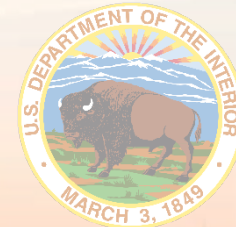
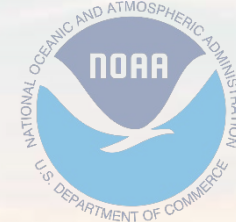


RESOURCE GROUP

Sandy Beach

Presented by:
Daniel Orr

California Department of Fish and Wildlife,
Office of Spill Prevention and Response



Potential Effects or Impacts



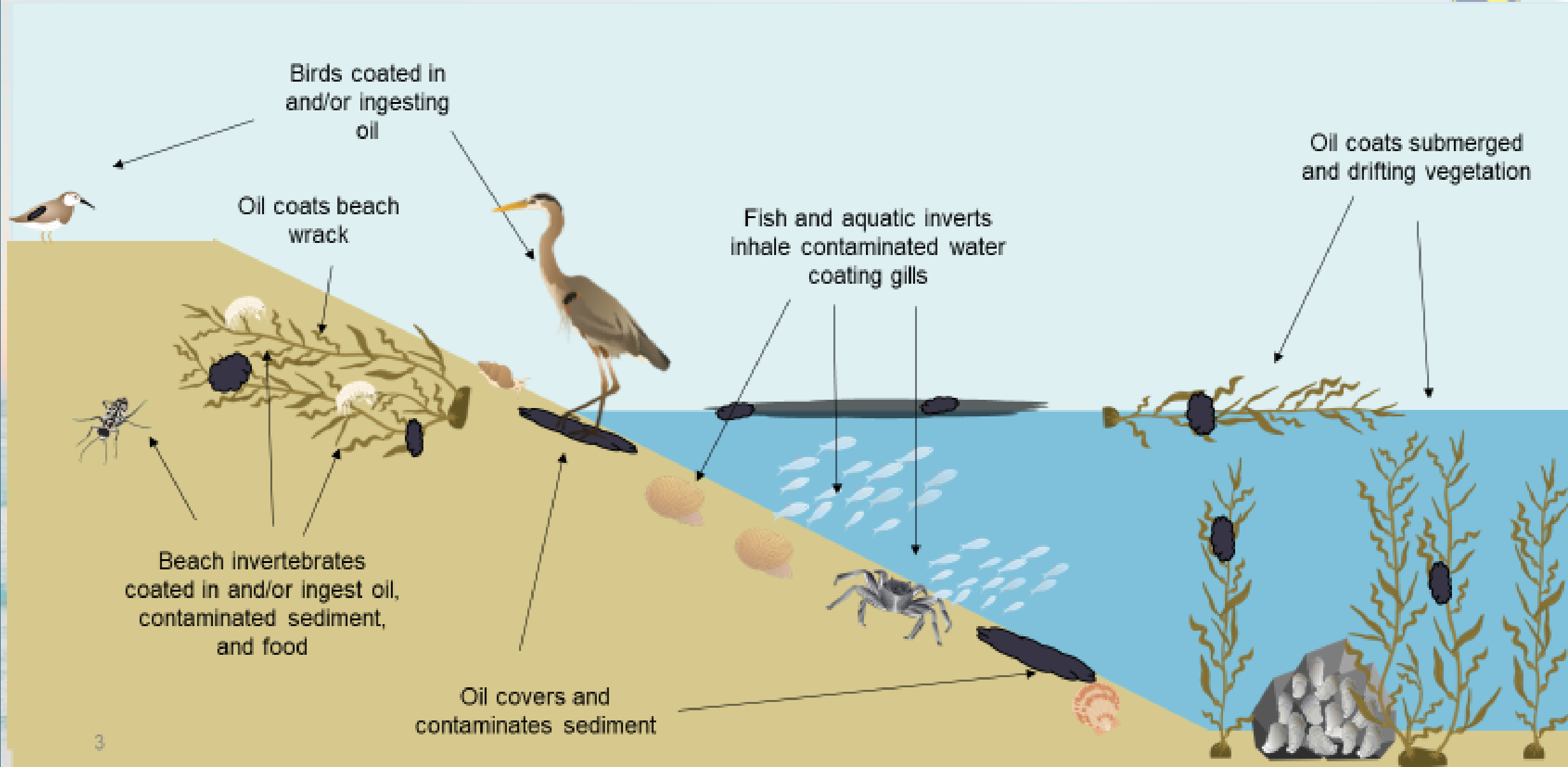
- Contaminated beach sediment
- Reduced diversity and altered community dynamics of sand dwelling animals
- Reduced abundance and diversity of birds and fish
- Reduced abundance and increased bioaccumulation of oil compounds in mollusks and bivalves



