

Gregory Bartholomew Noe

Curriculum Vitae

United States Geological Survey
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Research Interests

- Wetland ecosystem ecology, focusing on the interactive influences of hydrology, geomorphology, climate, and biology on nitrogen and phosphorus biogeochemistry in fluvial ecosystems, as well as plant community ecology and restoration ecology

Education

Ph.D. Ecology

University of California, Davis and San Diego State University

Ecology Joint Doctoral Program, 1999

Dissertation title: Abiotic effects on the annual plant assemblage of southern California upper intertidal marsh: does experimental complexity matter?

Advisor: Dr. Joy Zedler

B.S. Biology, "In honors"

Virginia Polytechnic Institute and State University

Minor in chemistry, 1994

Honors thesis title: Primary productivity of emergent macrophytes in accidental wetlands on surface mined lands.

Advisor: Drs. John Cairns, Jr., and Robert Atkinson

Experience

Research Ecologist, 2002 – present, National Research Program, Water Resources Discipline, U.S. Geological Survey

- Research on aquatic and wetland biogeochemistry and ecosystem ecology.
- Studies in the Florida Everglades and floodplains of Louisiana, Maryland, and Virginia.
- Assistant Project Chief: Hydrologic, Ecological, and Biogeochemical Processes in Flowing Waters

Consultant to Big Rivers Partnership Project, 2001, Southeast Environmental Research Center, Florida International University

- Development of statistical and ecological models to guide urban environmental restoration.

LTER Scientist, 2000 – 2002, Florida Coastal Everglades LTER, Florida International University

- Synthesis and modelling of Everglades ecosystem.

Postdoctoral Research Scientist, 1999 – 2001, Southeast Environmental Research Center, Florida International University

- Testing and modelling the response of the Everglades wetland ecosystem to nutrient enrichment.
- Co-taught Modeling Biological Systems and Advanced Ecology.

Experience continued

Doctoral Candidate, 1994 – 1999, Ecology Joint Doctoral Program, University of California, Davis and San Diego State University

- Compared the ability of simple vs. complex ecological models to predict wetland plant community organization.
- Investigated the spatial and temporal heterogeneity of wetland plant establishment (including endangered and exotic species) in relation to multiple abiotic and biotic factors.

Research Assistant, 1994 – 1999, Pacific Estuarine Research Laboratory, San Diego State University

- As part of the team, collected, analyzed, and disseminated plant, invertebrate, fish, and soil data to characterize salt marsh ecosystems and evaluate the functional equivalency of restored and created estuaries to natural estuaries.
- Initiated long-term study to track vegetation change in coastal lagoon in response to increased freshwater and sediment input, and monitored populations of an endangered plant species and exotic species.

NOAA National Estuarine Research Reserve Fellow, 1997 – 1999, Tijuana River NERR

- Advised NERR on restoration ecology and exotic species issues.
- Led workshops on vegetation monitoring for student internship program.

Teaching Assistant, 1994, Department of Biology, San Diego State University

- Taught laboratory sections on the statistical analysis of biological data to undergraduates.

Honors Undergraduate Researcher and Research Assistant, 1990 – 1994, Virginia Polytechnic Institute and State University

- Conducted independent honors research on the primary productivity of accidentally created wetlands on coal surface-mined lands.
- Constructed and monitored wetlands created to enhance surface-mine restoration and managed the field station.

Membership in Scientific Societies

- American Geophysical Union, American Society of Limnology & Oceanography, Ecological Society of America, and Society of Wetland Scientists.

