



Jennifer L. Weaver
Ecologist / GIS Analyst

Research Planning, Inc.

Ms. Weaver is an ecologist specializing in fisheries, natural resource mapping, coastal ecology, and data synthesis. Ms. Weaver has worked with spatial data covering most of the U.S. coastal zone and has significant experience collaborating with stakeholders to design and refine GIS-based analytical approaches to inform coastal resource management and conservation.

Her responsibilities at RPI include working as a biologist and analyst on several different types of projects. She has worked on nine Environmental Sensitivity Index (ESI) mapping projects and numerous natural resource data syntheses to support risk assessment projects. She has served as a member of the National Oceanic and Atmospheric Administration (NOAA) Scientific Support Team as a responder to oil and hazardous materials spills for over five years, providing remote support for numerous spills and responding on-scene to two major spills. She contributed heavily to the Deepwater Horizon long-term restoration planning teams for two years. Prior to joining RPI, Ms. Weaver worked with the North Carolina Division of Marine Fisheries, Environmental Defense Fund and North Carolina State University on several projects to identify and characterize areas of exceptional fish habitat in North Carolina.

EDUCATION

M.E.M., Coastal Environmental Management, Duke University, Durham, NC (2009)
Certificate in Geospatial Analysis

Master's project: Impacts of sea level rise on river herring spawning habitat in eastern North Carolina

B.S., Ecology and Evolutionary Biology, Tulane University, New Orleans, LA (2005)

B.A., Classical studies, Tulane University, New Orleans, LA (2005)

Honors thesis: The effects of post-fire nutrient enrichment on the reproductive biology of Three-spined stickleback

AWARDS

Nicholas School of the Environment Academic Scholarship, 2007-2009

Stanback Fellowship, \$4500, Summer 2008

Newcomb Foundation Research Grant, \$444, Spring 2005

Phi Beta Kappa Honor Society, May 2005

Ecology and Evolutionary Biology Senior Scholar, 2005

PROFESSIONAL EXPERIENCE

2011 to present: Ecologist/GIS analyst, Research Planning, Inc., Columbia, SC

2009 to 2011: Marine Fisheries Fellow, North Carolina State University, Morehead City, NC

2008 to 2009: Fisheries Conservation Intern and GIS consultant, Environmental Defense Fund, Raleigh, NC

Ms. Weaver's experience is outlined separately on the following pages in four main areas:

- 1) Coastal Resource Mapping
- 2) Oil and Hazardous Material Spill Response/Assessment

- 3) Ecological Risk Assessment
- 4) Spatial Conservation Planning

COASTAL RESOURCE MAPPING

Ms. Weaver served as a biologist on the following ESI Projects used for coastal zone management, contingency planning, and hazardous material/natural disaster responses:

South Florida	2013
Texas, Upper Coast	2013
Louisiana	2013
Delaware Bay	2014
Outer coast of Washington and Oregon	2014
Georgia	2015
South Carolina	2015
Maryland/Virginia	2016
Southwest Florida	2016

Her role as a biologist on ESI projects requires extensive correspondence with biological and socio-economic resource experts from state and federal governments, university, and private agencies throughout the U.S. As a result, she is intimately familiar with the types of spatial data commonly available for coastal zone resources. She has extensive experience in natural resource and socioeconomic data collection, interpretation, and compilation using both quantitative data sources and participatory mapping techniques.

OIL AND HAZARDOUS MATERIALS SPILL RESPONSE, ASSESSMENT AND RESTORATION

Oil spill response: Since 2011, Ms. Weaver has been part of NOAA’s Scientific Support Team to the U.S. Coast Guard for oil and chemical spills. She has written numerous resources at risk analyses for oil and chemical spill events and drills and has provided on-scene support for the *Deepwater Horizon* oil spill as a Shoreline Cleanup Assessment Technique (SCAT) team member. She has a total of 6 weeks of field experience serving as the NOAA SCAT representative in Louisiana, working with a team of stakeholders to map shoreline oiling conditions and assess shoreline oiling condition relative to cleanup endpoints.

Damage assessment and restoration: From 2014-2016, Ms. Weaver provided technical support for the *Deepwater Horizon* injury assessment and restoration planning teams. Her tasks include communicating with stakeholders and resource experts, gathering and analyzing data, and creating methods documents and restoration plans to support the development of restoration alternatives to be part of the Damage Assessment, Remediation and Restoration Program (DARRP). In addition, she has performed spatial analyses to inform the injury assessment for nearshore resources.

ECOLOGICAL RISK ASSESSMENT

Impacts of Lingering Oil: Ms. Weaver provided technical support for an assessment of the impacts of lingering oil on wildlife in Prince William Sound for the National Marine Fisheries Service. She was responsible for reviewing literature, manipulating spatial datasets, and conducting analyses using maxent models to assess the relative habitat use of harlequin ducks and sea otters in relationship to oil persisting from the Exxon Valdez oil spill.

RULET: Ms. Weaver contributed to the development of screening level risk assessment packages for the Remediation of Underwater Legacy Environmental Threats (RULET) program in 2011-2012 by writing Ecological Resources at Risk summaries. She was responsible for researching and summarizing information on the abundance and distribution of sensitive wildlife at risk of being impacted by potential oil releases from sunken vessels. The geographic scope of the project included the U.S. coastal zone, including the Great Lakes and outlying territories, and areas of Canada and the Dominican Republic.