Photo Credit: P00547 Natural Resource Trustees CDFW-OSPR



Pathway of Injuries -Direct Impacts of Oiling



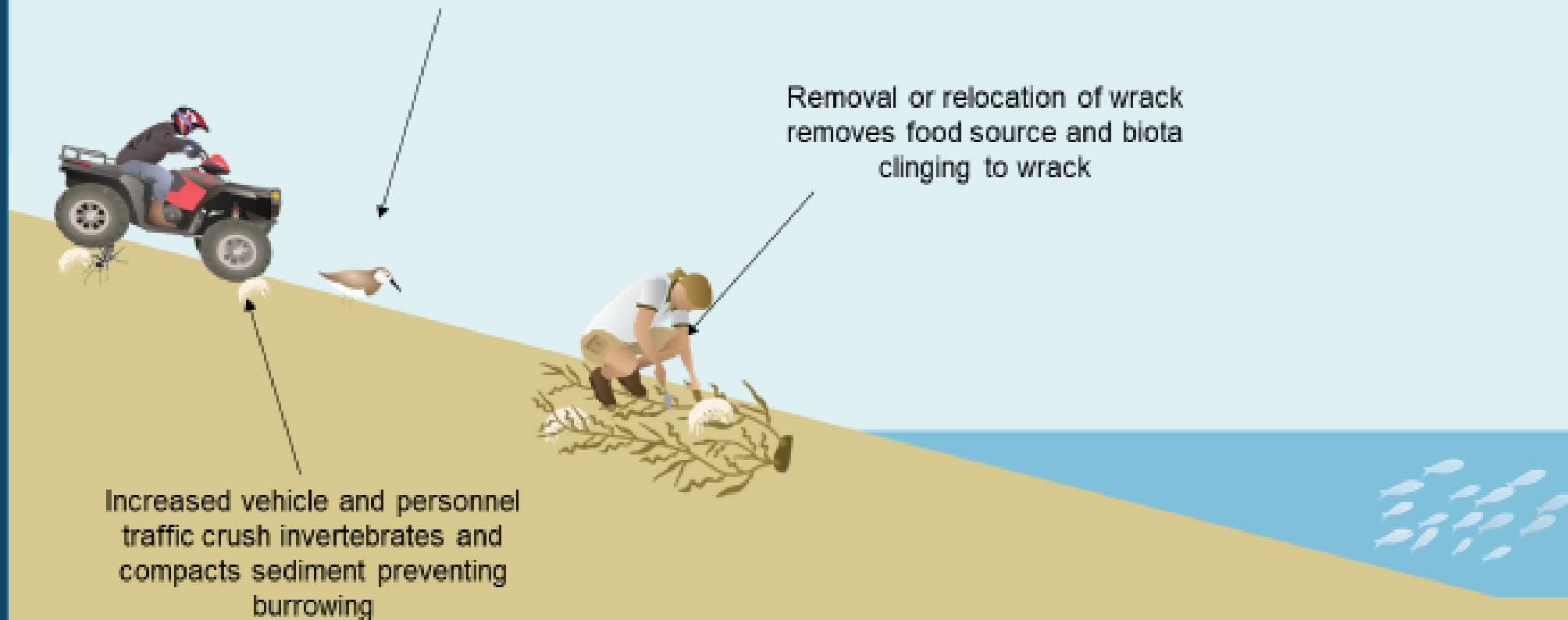
Pathway of Injuries - Impacts of Clean-up



Using motorized vehicles in areas that could hit wildlife

Removal or relocation of wrack removes food source and biota clinging to wrack

Increased vehicle and personnel traffic crush invertebrates and compacts sediment preventing burrowing

