

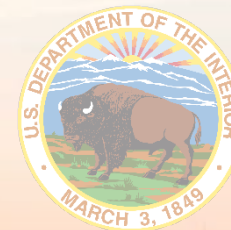
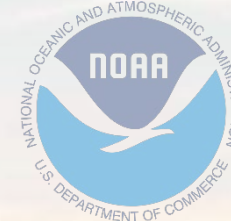
Marsh



(Natural Resource Trustees)

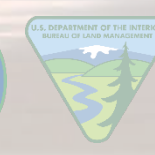
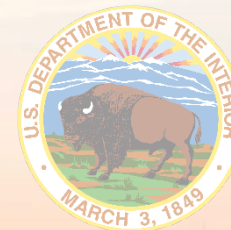
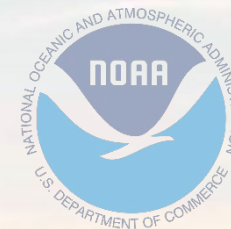
Presented by:
Colleen Grant

United States Fish and Wildlife Service



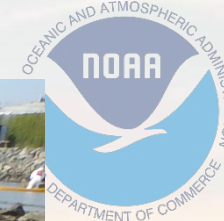
Marsh Assessment Area

- Talbert, Brookhurst, and Magnolia Marsh in Orange County;
- Creek and lagoon habitats in Crystal Cove State Park in Orange County; and
- San Elijo Lagoon and Los Peñasquitos Lagoon in San Diego County.

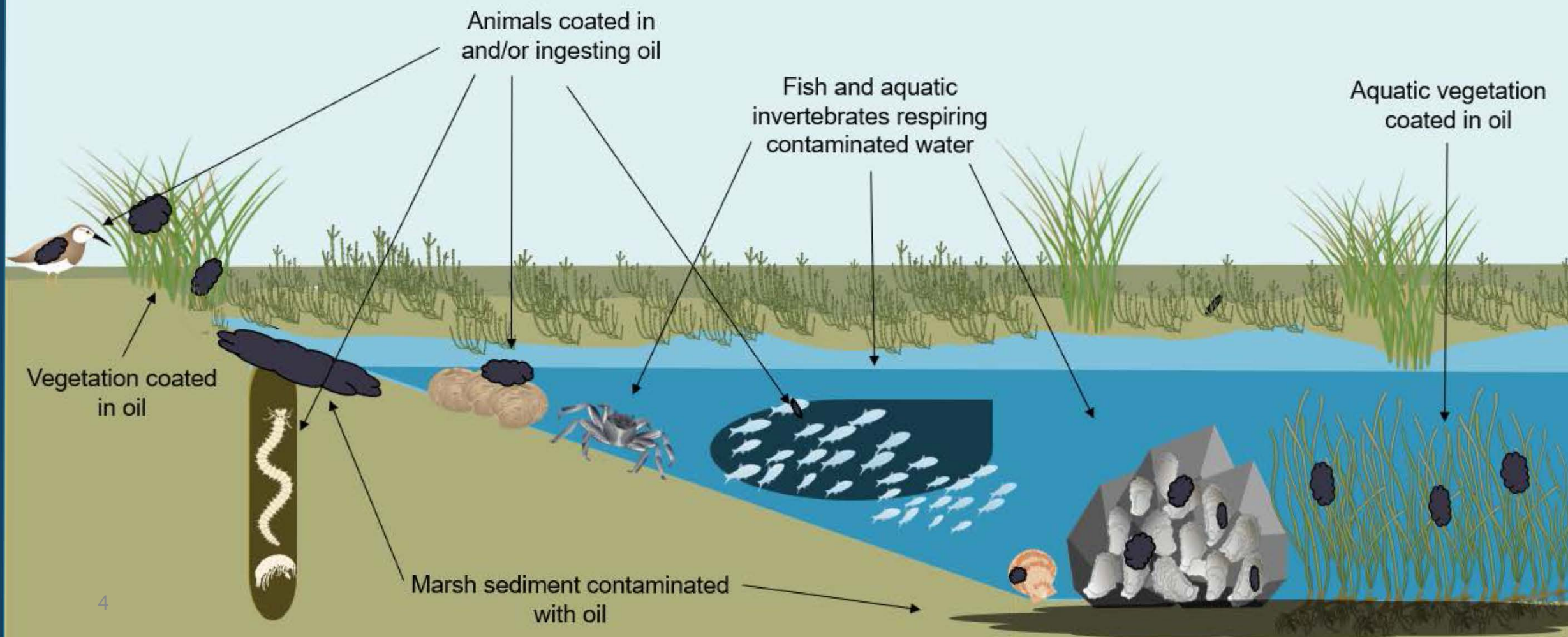


Potential Effects or Impacts

- Contaminated marsh sediment
- Reduced abundance and diversity of fish
- Reduced abundance of clams and oysters
- Reduced diversity and altered community composition of infauna (animals living in sediments such as worms)



