

HEIDI H. DUNAGAN
Biologist II

Mrs. Dunagan is a biologist at Research Planning, Inc., (RPI) with an interdisciplinary background in marine mammal biology and environmental policy. She has worked extensively on several coastal oil spills and associated Natural Resource Damage Assessments to determine injury to the shoreline and coastal resources. She has extensive knowledge of the Endangered Species Act and provides support to the Department of Transportation's Unusually Sensitive Areas mapping project by identifying habitats of threatened and endangered species located near oil pipelines. Mrs. Dunagan has been the lead biologist on several of RPI's Environmental Sensitivity Index (ESI) and Resource Mapping projects which include compilation of existing information on spatial distribution and seasonality of coastal biological and socio-economic resources. Mrs. Dunagan also has a clear understanding and knowledge of Geographic Information Systems (GIS) and the use of these tools in the analyses and management of natural resources.

EDUCATION

M.S., Environmental Studies, University of Charleston / Medical University of South Carolina, Charleston, SC., 1999.

B.S., Biological Sciences, Emory University, Atlanta, Ga., 1997.

PROFESSIONAL EXPERIENCE

- 2000 to present: Biologist II, Research Planning Inc., Columbia, SC.
- 1998-2000: Research Biologist, National Oceanic and Atmospheric Administration, National Ocean Service Science Center for Coastal Environmental Health and Biomolecular Research, Charleston, SC.

SELECTED PROJECT DESCRIPTIONS

NOAA Office of Response and Restoration:

Mrs. Dunagan has been a part of the Scientific Support Team to the U.S. Coast Guard provided by the National Oceanic and Atmospheric Administration (NOAA) for oil and chemical spills for over 6 years.

Acted as Shoreline Cleanup Assessment Team (SCAT) leader for several oil spills (Charleston *Evergreen* spill, Savannah River Spill). Participated as an active SCAT team member for the *Bouchard No. 120* spill in Buzzard's Bay, Massachusetts and a spill in Calcasieu Lake, Louisiana.

Wrote numerous "Resources at Risk" analyses for oil spills and spill drill, compiling information on oil behavior, threatened and endangered species, and sensitive coastal habitat locations.

Compiled a life history report on population parameters and injury quantification for the Patuxent River diamondback terrapin turtle population in response to the Chalk Point/ Swanson Creek oil spill.

Assisted in the development of a field protocol for measuring and quantifying impacts to birds affected by oil.

Natural Resources Mapping/GIS Projects:

Mrs. Dunagan has served as lead biologist on the following ESI and Coastal Resource Mapping Projects: Florida, New Hampshire, Hudson River, and Virginia-Chesapeake Bay. She also assisted in the biological compilation of the Honduras and Guatemala ESI and Resource Mapping project. Her role as lead biologist on multiple ESI projects requires extensive correspondence with biological and socio-economic resource experts from several government, university, and private agencies. In this capacity she was responsible for compiling all of the coastal biological and socio-economic information that is incorporated in the atlases. She has extensive experience in natural resources data collection and interpretation, as well as a working knowledge of Geographic Information Systems (GIS) software, particularly ArcView® and ArcMap®.

Currently serving as the lead biologist for the Department of Transportation's Research and Special Programs Administration's Best Management Practices Project. This involves evaluating threatened and endangered species range data and human interaction issues, as well as coordinating with the U.S. Fish and Wildlife Service on appropriate practices for species protection during pipeline repairs.

Served as a project biologist for the Department of Transportation's Unusually Sensitive Areas (USA) nationwide mapping project. Collected and analyzed data for threatened and endangered species, and shorebird and waterfowl concentration areas. Using Geographic Information Systems and ArcView® software, inspected USA models and wrote final reports for each state.

Served as lead biologist for identifying High Consequence Areas (HCAs) for Florida Power & Light's Integrity Management Program. Evaluated three hazardous liquid pipelines and the HCAs that would be impacted during a release from the pipelines. Prepared the Vulnerability Analysis for Florida Power & Light's power plants as part of the Facility Response Plans.

