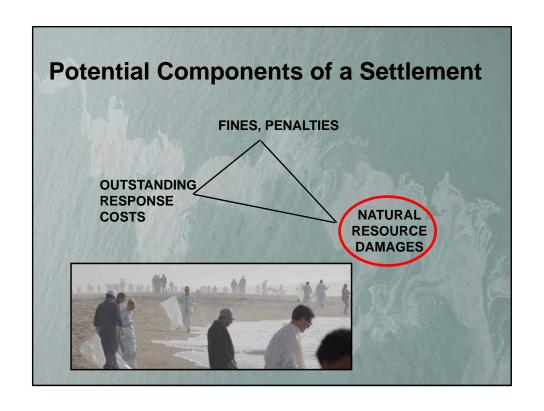
#### Who are Trustees?

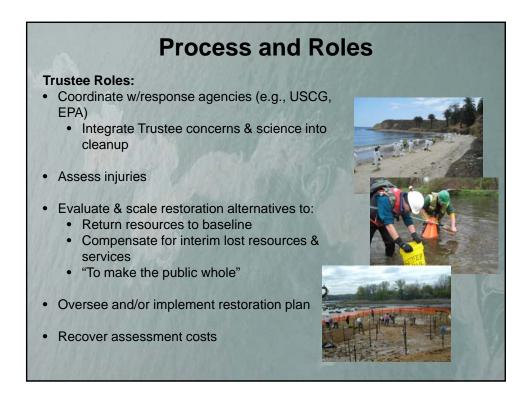


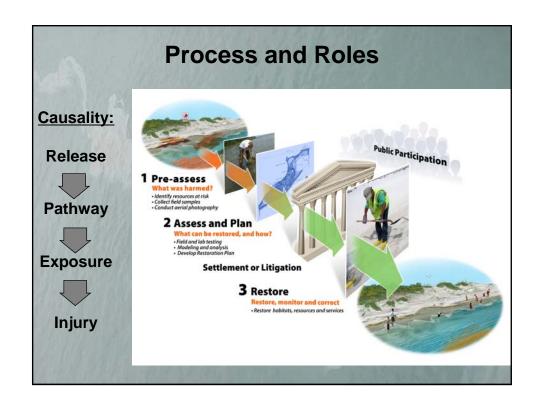
- National Oceanic and Atmospheric Administration (NOAA)
- United States Fish & Wildlife Service (USFWS)
- State agencies
- Indian Tribes
- NOAA is Trustee for:
  - Commercial/recreational fisheries
  - · Migratory fish
  - Endangered/threatened marine species
  - Coastal habitats (e.g., wetlands)
  - National Marine Sanctuary/National Estuarine Research Reserve Resources











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# Assessment: What is considered an injury?

# "Injury" includes adverse effects on:

- Survival, growth, and reproduction
- Health, physiology and biological condition
- Behavior
- Community composition
- Ecological processes and services
- Physical and chemical habitat quality or structure
- Public services, such as recreation



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#### NRDA: The First 24 Hours

- Coordinate (NRTs, RPs, Contractors/Experts, SSC, OSC etc.)
- Integrate your efforts with ICS
  - Maximizes use of limited assets
  - Avoids duplication of efforts
  - Cost effective
- · Develop and maintain situational awareness
- Share your data and findings
- Identify time critical data needs
- · Cannot document every injury



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### **Ephemeral Data Considerations**

- Document wildlife animals (e.g., fish, turtles, birds)
- Document extent of oiling
- Beach closures, advisories, boat access restrictions
- Environmental samples
- Baseline (areas where oil predicted to impact, reference areas)
- · Water column data
  - Fingerprinting
  - Support water column modeling (e.g.,

fate, transport, toxicity)
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### Transitioning beyond first 24h

- Focus sampling/design to conduct studies for longer term impacts and recovery trajectory
- Can consider response data to help determine areas for further study
- Determine timeline for data collection
  - Window of opportunity
  - One-time event vs collection over time?
- Coordinated effort

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