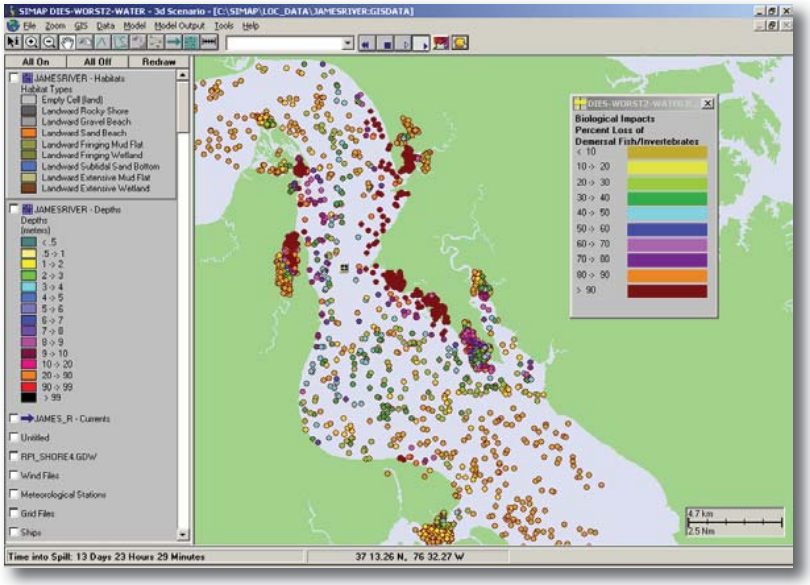
Natural Resource Damage Assessment Services

ASA develops computer models for U.S. government regulations that evaluate the physical fates, biological effects, and economic damages of oil and chemicals in marine and fresh water environments. There are existing models with required data included, applicable to small spills in U.S. coastal and marine environments and the Great Lakes, which are incorporated or referred to in CERCLA and OPA Natural Resource Damage Assessment (NRDA) regulations. ASA also provides NRDA services using modifications of these models to incorporate site- and event-specific data for injury quantification, and to evaluate the damages as restoration costs.

Background

ASA developed "Type A" computer models for the U.S. government, which are incorporated in CERCLA and NRDA regulations published in1996 by U.S. DOI. These models are used in simplified and more detailed damage assessments for chemical spills under CERCLA, and for injury quantification and restoration planning for oil spills under OPA. After the regulatory models were completed, ASA model development continued as SIMAP for oil spills and CHEMMAP for chemical spills. In the Type A models, the injury to natural resources is quantified with and without restoration and replacement actions. The economic valuations in Type A models are based on in-situ use values for calculating compensable values (damages due to injuries). For SIMAP and CHEMMAP, a separate habitat restoration model is used.

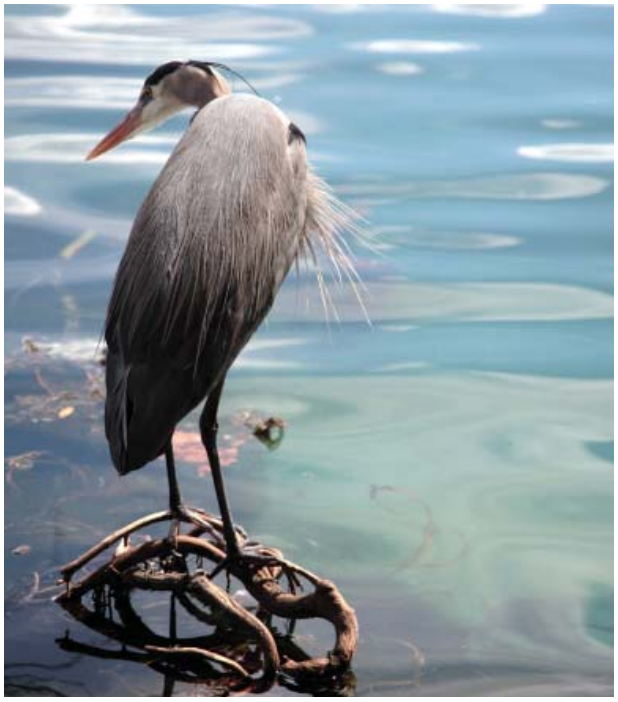


Habitat Restoration Model

Increasingly, damage assessments have focused on costs of restoration. ASA has developed a habitat restoration model, to be used in conjunction with SIMAP and CHEMMAP, that calculates the amount of restoration needed to compensate for injuries to fish, invertebrates, aquatic birds, and other wildlife and habitats, using production as a metric to balance restoration gains against losses due to the spill. Population modeling is used for scaling of species-specific restoration projects.

ASA has been contracted since 1991 to the NOAA Damage Assessment Center to provide support services in NRDA activities. Tasks under the contract have included:

- training and preparation activities
- preparation and review of reports
- consulting activities
- on-site NRDA activities for particular discharges
- injury quantification studies
- restoration scaling
- litigation support



ASA provides site- and event-specific modeling assessments to NOAA and other clients, usually involving injury quantification and restoration scaling (rather than economic valuation, in keeping with the OPA NRDA rule, which emphasizes this approach). ASA has performed these services for numerous spills, assisting government trustees in claims against responsible parties. ASA has also performed cost-benefit analyses and NRD risk assessments using probabilistic (Monte Carlo) approaches to determine the range of potential injuries and damages that might result from spills.

Natural Resource Damages

Damages include losses to commercial and recreational fishing, hunting of waterfowl, viewing of birds and mammals, and beach use. Total damages include lost use values associated with injuries pending recovery plus the costs of restoration. In addition, damages based on restoration costs are calculated for lost assimilative capacity of the water and sediments while spilled contaminant is present.

ASA science, services, and solutions provide functional answers to the world's toughest questions confronting industry, academia, energy, environment, defense and security. ASA's innovative technology solutions are combined with over 30 years of service experience with issues including: water quality management, biological assessment, and oil and hazardous materials modeling. ASA develops and applies modeling software, technology platforms, and data management solutions to solve problems relating to marine, freshwater, air, and land resources.

ASA's family of environmental modeling tools that are available for licensed use and customization include: AIRMAP™, CHEMMAP™, HYDROMAP™, OILMAP™, SARMAP™, SIMAP™, MUDMAP™, WQMAP™, and EDS: Environmental Data Server™.

ASA's clients include governments, universities, research institutes, and private companies. ASA has a proven track record in providing high quality scientific support services to these clients in support of their global operations.

Headquartered in South Kingstown, Rhode Island, ASA also has offices in Seattle, Brazil, and Australia. For more information visit, www.asascience.com.

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