

# Scientist Spotlight



## Dr. F. Joel Fodrie

### What is your role as a scientist for CWC?

I'm part of a team of researchers from Rutgers, LSU, and UNC looking at the response of marsh-associated fishes to the oil spill. More broadly, we are also very interested in the role of these fishes in the larger estuarine food web.

### Can you summarize your oil spill research and describe any surprising findings you have come across?

Originally, we set out to see if the densities of marsh-associated fishes changed in response to oiling, and whether individual fish showed any growth penalties after having come in to contact with oil. We also attempted to use chemical markers that show up in otoliths (fish's ear stones) to see if we could detect the degree of oil contact any individual might have experienced. Among the surprises, we've realized how much very basic information on fish lifespans, growth rates, movement patterns, etc. are needed to even begin thinking about untangling the effects of oiling. Among the available data, we've also noted an interesting "mismatch": lab studies that expose individual fish to oil consistently show negative impacts in growth, survivorship, etc.; however, field surveys have consistently failed to show changes in the population sizes of fishes following oiling. We're still trying to understand that apparent paradox. Lastly, along the Atlantic coast we know that fishes residing on the marsh (e.g., killifishes) are very typically prey items for larger fishes that visit the edges of the marsh, but that does not appear to be the case for Louisiana marshes. Therefore, the flow of energy from the marsh out into the larger estuary may follow different food-web pathways in the GOM than along our Atlantic coast.

The Coastal Waters Consortium's mission is to assess the chemical evolution, biological degradation, and environmental stresses of petroleum and dispersant within Gulf of Mexico coastal and shelf ecosystems.

### What is your educational background?

(2006) Ph.D. Biological Oceanography (Dr. LA Levin, Advisor); Scripps Institution of Oceanography; University of California, San Diego  
(1999) B.A. Biology with Highest Honors, and History; University of North Carolina at Chapel Hill

### What inspired you to become a scientist?

I was a history and biology major in college, and figured a science career might offer better options for me. I was looking for a summer job for after my junior year, and ran across some marine sciences research posters in the main science hall at UNC. I emailed a couple of professors about being a summer technician at UNC's field station (I had grown up in and around the water), and after that summer conducting field ecology, realized I really enjoyed marine research.

### Can you describe what you enjoy the most about conducting scientific research?

My favorite days are when all the data come together in a big spreadsheet, and we start creating graphs and figures for the first time to understand what the data are telling us. For me, that's usually when an ah-ha moment might happen.

