

# **Mark S. Greeley**

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## **Education**

Ph.D., Biology - University of Alabama at Birmingham, 1983 (Outstanding Student Awards for the Biology Department, the School of Natural Sciences and Mathematics, and the Graduate School)

B.S., Biology - University of Alabama at Birmingham, 1978

## **Employment History**

1991-present: Research Staff Member, Environmental Sciences Division, Oak Ridge National Laboratory (ORNL)

1988-1991: Scientist II, Automated Sciences Group, Inc. (on assignment at ORNL)

1983-1988: Postdoctoral Research Associate, Whitney Marine Laboratory, University of Florida

1978-1983 Graduate Teaching and Research Fellow, University of Alabama at Birmingham

1974-1978: Undergraduate Laboratory Instructor, University of Alabama at Birmingham

## **Qualifications and Experience**

- Over ten years experience managing ORNL Environmental Toxicology Laboratory
- Aquatic Biologist with over 30 years of Freshwater and Estuarine Research Experience
- Project Management, including Budget and Financial Analyses
- Environmental Effects Assessments and Monitoring
- Experience in numerous EPA and NIEHS Review Panels and Site Visits
- Participation in National Academy of Sciences Committee

## **Select Publications and Reports**

Southworth, G. R., S. C. Brooks, M.S. Greeley, Jr., R. H. Ketelle, and M.J. Peterson. In review. Sources of mercury to a contaminated stream – implications for time scale of effective remediation. *Science of the Total Environment*.

Greeley, M., L. Kszos, G. Morris, J. Smith and A. Stewart. In review. Role of a comprehensive toxicity assessment and monitoring program in the management and ecological recovery of a wastewater receiving stream. *Environmental Management*.

Southworth, G., M. Greeley, M. Peterson., K. Lowe, and R. Ketelle (2010). Sources of mercury to East Fork Poplar Creek downstream from the Y-12 National Security Complex: Inventories and export rates. ORNL/TM-2009/231. Oak Ridge, TN. 69 pp.

Alexander, S., et al. (2010). Assessing ecotoxicological effects of fly ash at the Kingston TN Site: A white paper addressing data gaps and requirements. Report on the Ecotoxicological Working Group at the TVA-Kingston Fly Ash Release Environmental Research Symposium, March 11-12, 2010. TVA/ORAU.

National Research Council. (2005). *Understanding Oil Spill Dispersants: Efficacy and Effects*. The National Academies Press. Washington, D.C. 377 pp.

Adams, S.M., M.S. Greeley, D.G. Fitzgerald, J.M. Law, E.J. Noga, and J.T. Zelikoff (2004). Effects of flooding from three sequential hurricanes on the health and condition of fish in Pamlico Sound, NC. *Estuaries* 26: 1365-1382.

Hoyt, P. R., M. J. Doktycz, K. L. Beattie, and M. S. Greeley, Jr. (2003). DNA microarrays detect 4-nonylphenol-induced alterations in gene expression during zebrafish early development. *Ecotoxicology* 12: 469-474.

Schrader, E. A., T. R. Henry, M. S. Greeley, Jr., and B. P. Bradley (2003). Proteomics in zebrafish exposed to endocrine disrupting chemicals. *Ecotoxicology* 12: 485-488.