Professional Activities and Honors

- Editorial Board, *Wetlands Ecology and Management*, 2005 – present
- Reviewer for *American Journal of Botany*, *Biogeochemistry*, *Bulletin of the Torrey Botanical Club*, *Ecological Applications*, *Ecology*, *Ecosystems*, *Estuaries*, *Frontiers in Ecology and the Environment*, *Geoderma*, *Geophysical Research Letters*, *Journal of Applied Ecology*, *Journal of Applied Vegetation Science*, *Journal of Environmental Quality*, *Madroño*, *Plant Ecology*, *Proceedings of the Pakistan Academy of Science*, *River Research & Applications*, *Wetlands*, and *Wetlands Ecology & Management*.
- USGS STAR Employee Award, 2007
- USGS Water Resources Discipline Lecturer, 2007
- Task Leader, Nutrient Transport Processes Team, USGS Chesapeake Priority Ecosystem Studies, 2006 – present
- Program Committee, 10th International Symposium on Wetland Biogeochemistry, 2006 – 2007
- Chair of the South Atlantic Chapter, Society of Wetland Scientists, 2005 – 2007
- Affiliated Faculty and graduate student thesis committees, Department of Environmental Science and Policy, George Mason University, 2005 – present
- Biogeosciences Section Representative, 2006 American Geophysical Union Joint Assembly, 2005 – 2006
- Program Committee, 2005 Society of Wetland Scientists annual conference, 2004 - 2005

Professional Activities continued

- Proposal reviewer for NSF Ecosystems, 2004, 2005, 2006, NSF Biological Oceanography, 2006, NSF Geography, 2007, and National Institute for Climate Change Research, Coastal Center, 2006 and 2007
- Guest Lecturer, Wetland Ecology, Biometry, Christopher Newport University, 2003
- Guest Lecturer, Wetland Ecology & Management, Environmental (Ecosystem) Analysis & Modeling, George Mason University, 2003 – present
- Vice Chair of the South Atlantic Chapter, Society of Wetland Scientists, 2002 – 2005
- Panel reviewer for EPA STAR fellowships, aquatic and ecosystem ecology section, 2002
- Project collaborator, Florida Coastal Everglades LTER site, 2000 – present
- NOAA National Estuarine Research Reserve Fellow, 1997 – 1999
- Scientific advisor to the City of San Diego's Wetlands Working Group, 1997 – 1998
- Graduate student thesis committees: Kurt Moser (MS, GMU), Kristin Wolf (PhD, GMU)

Publications

- Noe, G.B., and J.B. Zedler. 2000. Differential effects of four abiotic factors on the germination of salt marsh annuals. *American Journal of Botany* 87: 1679-1692.
- Sullivan, G., and G.B. Noe. 2000. Coastal wetland plant species of southern California. In: *Handbook for Restoring Coastal Wetlands*. J.B. Zedler, ed. CRC Press, Boca Raton, Florida.
- Noe, G.B., D.L. Childers, and R.D. Jones. 2001. Phosphorus biogeochemistry and the impacts of phosphorus enrichment: Why is the Everglades so unique? *Ecosystems* 4: 603-624.
- Noe, G.B., and J.B. Zedler. 2001. Southern California's variable precipitation defines germination opportunities in upper intertidal marshes. *Estuaries* 24: 30-40.
- Noe, G.B., and J.B. Zedler. 2001. Spatiotemporal variation of salt marsh seedling establishment in relation to the abiotic and biotic environment. *Journal of Vegetation Science* 12: 61-74.
- Noe, G.B. 2002. Temporal variability matters: Effects of constant vs. varying moisture and salinity on germination. *Ecological Monographs* 72: 427-443.
- Noe, G.B., D.L. Childers, A.L. Edwards, E. Gaiser, K. Jayachandaran, D. Lee, J. Meeder, J. Richards, L.J. Scinto, J. Trexler, and R.D. Jones. 2002. Short-term changes in phosphorus storage in an oligotrophic Everglades wetland ecosystem receiving experimental nutrient enrichment. *Biogeochemistry* 59:239-267.
- Noe, G.B., L.J. Scinto, J. Taylor, D.L. Childers, and R.D. Jones. 2003. Phosphorus cycling and partitioning in oligotrophic Everglades wetland ecosystems: A radioisotope tracing study. *Freshwater Biology* 48: 1993-2008.
- Childers, D.L., R.F. Doren, R.D. Jones, G.B. Noe, M. Rugge, and L. Scinto. 2003. Decadal change in vegetation and soil phosphorus patterns across the Everglades landscape. *Journal of Environmental Quality* 32: 344-362.
- Noe, G.B., and C. Hupp. 2005. Carbon, nitrogen, and phosphorus accumulation in floodplains of Atlantic Coastal Plain rivers, USA. *Ecological Applications* 15: 1178-1190.
- Gaiser E.E., J.C. Trexler, J.H. Richards, D.L. Childers, D. Lee, A.L. Edwards, L.J. Scinto, K. Jayachandran, G.B. Noe, R.D. Jones. 2005. Cascading ecological effects of low-level phosphorus enrichment in the Florida Everglades. *Journal of Environmental Quality* 34: 717-723.