SPATIAL CONSERVATION PLANNING

Strategic Habitat Area Identification and Designation: Ms. Weaver was the primary GIS analyst for the North Carolina Division of Marine Fisheries' Region 2 Strategic Habitat Areas Assessment from 2009-2011. In this role, she assembled a regional GIS database of fish habitats, created a GIS layer representing cumulative anthropogenic impact to coastal fish habitats, performed MARXAN analysis to recommend a candidate sites for strategic habitat area designation, used geospatial and statistical modeling techniques to summarize trends in fish abundance over space, and analyzed the relationship between fish abundance and anthropogenic activities. She presented results of analyses and recommendations for improvements to the Division of Marine Fisheries, stakeholder advisory committees, and colleagues, and was responsible for the incorporation of edits and stakeholder comments into the process to improve the final comment.

River Herring Spawning Habitats in the Chowan River: In 2009-2010, Ms. Weaver worked with Environmental Defense Fund scientists to refine a GIS-based model characterizing the condition of river herring spawning habitat in Eastern North Carolina and prioritizing wetland sites for preservation and restoration. In this role, she collected and integrated data from different sources to create GIS layers describing habitat quality, and used them to summarize the relative condition of spawning habitat for each of 26 watersheds in the Chowan River Basin. She planned and executed field verification of the habitat model. In addition, she was responsible for creating and refining all of the maps in the final report.

Improving Compensatory Mitigation Requirements: In 2009, Ms. Weaver performed GIS analysis to assist Environmental Defense Fund on a project to recommend improvements to compensatory mitigation practices in North Carolina. She created a custom analytical tool using ArcGIS and Python to characterize the landscape in target watersheds and identify parcels of land as suitable mitigation sites. She was also responsible for acquiring data to be used as an input to the model, delineating watersheds based on digital elevation models using ArcGIS, communicating the results to project partners, assisting in the refinement of the model and creating maps and tables for use in the final report.

CERTIFICATIONS & SKILLS

Software – ArcGIS 9.x & 10.x, R, Python, OpenBUGS, MARXAN, PC-ORD, Fledermaus

Field – PADI SCUBA certified (Advanced Open Water, Nitrox), 8 weeks of SCAT, 14 days offshore cruise experience, coastal boat operation, coastal sampling using fish traps, seines, trawls, gill nets, rod and reel, and longlines

Languages - Intermediate Spanish, basic Portuguese

Certifications – 24 hour HAZWOPER, Wilderness First Aid, CPR, ACA level 5 Swiftwater Rescue

PUBLICATIONS & PRESENTATIONS

Weaver, J., J. Reinhardt, P. Latham, A. Dell'Apa, M. Christman. 2017. A meta-analysis to evaluate catch rate and at-vessel mortality of circle hooks in pelagic longline fisheries: management and conservation benefits. Oral presentation at Gulf of Mexico Oil Spill & Ecosystem Science Conference, New Orleans, LA.

Feldman, L. J. Reinhardt, M. Christman, S. Friedman, **J. Weaver.** 2017. Reduction of post-release mortality in red snapper (*Lutjanus campechanus*) and other recreationally caught reef fish in the Gulf of Mexico

using fish descender devices. Poster presentation at Gulf of Mexico Oil Spill & Ecosystem Science Conference, New Orleans, LA.

- Zengel, S., **J. Weaver**, S.C. Pennings, B. Silliman, D.R. Deis, C.L. Montague, N. Rutherford, Z. Nixon, A.R. Zimmerman. 2016. Five years of Deepwater Horizon oil spill effects on marsh periwinkles *Littoraria irrorata*. *Mar Ecol Prog Ser* <https://doi.org/10.3354/meps11827>
- Zengel, S., S.C. Pennings, B. Silliman, C. Montague, **J. Weaver**, D. R. Deis, M.O.Krasnec, N. Rutherford, Z. Nixon. 2016. Deepwater Horizon Oil Spill Impacts on Salt Marsh Fiddler Crabs (*Uca* spp.). *Estuaries and coasts*. 39(4):1-10.
- Weaver, J.** et al. 2014. Fish and invertebrate mapping methods for Environmental Sensitivity Index (ESI) atlases. Poster presentation at Southern Division of the American Fisheries Society Meeting, Charleston, SC.
- Weaver, J.** et al. 2011. Evaluating the Relationship between Habitat Alteration and Resource Species Abundance In North Carolina Estuaries: Do Fish Respond to Anthropogenic Activities? Oral presentation at Coastal & Estuarine Research Foundation Meeting, Daytona Beach, FL.
- Weaver, J.** et al. 2011. Evaluating the Relationship between Habitat Alteration and Resource Species Abundance In North Carolina Estuaries: Do Fish Respond to Anthropogenic Activities? Poster presentation at American Fisheries Society. Seattle, WA.
- Weaver, J.** 2011. An overview of North Carolina's Strategic Habitat Area designation process. Oral Presentation at Coastal GeoTools. Myrtle Beach, SC.
- Weaver, J.** 2010. Incorporation of fishery independent data into North Carolina's Strategic Habitat Areas planning process. Oral Presentation at AFS Tidewater Chapter Regional Meeting. Annapolis, MD.
- Weaver, J.** 2008. Identification, characterization and prioritization of river herring spawning habitat in the Chowan River Basin, North Carolina. Poster presentation at Restore America's Estuaries meeting. Providence, RI.
- Conn, D.B., **J. Weaver**, T. Graczyk, and L. Tamang. 2007. Synanthropic flies as vectors of *Cryptosporidium* and *Giardia* among livestock and wildlife in a multispecies agricultural complex. *Vector-Borne and Zoonotic Diseases*. 7(4):643-652.
- Weaver, J.** and D.C. Heins. 2005. The effect of fire on the reproductive biology of the Threespine stickleback, *Gasterosteus aculeatus*. Southwestern Association of Naturalists meeting. Huntsville, TX.