

Christopher R. Locke
GIS/Remote Sensing Analyst, Research Planning, Inc.

Mr. Locke specializes in the application of Geographic Information Systems (GIS), remotely sensed data, spatial analysis and modeling, and database design and programming, for coastal environmental assessments, oil spill planning and response, and utilities management. Mr. Locke has been part of the RPI team since 1995.

EDUCATION

M.S., Geography, University of South Carolina, Columbia, S.C. (1999).
B.A., Geography, University of South Carolina, Columbia, S.C. (1996).

PROFESSIONAL EXPERIENCE

GIS Applications for Environmental Assessments:

- 2010-2011: Deepwater Horizon Spill Response (NOAA). Shoreline Cleanup Assessment Techniques (SCAT) field observations spatial Database Manager.
- 2010: Haiti Watershed Initiative (WINNER). Development of visualization tools in Google Earth and Open Source web GIS for watershed project data sets.
- 2009: NOAA Emergency Response Division. Development of visualization tools in Google Earth for presenting NOAA Environmental Sensitivity Index (ESI) data.
- 2008: Cosco Busan Natural Resource Damage Assessment. Assisting the Trustees in the Natural Resource Damage Assessment of the Cosco Buson oil spill in San Francisco, CA.
- 2006-2007: Environmental Data Assessment Tool for American Samoa. Developed on-line tools to assist local users in accessing and utilizing NOAA environmental data sets.
- 2005-2006: M/T Athos Spill Natural Resource Damage Assessment. Compiled data and methodologies for digital quantitative analysis of shoreline oiling extent and impact.
- 2004-2005: Bouchard 120 Spill Natural Resource Damage Assessment. Compiled data and methodologies for digital quantitative analysis of shoreline oiling extent and impact.
- 2004: Buzzards Bay, MA Inlet protection strategies. Data compilation and creation for an oil spill mitigation response plan.
- 2003: GIS Analyst, Florida Power and Light (FPL) Integrity Management Program HCA Analysis. Analysis of FPL pipelines that intersect with High Consequence Areas (HCA).
- 2002-2003: GIS Analyst, NOAA Oil and Gas Infrastructure and Coastal Land Loss Risk Assessment for Louisiana. Programmed spatial risk analysis and software tools to assess risks to coastal oil and gas infrastructure in Louisiana from coastal land loss.

Remote Sensing for Environmental Assessments:

- 2009-2011: Haiti Watershed Initiative (WINNER). Land use classification for project watersheds from high resolution satellite imagery.
- 2007: Bayou Perot, LA Spill Response. Oil type classification and volume estimation of spilled oil using digital aerial photography for on-scene management.

- 2007: NOAA HAZMAT Technologies Overview. Evaluation of existing and emerging technologies for remote data collection from space to underwater for assessments of coral and seagrass damage caused by vessel groundings.
- 2005: Hurricane Rita HAZMAT Debris Analysis. Data acquisition, preparation, and photo interpretation of Hurricane Rita debris issues for the Sabine National Wildlife Refuge.
- 2005: Hurricane Katrina Response. Combined LIDAR derived DEM's and priority satellite imagery to produce twelve hour interval flood level estimations in New Orleans for the Coast Guard.
- 2005: Ecuadorian Amazonia Spill Investigation. Estimation of asphaltic mat volume using imagery, GPS delineation, and field sampling.
- 2004: Palmetto Bluff, SC marina site suitability study. Current and historical image interpretation for bank erosion analysis.
- 2003-2005: LSU - Coastal Marine Institute. Louisiana coast line delineation and classification. Developed remote sensing techniques for classifying coastal habitats from satellite imagery following Environmental Sensitivity Index guidelines.
- 2003: SIEPAC electrical corridor, Costa Rica. Environmental impact modeling for alternate routing in Costa Rica for a proposed electricity transmission line connecting Mexico and Panama. Analysis and extraction for corridor attributes from Landsat imagery.
- 2002-2003: Arabian Gulf UNCC Gulf War Shoreline Survey. Analyzed and quantified oiling degree and extent from field work and remotely sensed imagery.