Publications continued

- Davis, S.E. III, D.L. Childers, and G.B. Noe. 2006. The contribution of leaching to the rapid release of nutrients and carbon in the early decay of oligotrophic wetland vegetation. *Hydrobiologia* 569: 87-97.
- Hupp, C.R., and G.B. Noe. 2006. Sediment and nutrient accumulation within lowland bottomland ecosystems: an example from the Atchafalaya River Basin, Louisiana. Pp. 175-187. *Hydrology and Management of Forested Wetlands. Proceedings of the International Conference. Transactions of the American Society of Agricultural Engineers.*
- Noe, G.B., M. Fellows, and J. Cornell. 2007. Volunteer monitoring demonstrates tree plantings help stream ecosystems. *Conservation Currents* (Northern Virginia Soil & Water Conservation District) 34:4-5.
- Noe, G.B., and D.L. Childers. 2007. Phosphorus budgets in Everglades wetland ecosystems: The effects of hydrology and nutrient enrichment. *Wetlands Ecology and Management* 15: 189-205.
- Noe, G.B., J. Harvey, and J. Saiers. 2007. Characterization of suspended particles in Everglades wetlands. *Limnology & Oceanography* 52: 1166-1178.
- Noe, G.B., and C.R. Hupp. 2007. Seasonal variation in nutrient retention during inundation of a short-hydroperiod floodplain. *River Research and Applications* 23: 1088-1101.
- Kroes, D.E, C.R. Hupp, and G.B. Noe. 2007. Sediment, nutrient, and vegetation trends along the tidal, forested Pocomoke River, Maryland. Chapter 5, pp. 113-137, in Conner, W.H., T.W. Doyle, and K.W. Krauss (eds.), *Ecology of Tidal Freshwater Forested Wetlands of the Southeastern United States*. Springer.
- Moser, K., C. Ahn, and G. Noe. 2007. Characterization of microtopography and its influence on vegetation patterns in created wetlands. *Wetlands* 27: 1081-1097.
- Huang, Y.H., Saiers, J.E., Harvey, J.W., G.B. Noe, and S. Mylon. 2008. Advection, dispersion, and filtration of fine particles within emergent vegetation of the Florida Everglades. *Water Resources Research* doi:10.1029/2007WR006290.
- Moser, K., C. Ahn, and G. Noe. In press. The influence of microtopography on soil nutrients in created mitigation wetlands. *Restoration Ecology*.
- Larsen, L.G., G.R. Aiken, J.W. Harvey, G.B. Noe, and J.P. Crimaldi. In review. Resolution of small-scale changes in organic matter source and redox state with fluorescence spectroscopy in a subtropical peatland, Florida Everglades. *Limnology and Oceanography*.
- Larsen, L.G., J.W. Harvey, J.P. Crimaldi, and G.B. Noe. In review. Flocculent sediment transport dynamics in an organoclastic wetland environment. *Water Resources Research*.
- Scott, D.T., J.W. Harvey, and G.B. Noe. In review. Cumulative effect of river-floodplain water exchange and floodplain nitrogen processing on nitrogen removal from a 5th order southeastern U.S. river. *Water Resources Research*.