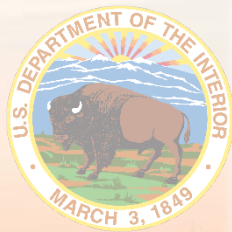


Fish, Subtidal and Water Column

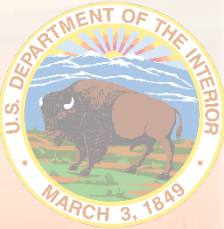
Presented by:
April DaSilva

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



Potential Effects or Impacts

- Oil impacts the quality of nearshore, subtidal and water column habitats
- Oil exposure in those habitats may impact organism survival, growth, reproduction, immune function and other physiological processes
- Co-exposure to oil and sunlight enhances toxicity in some organisms
- Oil coating subtidal vegetation and organisms can cause chemical exposure and smothering



Pathway of Injuries – Water Column

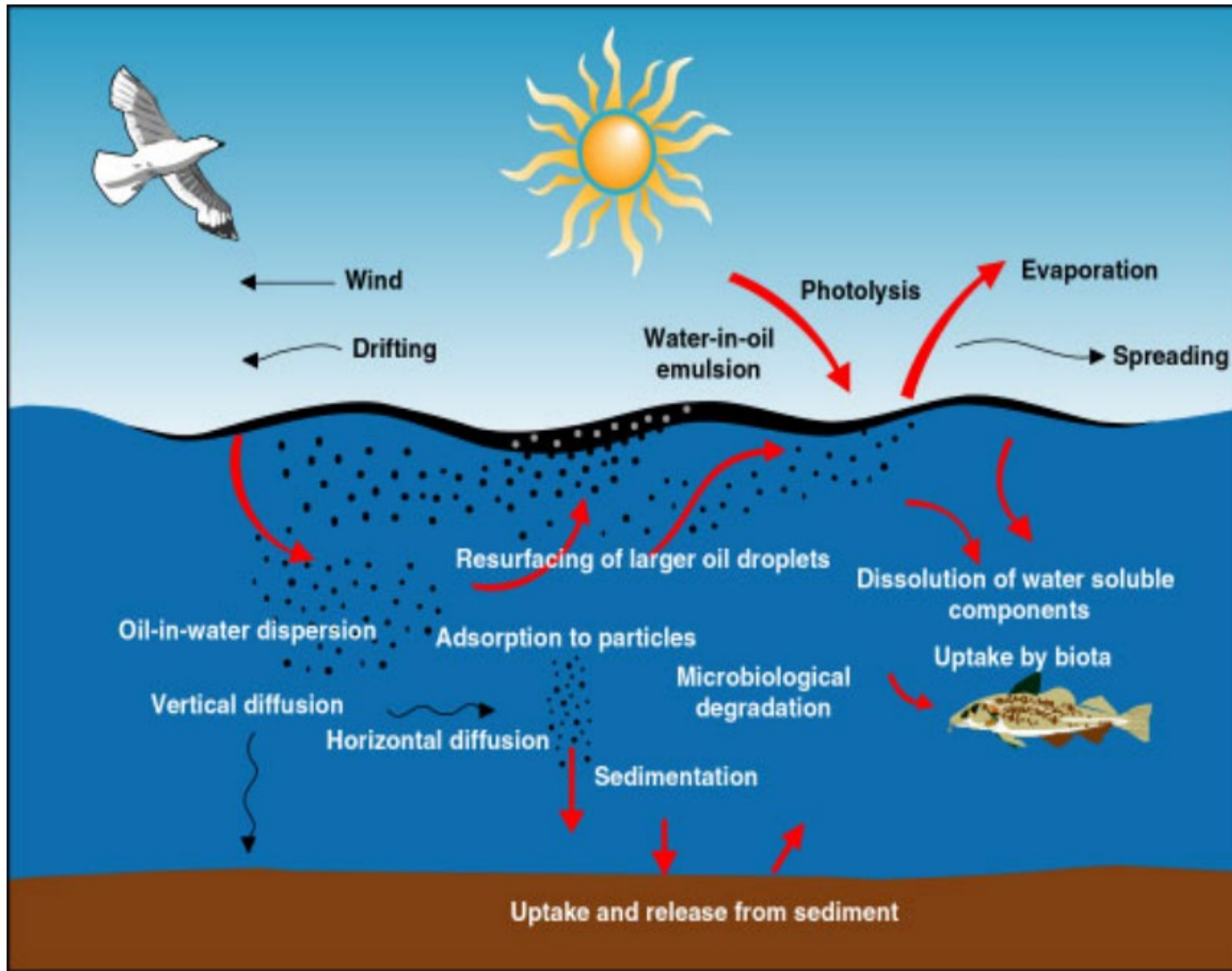
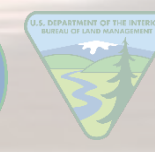
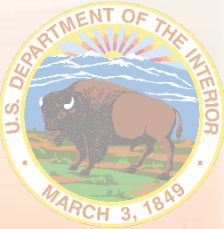
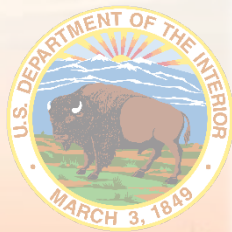
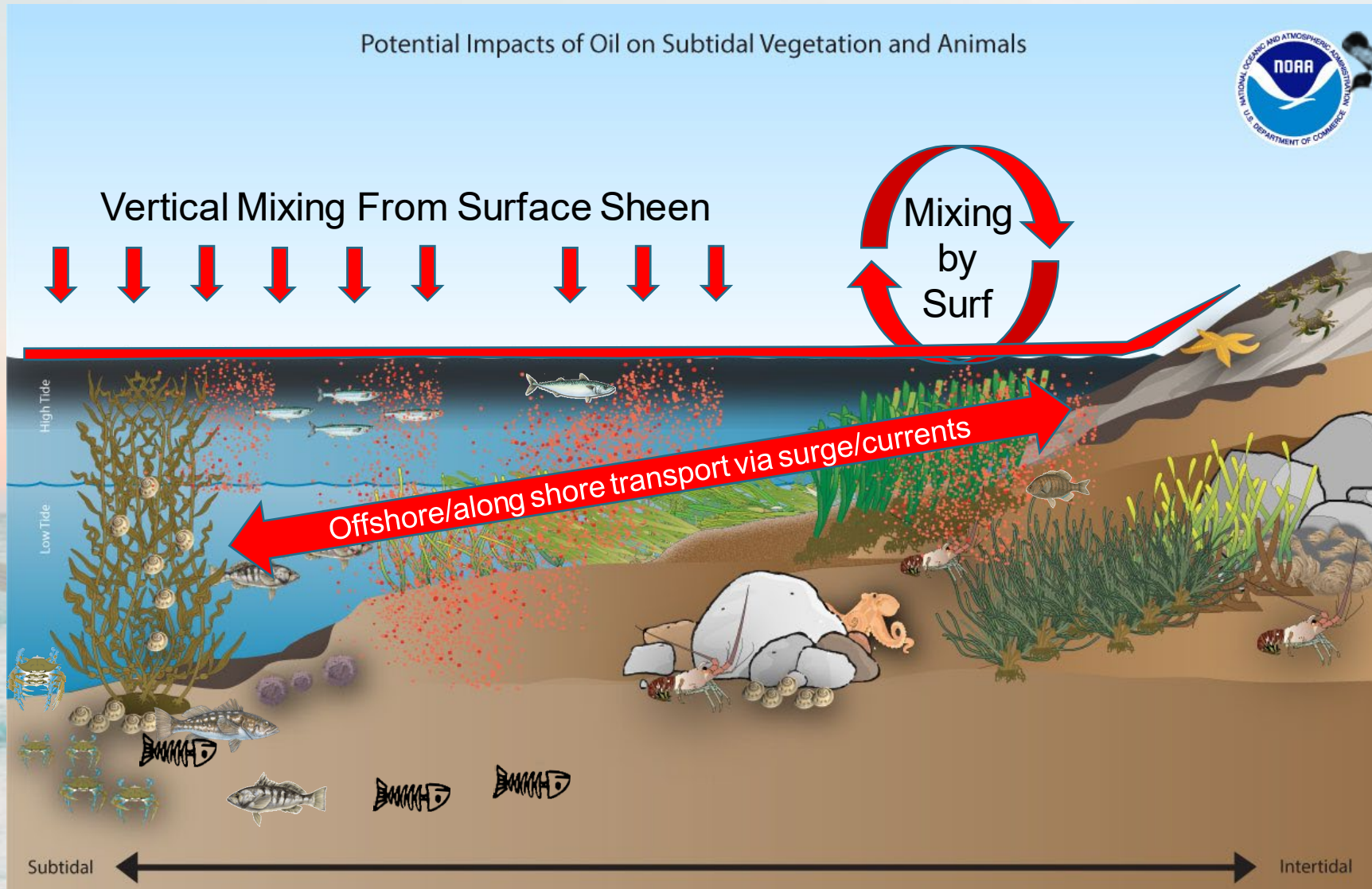


Figure from: Daling, P.S., Aamo, O.M., Lewis, A., Strøm-Kristiansen, T., 1997. SINTEF/IKU oil-weathering model: predicting oil properties at sea. In: Proceedings 1997 Oil Spill Conference. API Publication No. 4651, Washington DC, pp. 297-307.



