



Refugio Beach Oil Spill

Draft Damage Assessment and Restoration Plan/Environmental Assessment

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May 13, 2020





Presentation Outline

- Welcome!
- Overview of the Spill & Assessment
- NRDA Process
- Injury Assessment & Proposed Restoration Projects: Resource-by-Resource
- Q & A Session
- Your Comments on the Draft Plan₂



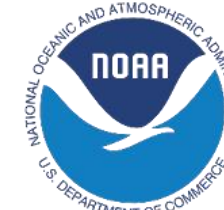
Overview of the Spill & Assessment

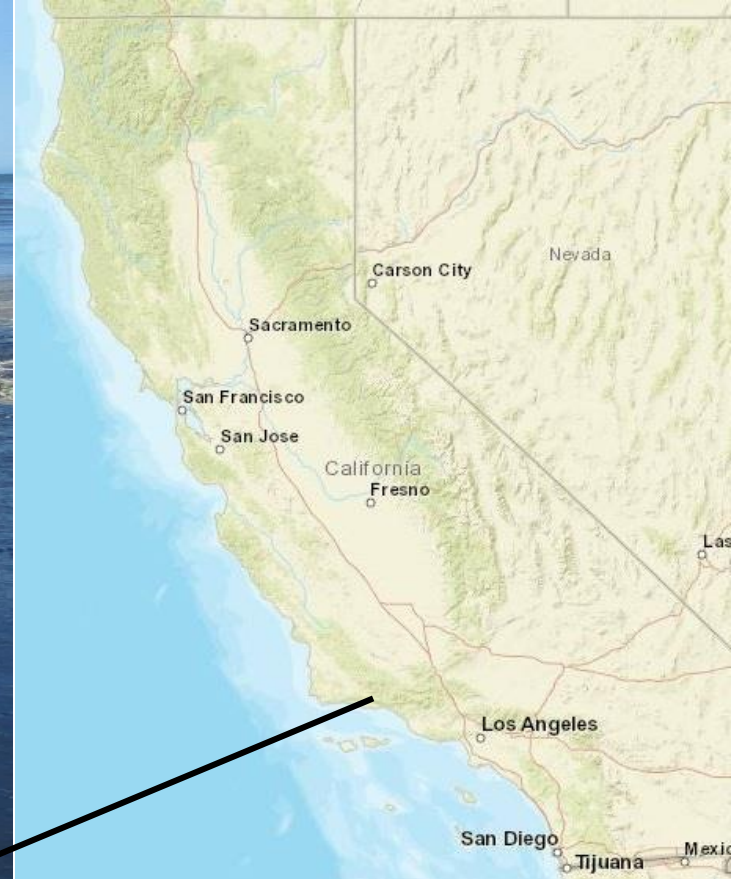
The Spill

INCIDENT SUMMARY: On May 19, 2015, an underground pipeline (Line 901) running parallel to Highway 101 ruptured near Refugio State Beach, spilling over 123,000 gallons of crude oil, much of which ran down a ravine under the freeway and entered the ocean.

RESPONSIBLE PARTY: Plains All American Pipeline, L.P., and Plains Pipeline, L.P. (jointly, Plains)

NATURAL RESOURCE TRUSTEES:







Refugio Oil Spill Characteristics

- Rapid release of Line 901 oil into intertidal zone at water surface
- Distinguishable from naturally occurring tar balls and acutely toxic
- Sheen covered a large area in Santa Barbara Channel
- Oil traveled from the release area all the way to Orange County
- Oil coated and killed animals and vegetation



Refugio Beach: Assessment

Components of the Injury Assessment:

Release



Pathway/Extent



Exposure



Injury

Pathway/Extent

- Forensic Evaluations (oil, water, tissues)
- Trajectory Modeling
- Shoreline Cleanup and Assessment Data
- LIDAR/Coastal Imagery

