

Natural Resource Damage Assessment for the North Cape Oil Spill



CLIENT:

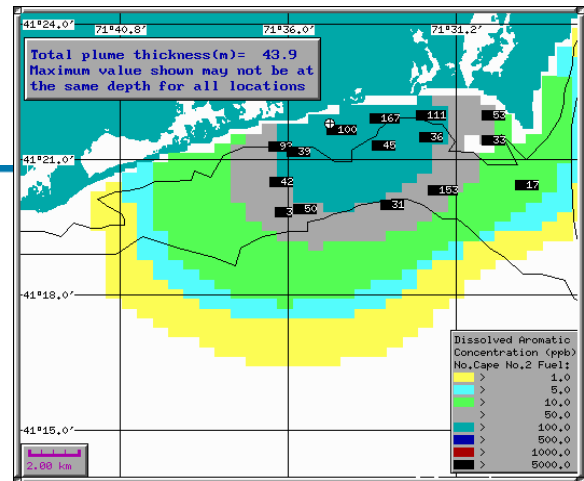
National Oceanic and Atmospheric Administration (NOAA)

PROJECT #:

1996-065

PROJECT ELEMENTS:

- Natural Resource Damage Assessment (NRDA)
- Oil spill impact modeling using SIMAP
- Model result validation against observation data
- Field data collection



PROBLEM. PURPOSE.

The barge *North Cape* ran aground during a large storm on January 19, 1996 on the south coast of Rhode Island. Approximately 828,000 gallons of home heating oil (No. 2 fuel oil) was spilled into the surf zone where waves reached 15-20 feet in height. The heavy surf entrained much of the oil into the water column. It was evident that there was significant injury to birds and marine biota caused by the spill, in that large numbers of lobsters, surf clams, and other organisms washed up on the beaches.

SCIENCE. SERVICES. SOLUTIONS.

A Natural Resource Damage Assessment (NRDA) was undertaken by NRDA Trustees, including the lead Trustee, the National Oceanic and Atmospheric Administration (NOAA), the U.S. Department of the Interior, and the State of Rhode Island. This NRDA was the first undertaken under the newly promulgated NRDA Rule under the Oil Pollution Act of 1990 (OPA). The NRDA was performed cooperatively with the Responsible Party (RP), in accordance with the Rule.

ASA is involved in the NRDA in several ways, under contract to NOAA. ASA performed preliminary NRDA field data collection in the first 2 months following the spill. Dr. Deborah French-McCay was appointed Chair of the Marine Technical Working Group (MTWG), which was charged with estimating injuries to marine organisms caused by the spill. She organized the injury quantification analyses, held meetings, and reviewed final documents produced by the MTWG. She also evaluated comments by the RP and provided litigation support when needed.

ASA also performed computer modeling of oil fates and acute toxic effects, which were the basis of injury quantification for marine organisms. The fates and effects modeling was based on models previously developed by ASA and on existing literature and site-specific information. The model system, SIMAP, was derived from the Natural Resource Damage Assessment Model for Coastal and Marine Environments (NRDAM/CME), which is a tool developed for NRDAs of small spills under CERCLA and OPA. SIMAP allows the use of site-specific geographical, chemical, toxicological and biological data. These site-specific data were incorporated into the *North Cape* assessment of injuries. Model results were validated against observational data taken after the spill, including water concentrations and numbers of lobsters killed.

The toxicological model was also used to evaluate injuries in the salt ponds along the Rhode Island coast. Observations of water and sediment concentrations in the ponds were projected over time. These data was used by ASA in the toxicity assessment.

PRODUCTS. RESULTS.

Natural Resource Damage Assessment (NRDA) delivered to NOAA