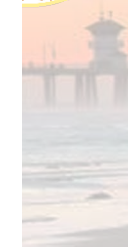
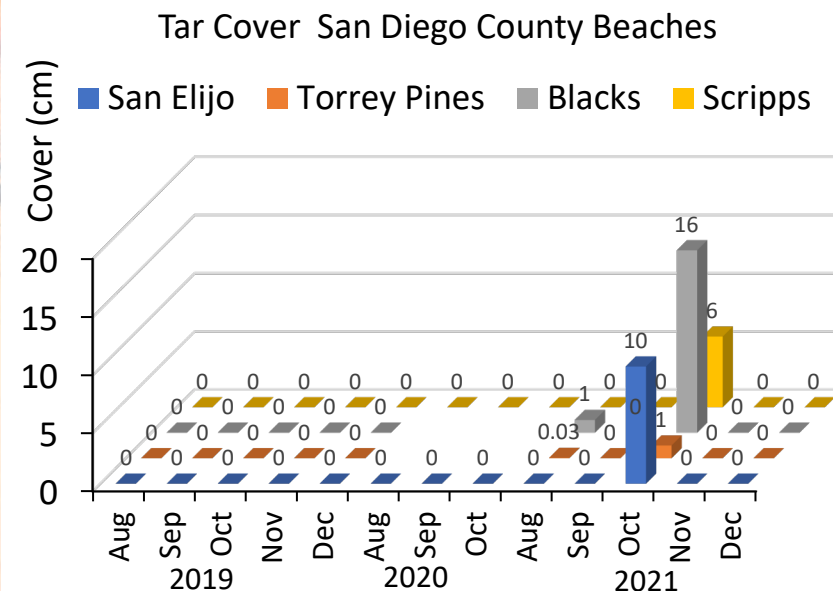
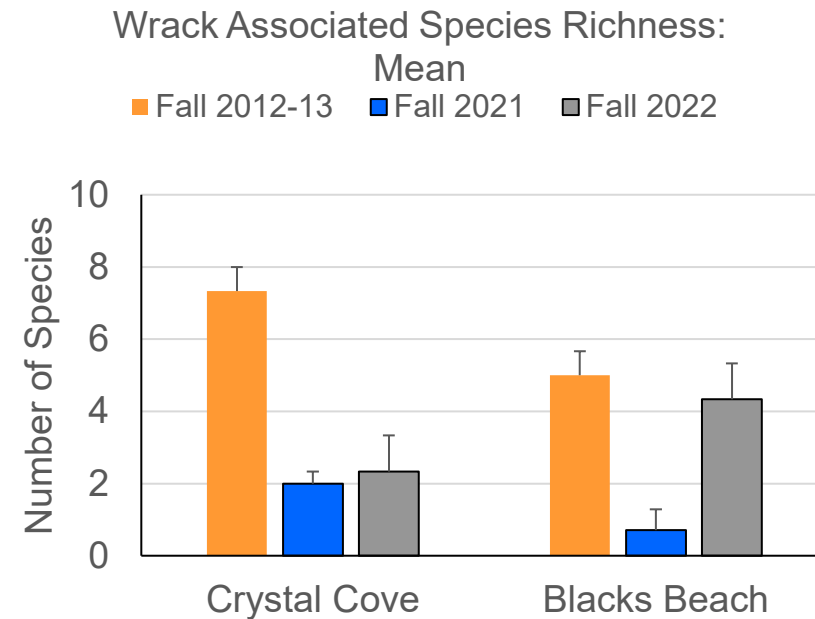


Preliminary Observations & Findings

- Oil compounds in pore water, sediment, and animal tissues in the weeks immediately following the incident
- Increased occurrence of tar balls
- Significantly reduced species richness of beach invertebrates



Photo credit: Jenny Dugan UCSB



Next Steps or Tasks

- Chemical analysis of samples collected in October 2022
- Analysis of beach invertebrate survey cores collected in 2022
- Comparison of chemical and biological surveys from the time of the spill to those collected in October 2022
- Spatial integration of shoreline cleanup assessment technique data with beach biota data
- Over 300 samples collected across 764 miles of coastline
- Evaluate potential restoration projects