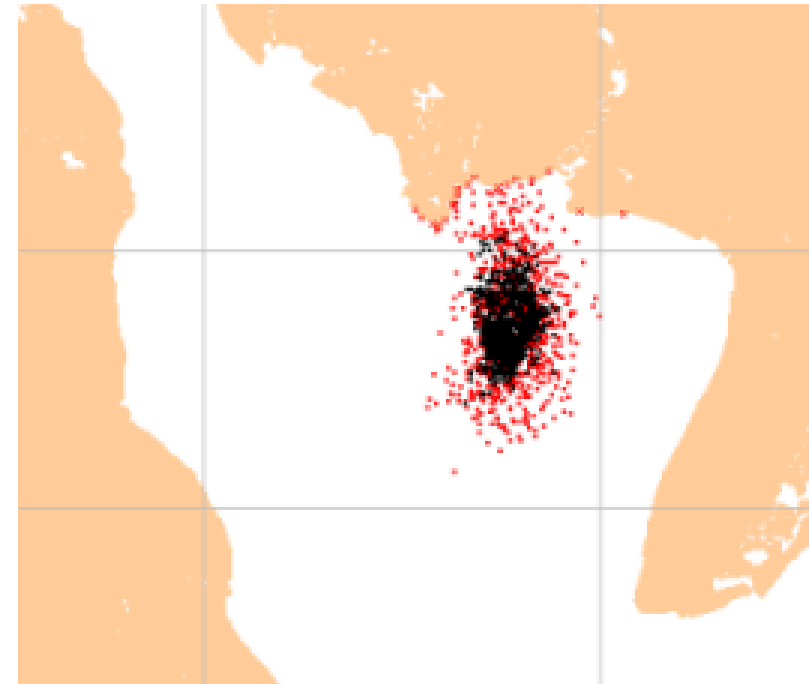


Pathway/Extent

- Forensic Evaluations (oil, water, tissues)
- **Trajectory Modeling**
- Shoreline Cleanup and Assessment Data
- LIDAR/Coastal Imagery

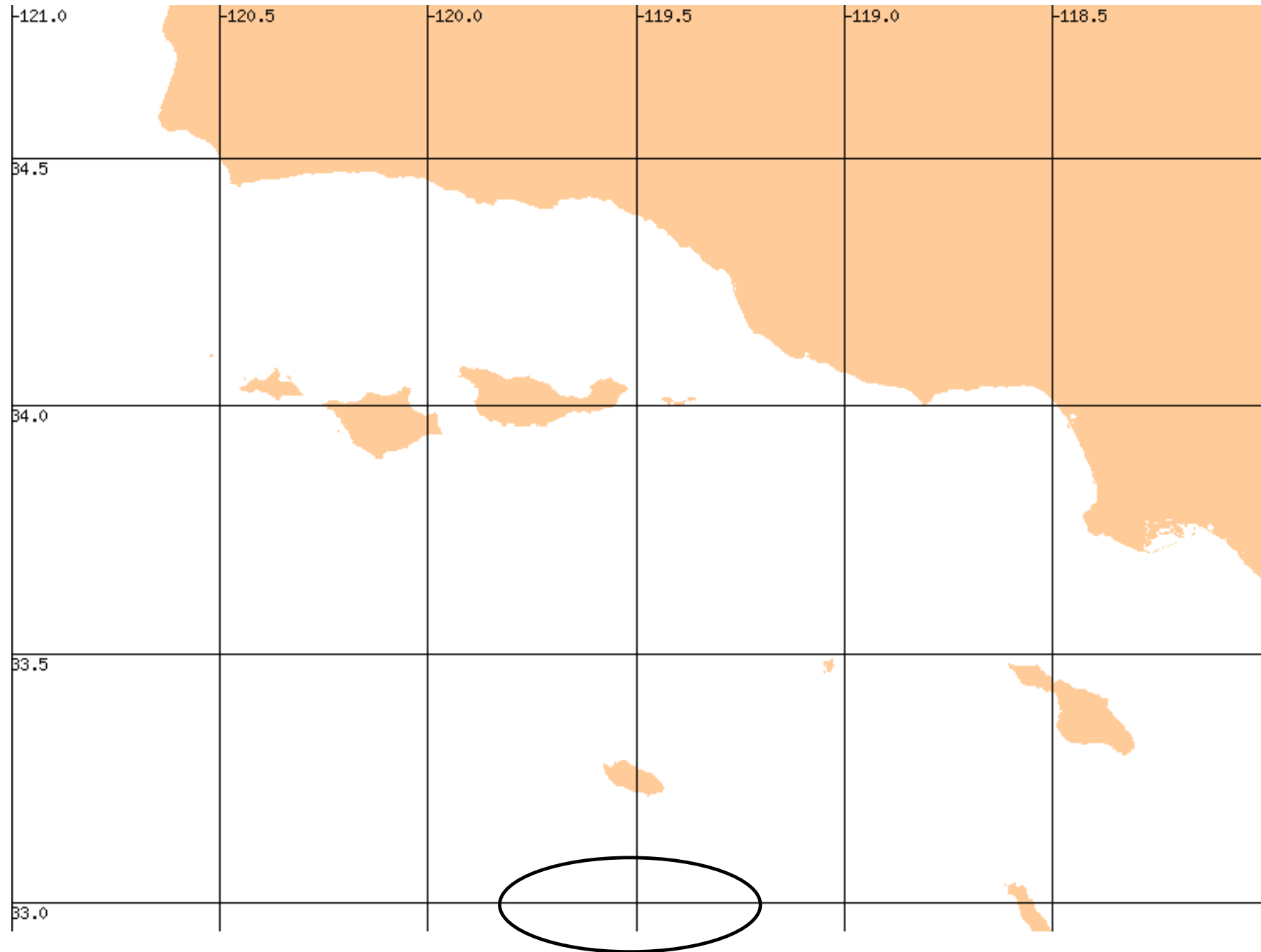
General NOAA Operational Modeling Environment (GNOME) Surface Oil Trajectory Model:

- ✓ Uses regional ocean model (CA ROMS) for offshore currents
- ✓ Informs the potential footprint of the spill and the likelihood that Line 901 oil reached various shoreline locations.



Limits of the GNOME and Other Models:

- Oil is released 1 km offshore because no nearshore transport factors
- Particle-based; not volume or concentration based
- Does not account for sinking or degradation



Pathway/Extent

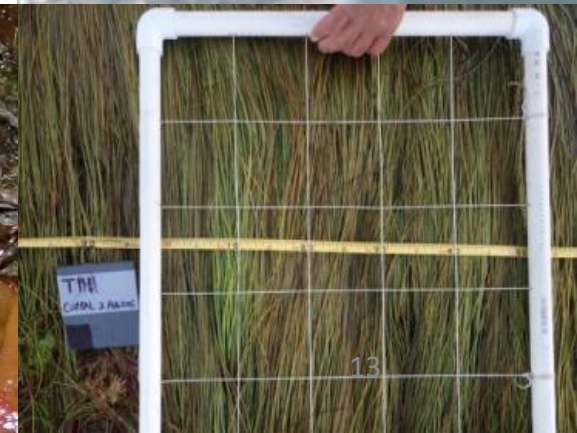
- Forensic Evaluations (oil, water, tissues)
- Trajectory Modeling
- **Shoreline Cleanup and Assessment Data**
- **LIDAR/Coastal Imagery**



Exposure/Injury

Subtidal and Fish Habitats

- Mortality Observations
- Water Chemistry
- Line 901 Oil Three Species Bioassay
- Tissue Chemistry
- Surfgrass Assessment
- Surfperch Biliary PAH Metabolites
- Grunion Spawning and Hatching
- Sheen in Kelp Canopy





Exposure/Injury

Shoreline Habitats

- Shoreline Oiling Levels (Spill Response)
- Mortality Observations
- Line 901 Oil Three Species Bioassay
- Porewater and Tissue Chemistry
- Sandy Beach Invertebrate Population Studies (UCSB)
- Rocky Intertidal Rapid Assessment Surveys (UCSC)
- Cleanup Impacts