Pathway of Injuries – Direct Impacts of Oiling



Pathway of Injuries – Impacts of Clean-up

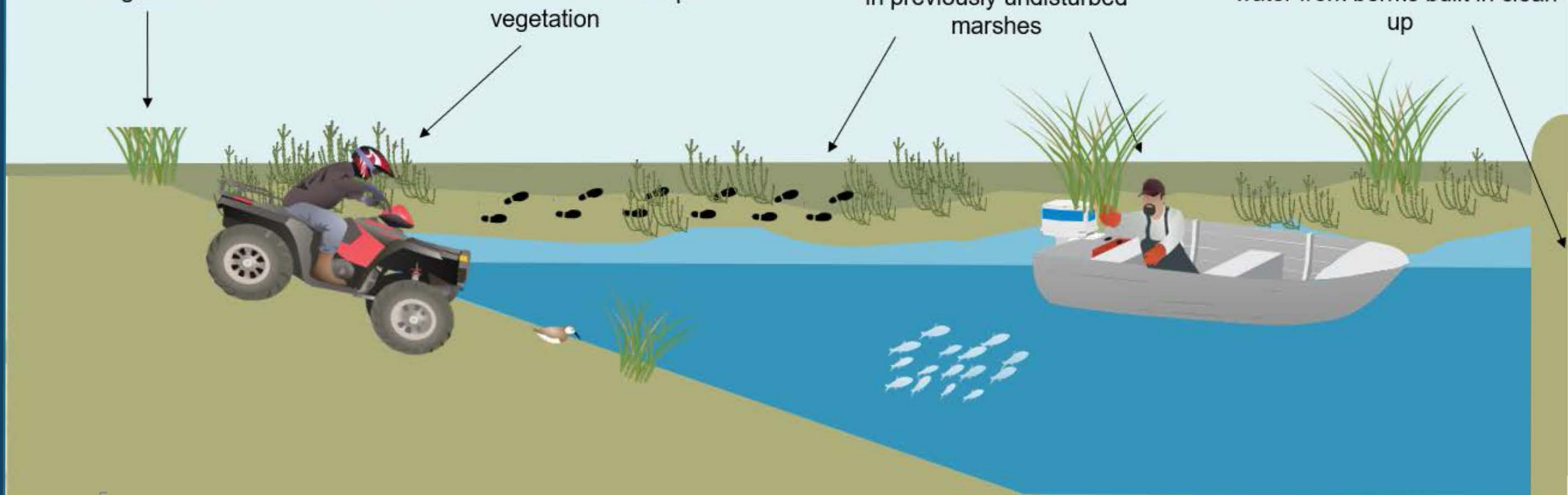


Cut and removed
vegetation

Motorized vehicles used in areas
that could hit wildlife or trample
vegetation

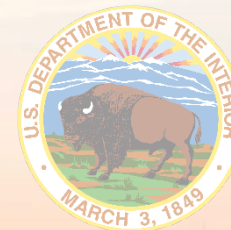
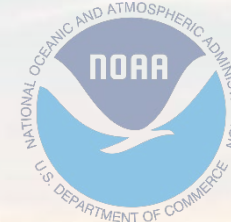
Boat ramps or trails created
in previously undisturbed
marshes

Decreased dissolved oxygen in
water from berms built in clean-
up



Preliminary Observations & Findings

- Oil compounds in water, sediment, and animal tissues following the incident
- Observed oiled and cut vegetation
- Altered abundance and diversity of fish
- Reduced abundance of invertebrates



Next Steps or Tasks

- Chemical analysis of samples collected in October 2022
- Compare chemical samples from the spill to those collected in October 2022
- Analyze fish seining survey data and cores for sediment dwelling animals collected in Winter 2022
- Compare biological samples and surveys from the time of the spill to both pre-spill data and data collected in Winter 2022
- Integrate cleanup data with biological and chemical data
- Evaluate potential restoration projects