GIS Applications for Utilities and Infrastructure:

- 2010-2011: Haiti Watershed Initiative (WINNER). Haiti earthquake response activities including building damage assessments and data management and distribution to relief agencies.
- 2008: CAD to GIS data conversion and field data collection tool development for Electric Utilities field assessments.
- 2006: Power Utility Assessment Tool. Consultation and Development of GIS tools to aid an electrical engineering firm's utility pole damage assessments post Hurricanes Katrina and Rita in Mississippi.
- 2004: South Carolina DNR soil mapping. Developed semi-automated techniques for soil classification digitizing.
- 2003-2004: Harvest Hope Food Bank GIS. Data integration, compilation, and modeling for analysis of service gaps in South Carolina food bank distribution areas.
- 2003: GIS Analyst, Florida Power and Light (FPL) Integrity Management Program HCA Analysis. Analysis of FPL pipelines that intersect with High Consequence Areas (HCA).
- 2003: SIEPAC electrical corridor, Costa Rica. Environmental impact modeling for alternate routing in Costa Rica for a proposed electricity transmission line connecting Mexico and Panama.

Natural Resource Mapping:

- 2003 - 2011: QA/QC Manager, NOAA Environmental Sensitivity Index (ESI) Projects. Responsible for quality control and integrity of digital data compiled as part of the on-going NOAA ESI atlas series which compiles data on shoreline morphology, coastal biology, and coastal human-use resources for the US and its territories (~20 atlases since 2003).

2006: QA/QC Manager, Panama Canal Authority ESI Project.
2002: GIS Analyst/ Field Specialist, USAID Honduras Coastal Resource mapping.
2001: GIS Analyst/ Field Specialist, USAID Guatemala Coastal Resource mapping.
2001: GIS Analyst, NOAA Hawaii ESI; New York/ New Jersey ESI.
2000: GIS Analyst/ Field Specialist, USAID Golfo de Fonseca Resource mapping.
1997: GIS Tech, El Salvador Coastal Resource mapping.
1996: GIS Tech, NOAA North Carolina ESI; Georgia ESI.
1995: GIS Tech, NOAA South Carolina ESI.

PUBLICATIONS, REPORTS, and PROCEEDINGS

Locke, C., M. White, J. Michel, C. Henry, J.D. Sellars, and M. L. Aslaksen, Jr. 2008. Use of Vertical Digital Photography at the Bayou Perot, LA Spill for Oil Mapping and Volume Estimation. Proc. 2008 International Oil Spill Conference, May 5-7 2008, Savannah, GA.

Michel, J., C. Boring, and C. Locke, 2008. Rapid Assessment Protocols for Small Vessel Groundings. Proc. 2008 International Oil Spill Conference, May 5-7 2008, Savannah, GA.

Locke, C. and J. Michel. 2007. Considerations for Using Remote Sensing Technologies to Assess Injury to Benthic Habitats from Vessel Groundings. Prepared for NOAA, Office of Response & Restoration, Seattle, WA.

Locke, C. and J. Michel. 2007. Using AQUAMAP™ and GPS Technologies for Underwater Mapping in Emergency Assessments of Vessel Groundings. Prepared for NOAA, Office of Response & Restoration, Seattle, WA.

Born K., Locke, C., Michel, J., Braud, D. 2004. Using IKONOS Imagery for Mapping Coastal Habitats for Oil Spill Applications. ASPRS 2004 Annual Conference, May 23-28, 2004. Denver, Colorado.

Carbone G, Kiechle W, Locke C, Mearns LO, McDaniel L, and Downton M. 2003. Response of soybean and sorghum to climate change scenarios in the Southeastern United States. Special Issue of Climatic Change: Climate Change and Agriculture in the Southeast, 2003.

Locke, C.R., G. J. Carbone, and E. J. Sadler. 2000. Remote Sensing of Soybean Biophysical Properties. 5th International Conference on Precision Agriculture and Other Precision Resource Management, July 16-19, 2000. Bloomington Minnesota, Precision Agriculture Center, Univ. of Minnesota.

Carbone G, Locke C, Tsvetsinskaya E, Mearns L, McDaniel L. 2000. Responses of CERES and CROPGRO models to coarse and fine spatial resolution climate change scenarios in the southeastern United States. 96th Annual Meeting of the Association of American Geographers, April 6, 2000. Pittsburgh, PA.