Natural Resource Damage Assessment

Currently serving as the NOAA Trustee representative on the Shoreline Injury Assessment Team for the *Bouchard No. 120* oil spill in Buzzard's Bay, Massachusetts and Rhode Island as well as the *Athos* oil spill in the Delaware River. This requires evaluating the different shoreline habitats for degree of oiling and determining the importance of these habitats for coastal resources, such as shorebirds and invertebrates.

Currently compiling the Damage Assessment and Restoration Plan for the Howard/White Unit No. 1 oil spill on the Obed Wild and Scenic River, Morgan County, Tennessee. Participated in the determination of natural resource injury for the spill during the Preassessment Phase. This included the evaluation of important aquatic resources and riparian habitat along Clear Creek, critical habitat for several threatened and endangered species (e.g. spotfin chub). Assisted the Trustees in preparing the final Preassessment Phase report, which was a compilation of the sampling and analysis of the ephemeral data.

Coastal and Wildlife Biology Research Projects:

Currently participating in a Minerals Management Service study on the impacts of alternative energy sources on marine life, specifically marine mammals and sea turtles.

Assisted lead biologist in conducting a literature review of coral reef population parameters and recovery time periods after physical disturbance.

Participated in a life history study of bottlenose dolphins along the South Carolina coast which required performing necropsies of stranded dolphins, live dolphin captures, telemetry tracking projects, and photo-identification surveys. Studied the interaction of marine mammals and fisheries along the South Carolina coast.

Participated in the fieldwork to assess impacts of dredging operations to the Keta Lagoon, Ghana, a Ramsar site. Work included measurement of water quality information, bird and vegetation surveys, and assessment to fisheries and wildlife in the vicinity of the lagoon.

Participated in a feral hog study for the National Park Service and Clemson University in the Congaree Swamp National Monument located in South Carolina. This effort required extensive field work to evaluate and map non-native feral hog impacts on wetland communities, native vegetative, threatened and endangered species, and aquatic habitats that are subject to severe damage from hog rooting and other behavior.

Publications:

Hinkeldey, H., J. Michel, N. Meade, and P. McGowan 2003. Injury to birds and diamondback terrapins resulting from the Chalk Point Oil Spill, Patuxent, Maryland. 2003 International Oil Spill Conference Proceedings, American Petroleum Institute, Washington, DC. 12pp.

Hinkeldey, H. S. Zengel, E. Inouye, C. Sames, and S. Hall, 2003. Unusually Sensitive Areas (USAs) for ecological resources: maps and GIS data for the United States. 2003 International Oil Spill Conference Proceedings, American Petroleum Institute, Washington, DC. 14 pp.

Michel, J., S. Zengel, H. Hinkeldey, and D. Helton. 2003. Ephemeral data collection during the emergency phase of a spill: protocols and design methods for NRDA. 2003 International Oil Spill Conference Proceedings, American Petroleum Institute, Washington, DC.

Michel, J., Z. Nixon, and H. Hinkeldey, 2002. Recovery of four oiled wetlands subjected to in situ burning. Report prepared for the American Petroleum Institute, Washington, DC. 71 pp.

Zengel, S. and H. Hinkeldey, 2002. Coral Reef Recovery: Literature Review and Recommendations for Damage Assessment and Restoration Planning. Report to NOAA Damage Assessment Center, Silver Spring, MD.

Hinkeldey, H. and W.E. McFee, 1999. Age Determination Using Acid-Etched Teeth of the Pygmy Sperm Whale (*Kogia breviceps*). Marine Mammal Conference, 13th Biennial Meeting, Maui, Hawaii.

Presentations:

International Oil Spill Conference; April 2003, Vancouver, British Columbia

- Unusually Sensitive Areas (USAs) for Ecological Resources: Maps and GIS Data for the United States
- Injury to Birds and Diamondback Terrapins Resulting from the Chalk Point Oil Spill, Patuxent River, Maryland