

ZACHARY J. NIXON
GIS Analyst/CZM Specialist

Mr. Nixon is a Geographic Information Systems (GIS) / Coastal Zone Management (CZM) Analyst, specializing in the use of spatial and geostatistical analysis for coastal and environmental assessments, as well as oil spill planning and response. He has expertise in the field collection and analysis of a wide variety of coastal and environmental data. He has been part of RPI's support team since 1996, providing expertise in spatial analysis and GIS for coastal zone and environmental management. Mr. Nixon led the development and deployment of an oiling condition field data collection application, as well as participated in the sampling design, for the UNCC Survey of the Saudi Arabian coastline. Mr. Nixon has been involved in the Unusually Sensitive Areas Project for the Federal Department of Transportation, and the Louisiana Gulf-wide Information System for Louisiana State University and the Minerals Management Service. He has also been involved in the production of multiple Environmental Sensitivity Index (ESI) and coastal resource atlases, and participated in the adoption of FGDC Content Standards for Digital Geospatial Metadata at RPI.

EDUCATION

B.S., Marine Science, University of South Carolina, Columbia, S.C. (1997).

PROFESSIONAL EXPERIENCE

Environmental Sensitivity Index (ESI) Mapping:

2002: Project Analyst, Florida ESI Maintenance Project. Photo-interpreted shoreline geomorphology for portions of coast of Florida.

2001: GIS Coordinator, Honduras Coastal Resource mapping. Compiled and synthesized geomorphic, biological, and socioeconomic data for coastal resource atlas.

2001: GIS Coordinator, Guatemala Coastal Resource mapping. Compiled and synthesized geomorphic, biological, and socioeconomic data for coastal resource atlas. Conducted in-country reviews with local resource experts.

2001: Project Analyst, Hawaii ESI Mapping. Compiled and synthesized geomorphic, biological, and socioeconomic data for coastal resource atlas. Assisted in the development of a quantitative spatial accuracy assessment for coastal geomorphic mapping.

1999-2001: GIS Coordinator, LSU Louisiana Gulf-wide Information System. Collected, compiled and synthesized geomorphic, biological, and socioeconomic data for coastal resource atlas. Assisted with fieldwork for shoreline geomorphic classification.

1997-1998: Project Technician, El Salvador Coastal Resource mapping. Compiled and synthesized geomorphic, biological, and socioeconomic data for coastal resource atlas.

1996-1997: Project Technician, St. Johns River ESI mapping. Compiled and synthesized geomorphic, biological, and socioeconomic data for ESI atlas.

1996: Project Technician, Georgia ESI mapping. Compiled and synthesized geomorphic, biological, and socioeconomic data for ESI atlas.

Spill Planning, Response Tools, and Environmental Assessments:

2002-2003: Project Analyst/Geomorphologist, Arabian Gulf UNCC Gulf War Shoreline Survey. Participated in design of sampling methodology, database structure, and data collection applications, and coordinated personnel for collection and geostatistical analysis of oil-contamination and coastal geomorphology data.

2002: Project Analyst, NOAA Abandoned Vessels Survey. Provided spatial analysis and assisted in fieldwork in support of salvage survey of abandoned vessels in Puerto Rico and the US Virgin Islands.

2001: GIS Coordinator, Poplar Pt./Anacostia River Groundwater Contamination Assessment. Provided spatial and geostatistical analysis and 3-D visualization of stratigraphic and environmental data.

2001: Project Analyst, API In-Situ Burning Site Assessment. Participated in field collection and spatial analysis of environmental data and photography.

2001: GIS Coordinator, T/V Gilbert Taylor Grounding Natural Resource Damage Assessment. Provided spatial and geostatistical analysis, 3-D visualization, and modeling of bathymetric data and quantification of associated seagrass injury.

2000-2001: Project Analyst, Todd Shipyard, Seattle WA Environmental Remediation litigation support. Provided spatial and geostatistical analysis, 3-D visualization, and modeling of sediment contamination and bathymetric data.

1999: Project Analyst, Parris Island, SC Thermal Plume Study. Field collection and spatial analysis of water quality and bathymetry data and design of cartographic products.

1998-1999: Project Analyst, DOT Unusually Sensitive Areas Project. Analysis and identification of drinking water resources sensitive to petroleum pipeline spills.

1997: Project Analyst, New Jersey Tidal Inlet Protection Strategies. Designed digital data structure and cartographic products.

Publications

- Plank, C., Z. Nixon, 2003, Hawaii Environmental Sensitivity Index (ESI) Maps and The Spatial Accuracy of ESI Mapping Methodology. International Oil Spill Conference Proceedings. Vancouver, British Columbia (in prep.)
- Zengel, S., C. Lord, Z. Nixon, and J. Michel, 2003, Survey and Environmental Characterization of Abandoned Vessels in Puerto Rico and the U.S. Virgin Islands, Coastal Zone 03 Conference Proceedings, NOAA Coastal Services Center, Charleston SC (in prep.)
- Zengel, S., Z. Nixon, C. Plank, J. Hanifen, D. Sa, and D Braud, 2002, Environmental Sensitivity Mapping and GIS: the Louisiana G-WIS Database. Fourth Biennial Freshwater Spills Symposium. EPA, Cleveland Ohio, March 19-21, 2002.
- Michel, J., Nixon, Z., and H. Hinkeldey, 2002, Use of In-situ Burning as an Oil Spill Response Tool: Followup of Four Case Studies. Report prepared for American Petroleum Institute and Louisiana Applied Oil Spill Research and Development Program.
- Zengel, S., Z. Nixon, and J. Hanifen, 2001, Louisiana Gulf-Wide Information System: coastal habitats, wildlife, and fisheries components. Invited Presentation, 17th Annual Louisiana Remote Sensing and GIS Conference, Baton Rouge, Louisiana.
- RPI, 2001, Damage assessment: T/B *Gilbert Taylor* Incident, Petit Bois Island, Gulf Islands National Seashore. Report to National Park Service, Gulf Island National Seashore, Ocean Springs, MS. 13 pp. + appendices.
- Zengel, S. and Z. Nixon, 2001, Louisiana Gulf-Wide Information System: Environmental Sensitivity Index Components. CleanGulf '01, Proceedings, abstract.