

Matthew Poach

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Education:

Doctorate, Oceanography (chemistry focus), Louisiana State University, Baton Rouge, LA **05/1999**

Bachelor's Degree, Biological Oceanography, Florida Institute of Tech., Melbourne, FL **06/1989**

Professional Experience:

Research Marine Chemist, NOAA-NMFS **2009 - present**
Manager of the ocean acidification analytical laboratory at the James J. Howard Marine Sciences Center. Studying the effects of ocean acidification on survival, growth, and development of commercially important fish and shellfish of the Mid Atlantic Bight. Monitoring the nutrient and carbon chemistry of the Mid Atlantic Bight and associated ecosystems (e.g. Hudson/Raritan Bay, Barnegat Bay). Evaluating the ecosystem services of shellfish and seaweed aquaculture.

Environmental Analyst II, MA Dept. of Environmental Protection **2005 - 2009**
Conducted water quality sampling of the watersheds in western Massachusetts with an emphasis on bacterial source tracking studies. Measured fecal coliform and E. coli in water samples using fluorescent techniques. Wrote Quality Assurance Project Plans and Project Reports for the bacterial source tracking studies. Conducted NPDES compliance inspections of select wastewater treatment plants.

Research Soil Scientist, USDA-Agricultural Research Service **1999 - 2005**
Provided leadership for investigations involving the use of constructed wetlands to remove nitrogen from swine wastewater, which has been linked to coastal eutrophication and Pfiesteria blooms. Designed and constructed artificial floating wetlands to investigate their ability to improve the water quality of agricultural ponds. Organized and supervised field experiments. Measured soil and water conditions in the field (e.g. pH, Eh, DO) and laboratory. Published research results in peer-reviewed journals and presented those results at numerous scientific meetings.

Ph.D. Student Fellow and Researcher, Louisiana State University **1991 - 1999**
Compared biological and chemical characteristics of created and natural wetlands in the Atchafalaya Delta, Louisiana and related those characteristics to physical characteristics of the wetlands. Research provided insight into natural wetland development and methods to improve wetland restoration/creation. Published results in a dissertation, in a technical report, and in peer-reviewed journals.

Professional Affiliations:

Chair, Science and Technical Advisory Committee, Barnegat Bay Partnership

2015 – 2017

Presided over quarterly meetings, approved and provided input for meeting agendas, and called special meetings as needed. Led the revising of BBP's Research Prospectus, which describes the research needs and priorities for the Barnegat Bay watershed. Provided input with regard to the Barnegat Bay Estuary based on his expertise and NOAA's interests. Provided expert advice to the BBP on the procurement and field placement of sensors to measure seawater pH and pCO₂.

Select Professional Publications:

Busch, D.S., M.J. O'Donnell, C. Hauri, K.J. Mach, M.E. Poach, S.C. Doney, S. Signorini. 2015.

Understanding, characterizing, and communicating responses to ocean acidification: challenges and uncertainties. *TOS Oceanography; Special Issue: Emerging Themes in Ocean Acidification Science*.

Chambers, R.C., A.C. Candelmo, E.A. Habeck, M.E. Poach, D. Wieczorek, K.R. Cooper, C.E. Greenfield, and B.A. Phelan. 2013. Ocean acidification effects in the early life-stages of summer flounder, *Paralichthys dentatus*. *Biogeosciences Discussions*, 10: 13897-13929.

Poach, M.E., K.S. Ro, and P.G. Hunt. 2013. Wind Tunnel Method for Measurement of Ammonia Volatilization. In: DeLaune, R.D., Reddy, K.R., Richardson, C.J., Megonigal, J.P (eds.) *Methods in Biogeochemistry of Wetlands*. p. 473–483.

Poach, M.E. and S.P. Faulkner. 2007. Effect of river sediment on phosphorus chemistry of similarly aged natural and created wetlands in the Atchafalaya Delta, LA. *Journal of Environmental Quality*, 36: 1217-1223.

Poach, M.E., P.G. Hunt, G.B. Reddy, K.C. Stone, M.H. Johnson, and A. Grubbs. 2007. Effect of intermittent drainage on the treatment of swine wastewater by marsh-pond-marsh constructed wetlands. *Ecological Engineering* 30: 43-50.

Poach, M.E., P.G. Hunt, G.B. Reddy, K.C. Stone, T.A. Matheny, M.H. Johnson, and E.J. Sadler. 2004. Ammonia volatilization from marsh-pond-marsh constructed wetlands treating swine wastewater. *Journal of Environmental Quality*, 33: 844-851.

Poach, M.E., P.G. Hunt, M.B. Vanotti, K.C. Stone, T.A. Matheny, M.H. Johnson, and E.J. Sadler. 2003. Improved nitrogen treatment by constructed wetlands receiving partially nitrified liquid swine manure. *Ecological Engineering*, 20: 183-197.