- Greeley, M.S., Jr. (2002). Reproductive Indicators of Environmental Stress in Fish. Pp. 321-377 in S. M. Adams (ed), Biological Indicators of Stress. American Fisheries Society, Bethesda, Maryland.
- McMaster, M.E., J. J. Jardine, G. Ankley, W. H. Benson, M. Greeley, T. Gross, L. Guilette, D. MacLatchy, G. Van Der Kraak and K. R. Munkittrick. (2001). An interlaboratory study on the use of steroid hormones in examining endocrine disruption. *Environ. Toxicol. Chem.* 20: 2081 -2087.
- Adams, S.M. and M.S. Greeley. (2000). Ecotoxicological indicators of water quality: Using multi-response indicators to assess the health of aquatic ecosystems. *J. of Water, Air, and Soil Pollution* 123:103-115.
- Adams, S.M. and M.S. Greeley. (2000). Environmental challenges of water-quality assessment using integrated bioindicators to evaluate aquatic ecosystem health. Pages 103- 115 in S. Belkin (ed), Environmental challenges. Kluwer Academic Pubs., London.
- Adams, S.M., M.S. Greeley, and M.G. Ryon. (2000). Evaluating effects of stressors on fish health at multiple levels of biological organization: Extrapolation from lower to higher levels. *Human & Ecological Risk Assessment* 6: 15-27.
- Adams, S.M., M.S. Bevelhimer, M.S. Greeley, D.A. Levine, and S.J. Teh. (1999). Ecological risk assessment in a large river-reservoir: 6. Bioindicators of fish population health. *Environ. Toxicol. Chem.* 18:628-640.
- Greeley, M.S., Jr., T.L. Ashwood, L.A. Kszos, M.J. Peterson, T.L. Phipps, C.D. Rash and G.R. Southworth. (1998). Postremediation Monitoring Program Baseline Assessment Report, Lower East Fork Poplar Creek (Y/ER-319). Bechtel Jacobs Company LLC, Oak Ridge, TN.
- Garcia, E. F., R. McPherson, T.H. Martin, R. A. Poth and M.S. Greeley, Jr. (1997). Liver cell estrogen receptor binding in prespawning female largemouth bass, *Micropterus salmoides*, environmentally exposed to polychlorinated biphenyls (PCBs). *Arch. Environm. Contam. Toxicol.* 22: 309-315.
- Adams, S. M., K.D. Ham, M.S. Greeley, Jr., R.F. LeHew, D.E. Hinton, and C.F. Saylor. (1996). Downstream gradients in bioindicator responses: Point source contaminant effects on fish health. *Can. J. Fish. Aquat. Sci.* 53: 2177-2187.
- Hsiao, S.-M., M. S. Greeley, and R. A. Wallace. (1994). Reproductive cycling in female *Fundulus heteroclitus*. *Biological Bulletin* 186: 271-284.
- Adams, S.M., and M.S. Greeley, Jr. (1996) Establishing possible links and relationships between aquatic ecosystem health and human health: An integrated approach. Pages 91-102 in R.T. DiGiulio and E. Monosson (eds.), Interconnections between Human and Ecosystem Health. Chapman and Hall, Publ.
- Greeley, M.S., Jr., S.M. Adams, W.D. Crumby, R. Epler, D.L. Harris, K.L. Lee, M.K. McCracken, J.G. Mural, S.L. Niemela, R. McPherson, D.E. Hinton and R. Stripp. (1994). Bioindicator Assessment of Fish Health and Reproductive Success in Lake Hartwell and Twelve Mile Creek. In Biological Investigation for the Remedial Investigation/Feasibility Study, Sangamo Weston, Inc./Twelve Mile Creek/Lake Hartwell PCB Contamination Superfund Site. U.S. Army Corps of Engineers, Savannah.
- Adams, S.M., G.F. Cada, M.S. Greeley, Jr., and L.R. Shugart. (1993). Evaluating effects of environmental stress on fish communities using multi-response indicators, pp. 170-177. In *Environmental Analysis: The NEPA Experience* (S.G. Hildebrand and J.B. Cannon, eds.). Lewis Publ., Boca Raton, FL.
- Adams, S.M., W.D. Crumby, M.S. Greeley, Jr., and L.R. Shugart (1992). Responses of fish populations and communities to pulp mill effluents: A holistic assessment. *Ecotoxicol. Environmental Safety* 24: 347-360.
- Adams, S. M., W.D. Crumby, M.S. Greeley, Jr., M.G. Ryon, and E.M. Schilling (1992). Relationship between physiological and fish population responses in a contaminated stream.