Exposure/Injury

Birds and Marine Mammals

- Wildlife Reconnaissance with Aerial and Boat Surveys
- Live and Dead Bird/Mammal Intake Data
- Snowy Plover Oiling and Reproductive Effects
- Brown Pelican Roost Surveys and Rehabilitation Survival Studies
- Sandpiper Pier Cormorant Colony Survey
- Marine Mammal Stranding Observations




Exposure/Injury

Human Uses

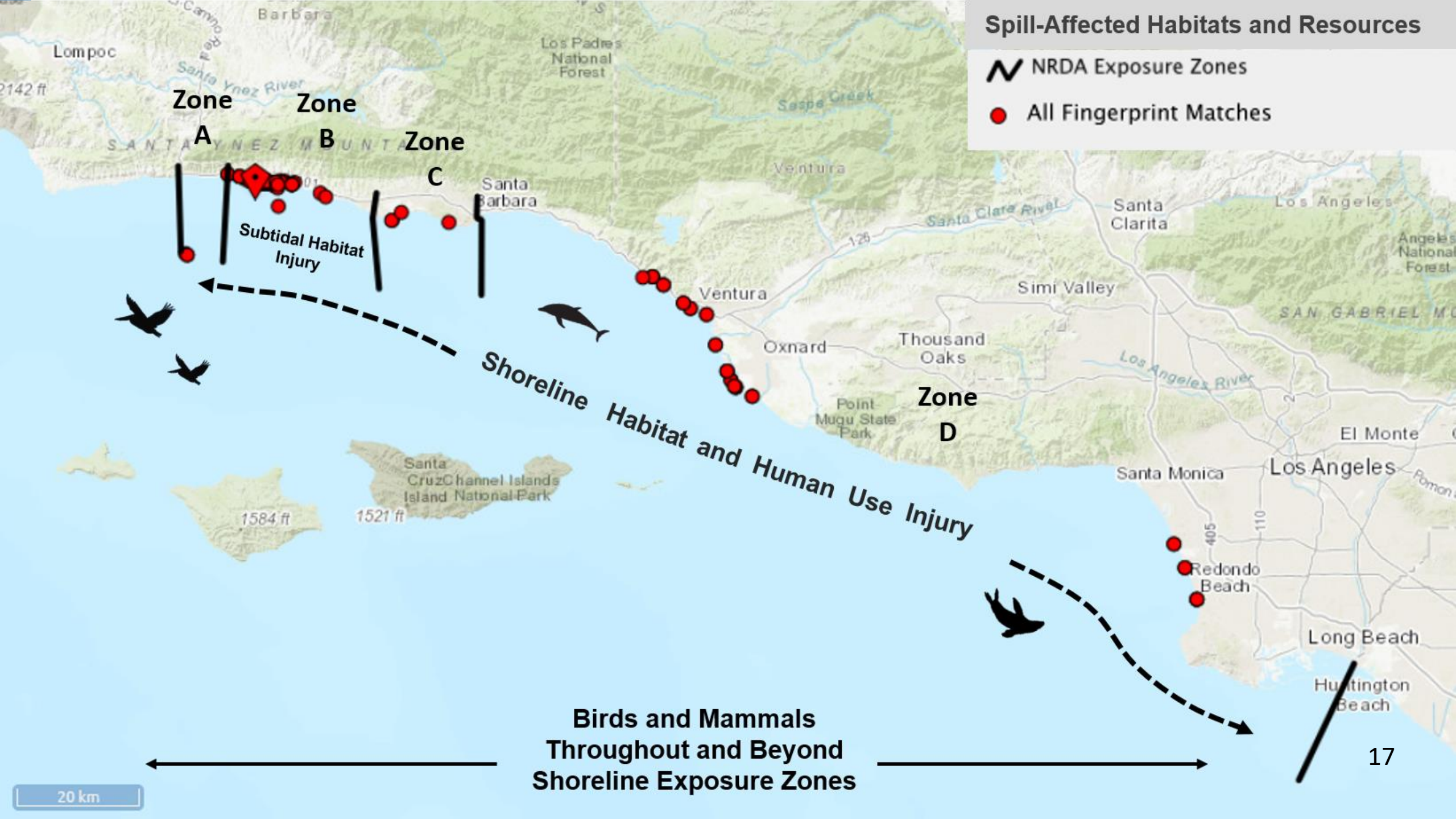
- Recreational and university research, education, and outreach loss analyses (e.g.):
 - Targeted user counts and user interviews
 - Compilation of available use data
 - Interviews with land managers from Santa Barbara to Los Angeles Counties
 - Statistical analysis of user trends
 - Economic modeling of travel costs