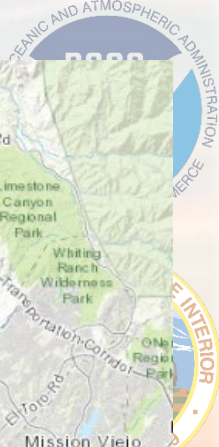
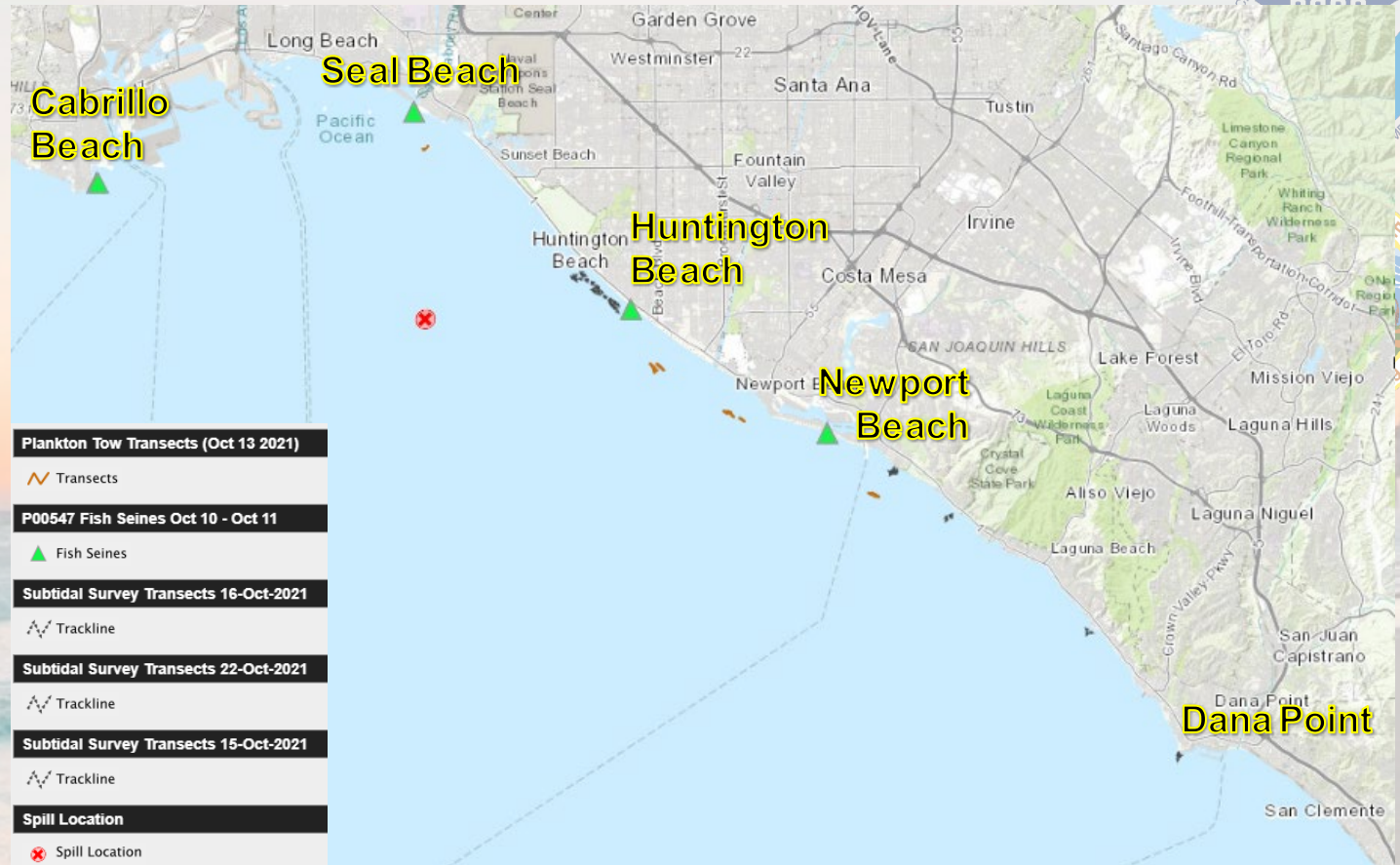
Pathway of Injuries – Nearshore and Subtidal



Preliminary Observations & Findings



- Oil was not observed on subtidal sediments, plants or animals
- Dead fish and invertebrates were found stranded on beaches
- Nearshore fish contained chemicals indicative of oil exposure
- Offshore plankton samples found fish eggs and larvae in the spill area



Next Steps or Tasks

- Continue evaluating data and potential injuries caused by oil
- Use a model to evaluate oil movement and effects in offshore and nearshore habitats
- Determine:
 - (1) the oil spill's spatial extent and duration on the water's surface and
 - (2) impacts to fish and water column habitat and resources
- Evaluate potential restoration projects