- Environ. Toxicol. Chem. 11: 1549-1557.
- Wallace, R.A., M.S. Jr. Greeley, and R. McPherson (1992). Analytical and experimental studies on the relationship between Na<sup>+</sup>, K<sup>+</sup>, and water uptake during volume increases associated with *Fundulus* oocyte maturation in vitro. *Journal of Comparative Physiology* 162B: 241-248.
- Shugart, L. R., S. J. D'Surney, C. Getty-Hull, and M. S. Greeley, Jr. (1991). Biological (Molecular and Cellular) Markers of Toxicity: Final Report to the U. S. Army Biomedical Research and Development Laboratory (ORNL/M-1845). Oak Ridge National Laboratory. Oak Ridge, TN.
- Adams, S. M., and M.S. Greeley, Jr. (1991). Assessment and evaluation of the ecological health of fish populations exposed to PCBs in Hartwell Reservoir. Tennessee Valley Authority Publ. TVA/WR/AB-91/14, Chattanooga, TN.
- Greeley, M.S., Jr., H. Hols, and R.A. Wallace (1991). Changes in size, hydration, and low molecular weight osmotic effectors during meiotic maturation of *Fundulus* oocytes in vivo. *Comp. Biochem. Physiol.* 100A: 639-647.
- McPherson, R., M. S. Greeley, Jr., and R. A. Wallace (1989). The influence of yolk protein proteolysis on hydration in the oocytes of *Fundulus heteroclitus*. *Development, Growth and Differentiation* 31: 475-483.
- Adams, S.M., K.L. Shepard, M.S. Greeley, Jr., B.D. Jimenez, M.G. Ryon, L.R. Shugart, J.F. McCarthy, and D.E. Hinton (1989). The use of bioindicators for assessing the effects of pollutant stress on fish. *Mar. Environ. Res.* 28: 459-464.
- Petrino, T. R., M. S. Greeley, Jr., K. Selman, Y-W. P. Lin, and R. A. Wallace (1989). Steroidogenesis in *Fundulus heteroclitus* II. Production of 17 $\alpha$ -hydroxy, 20 $\beta$ -dihydroprogesterone, testosterone, and 17 $\beta$ -estradiol by various isolated components of the ovarian follicle. *Gen. Comp. Endocrinol.* 76: 230-240.
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- Greeley, M. S., Jr., R. MacGregor III, and K. R. Marion (1988). Variation in plasma estrogens of the gulf killifish (*Fundulus grandis* Baird and Girard). *J. Fish Biol.* 33: 419-429.
- Greeley, M. S., Jr., D. R. Calder, and R. A. Wallace (1987). Oocyte growth and development during seasonal ovarian recrudescence in the striped mullet (*Mugil cephalus*): Relationship to fecundity and age at maturity. *Fishery Bull.* 85: 187-200.

### **Synergistic Activities**

- Principal Investigator, Fish reproduction and larval success research projects related to the TVA Kingston (TN) Steam Plant Coal Ash Spill (2009-present)
- Editorial Board, *Journal Ecotoxicology* (2004 – present)
- Manager, Environmental Toxicology Laboratory, Oak Ridge National Laboratory, (1999–present)
- Project Manager, Biological Monitoring and Abatement Program, NNSA/DOE Oak Ridge Y-12 National Security Complex (1996–2006)
- Member of National Academies Committee on *Understanding Oil Spill Dispersants: Effects and Efficacy* (2004-2005)
- Project Manager, DOE Lower East Fork Poplar Creek Postremediation Monitoring Program (1996–1998)
- ORNL Project Manager, DOD Ashumet and Johns Ponds Investigation, Massachusetts Military Reservation (1993–1996)
- ORNL Project Manager, Biological Indicators Investigation, EPA/US Army Corps of Engineers, Sangamo Weston Inc./Hartwell Reservoir PCB Contamination Remedial Investigation (1992-1995)