Spill-Affected Habitats and Resources

 NRDA Exposure Zones

 All Fingerprint Matches



**Birds and Mammals
Throughout and Beyond
Shoreline Exposure Zones**



Natural Resource Damage Assessment Process



Photo by: U.S. Coast Guard

Potential Components of a Oil Spill Case Settlement

- Outstanding clean-up costs (Response)
- Penalties
- Injunctive Relief

**USDOJ Consent Decree-related and separate comment period:
March 20, 2020
– May 20, 2020**

- Other claims
 - Public entities (lost tax revenue, lost parking fees, extra staff time, etc.)
 - Private claims (lost income, injury to property, etc.)

- Natural resource damages

**Comment period:
April 22, 2020
– June 8, 2020**

Legal Authority

- Oil Pollution Act of 1990 – oil
- Other Federal Laws (e.g. Clean Water Act)
- Lempert-Keene-Seastrand Oil Spill Act (CA)
- Other State Laws



Coordination

- Plains (Responsible Party)
- Several cities and counties
- Several bands of the Chumash Nation
- Non-government organizations
- Local and national experts



Refugio NRDA: Steps in the process

- 1) Oil Spill (May 19, 2015)
- 2) Data Collection (completed)
- 3) Injury and Damage Quantification (completed)
- 4) Public Scoping Meeting (January 2016)
- 5) Notice of Intent (March 2019)
- 6) Draft Restoration Plan (completed)
- 7) Public Meeting & Comment
- 8) Final Restoration Plan (estimated late summer 2020)
- 9) Implement Restoration Projects (2021 - onward)

**Compensation
for Spill Losses**

We Are Here



Injury & Damage Quantification For Wildlife and Habitat

Methods are Restoration-based

KEY QUESTIONS:

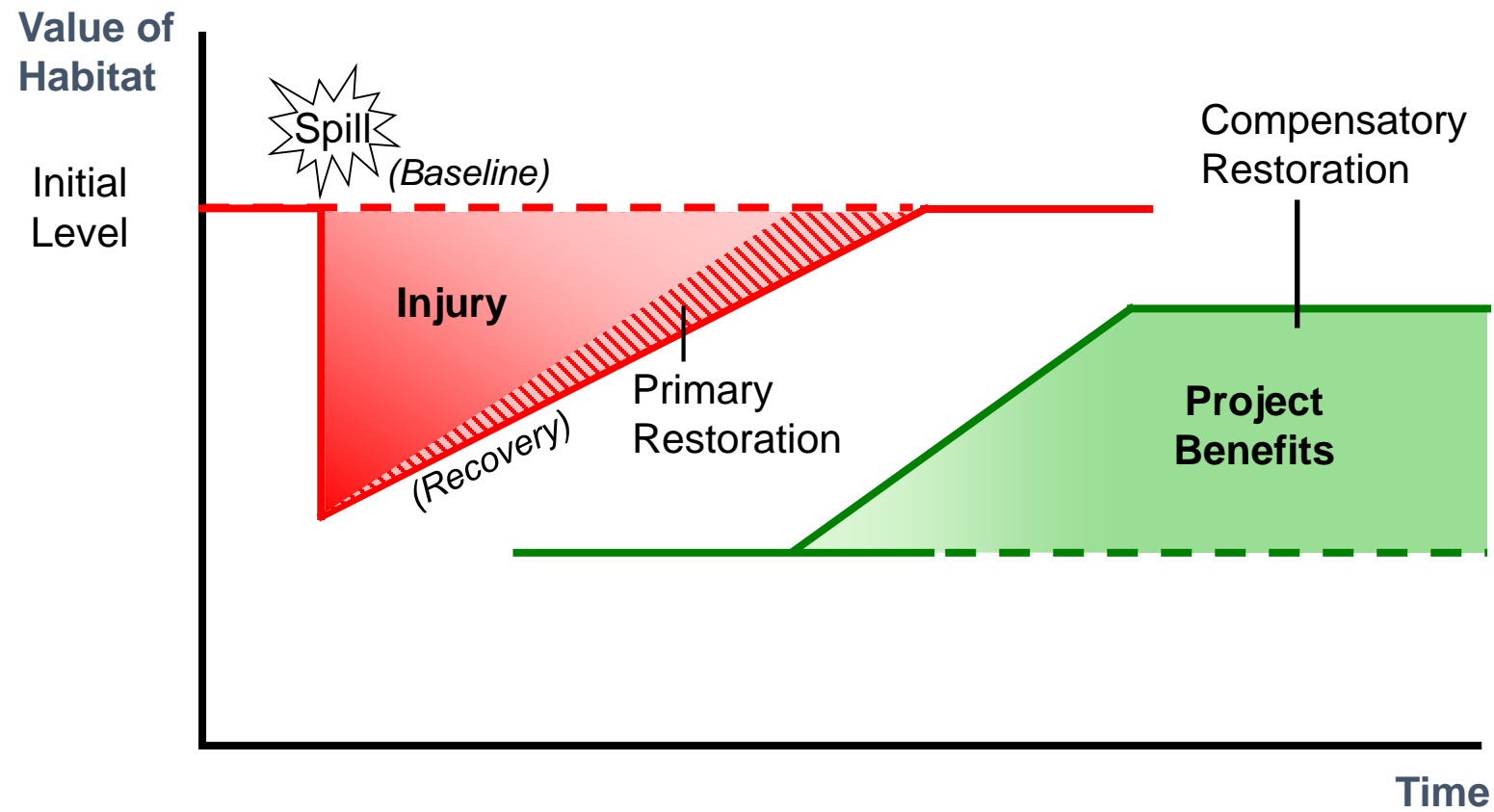
- How big of a restoration project do we need to compensate for the injury? How much will that cost?

EXAMPLE METHOD:

- Resource or Habitat Equivalency Analysis

Habitat Equivalency Analysis (HEA) is a method used to scale restoration to injuries.

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



California Trustee

Restoration Project Selection Criteria

- Nexus to Injured Resources (i.e., projects located in spill area or directly benefit species affected)
- Compliance with Applicable Laws
- Multiple Resource Benefits
- Time to and Duration of Benefits
- Avoidance of Adverse Impacts
- Likelihood of Success
- Cost Effectiveness
- Technical Feasibility
- No Duplicate or Replacement Funding
- Cultural/Historical Value
- Education/Research Value
- Effect of Project on Public Health and Safety
- Opportunities for Collaboration



Summary of Resource Categories & Damages

- Birds \$2.2 Million
- Marine Mammals \$2.3
- Subtidal and Fish Habitats \$6.1
- Shoreline Habitats \$5.5
- Human Uses \$3.9

Restoration Planning,
Implementation, Oversight \$2.0

Settlement Total: \$22 Million

Injury Assessment and Proposed Restoration Projects: Resource-by-Resource

- Birds
(Jenny Marek, USFWS)
- Marine Mammals
(Laurie Sullivan, NOAA)
- Subtidal and Fish Habitats
(David Witting, NOAA)
- Shoreline Habitats
(Bruce Joab, CDFW)
- Human Uses
(Matthew, Zafonte, CDFW)

