CURRICULUM VITAE

Margaret A. Palmer
Professor and Director
Chesapeake Biological Laboratory
University of Maryland

I. EDUCATION

1979, 1983	M.S., Ph.D. Coastal Oceanography, University of South Carolina
1977	B.S. Biology, Phi Beta Kappa, Emory University

II. PROFESSIONAL EXPERIENCE:

1986	Visiting Scientist, Division of Invertebrate Zoology, Smithsonian Institution
1983- 87	Assistant Professor of Biology, Wabash College
1987- 89	Visiting Assistant Professor of Zoology, University of Maryland
1989- 92	Assistant Professor of Zoology, University of Maryland
1992 -97	Associate Professor of Zoology, University of Maryland
1997-	Professor of Biology, University of Maryland
1997- 99	Director, Biological Sciences Program, University of Maryland
1999- 00	Director, Ecology Program, National Science Foundation
2003 -	Professor of Entomology, University of Maryland
2005 -	Professor and Director, Chesapeake Biological Laboratory, UMCES

III. AWARDS AND SPECIAL RECOGNITION

1977	Phi Beta Kappa
1973-77	Academic Scholarships from Emory University & the Sirrine Foundation
1976	Woods Hole Oceanographic Institution Student Fellowship
1979-81	Slocum Lunz Doctoral Fellowship, Belle W. Baruch Predoctoral Fellowship
1983	Sigma Xi Award for Excellence in Research in the Natural Sciences
1983	Byron K. Trippet Research Award
1986	McLain-McTurnan Research Scholar
1990	Woods Hole Oceanographic Institution Invited Visiting Scholar
1990-91	Lilly Fellow
1993-94	Distinguished Scholar Teacher, University of Maryland
1994	British Ecological Society Visiting Scholar
2001	Aldo Leopold Leadership Fellow
2002	AAAS Fellow
2006	Distinguished Ecologist citation, Colorado State University
2006	Ecological Society of America, Distinguished Service Award

IV. PROFESSIONAL AFFILIATIONS & COMMITTIES

2009 -	Senior Advisory Board, CUASHI (Consortium of Universities for the Advancement of Hydrologic Science)
2009 -	Editorial Board, *Current Opinion in Environmental Sustainability*, Elsevier
2008 -	Chair, International Committee on Freshwater Biodiversity, *Diversitas*

2008 - Scientific Advisory Board, Potomac Conservancy
2006 - NSF, National Advisory Board, Long Term Ecological Research
2006 - Board of Trustees, Chesapeake Bay Trust
2004 - Section Head, Faculty of 1000, BioMed Central, Marine & Freshwater Ecology
2004 - Scientific Advisory Board, American Rivers
2005 -08 Scientific Advisory Board, NSF National Center for Earth Surface Dynamics
2005 -06 NRC Committee on River Science
2004-06 Scientific Advisory Board, Center for Watershed Protection
2004-06 Chair, Hydro-ecology Science Committee, NSF National NEON Design Team
2004-06 National Research Council, member: Committee on River Science
2003-07 International Riverine Landscapes – leadership team (2003 – 2007)
2002-05 Scientific Advisory Board, Grand Canyon Research and Assessment Center, USGS
2001-04 Chair, Scientific Advisory Board, National Center for Ecological Analysis & Synthesis (2003 -04); board member (2001 – 2003)
2002-07 Chair of expert panel to complete "A Scientific Synthesis of the state of Stream Restoration in the Nation", NSF - National Center for Ecological Analysis and Synthesis
2002- Ecological Society of America, Chair-Aquatic Section (1999 - 2001); Vice-Chair -Aquatic Section (1997 – 1999); Mercer Award Committee (1998-); Publications Committee (2000 -); Nominations Committee (2001); Chair, Committee for development of agenda for "Environmental Science for the 21st Century" (Ecological Visions) (2002 – 2005); Governing Board (2003- 2005); Chair, Corporate Awards Committee (2006 – 2008; Member, MacArthur Awards Committee (2006 -)
2002- North American Benthological Society, Policy Committee (2000 - 2004); Endowment Committee (2000-2005); Executive Committee (1997-2000); Co-Organizer of Symposium and special journal issue on Ecological Heterogeneity (March 1997); Chair, Awards Committee (2005 -08)
1995-02 Chair, Freshwater Section and Steering Committee Member, International S.C.O.P.E. Project on Biodiversity and Ecosystem Function in Soils and Sediments, (1995 - 2001)
1996-01 Chair, Advisory Board of Scholars: AAC&U - NSF project on Women and Scientific Literacy (1996-2001)
1999-01 National Center for Ecological Analysis & Synthesis, participant and co-leader (P.I. = Bob Naiman) for Project on Hydrological Regimes & Stream Ecosystems: Future Scenarios (1999-2001)

V. RESEARCH

A. Areas of professional expertise

Restoration ecology, stream ecosystem structure and function; invertebrate biodiversity; urban stream ecology

B. Publications

1. Books

Falk, D., M. A. Palmer, and J. B. Zedler (eds.). 2006. Foundations of Restoration Ecology. Island Press. Washington, D.C.

2. Peer-reviewed articles (last 5 years)

Swan, C.M. and M. A. Palmer. 2004. Leaf diversity alters stream litter decomposition. Journal of the North American Benthological Society 23: 15-28.

Silver, P., D. Wooster, and M. A. Palmer. 2004. Chironomid responses to spatially-structured, dynamic stream landscapes. Journal of the North American Benthological Society 23: 69-77.

Cardinale, B. J., E. Gelman, and M. A. Palmer. 2004. Net-spinning caddisflies as ecosystem engineers: The effect of *Hydropsyche* on benthic substrate stability in streams. Functional Ecology 18:381–387.

Moglen, G., K. Nelson, M. A. Palmer, J.E. Pizzuto, and C.E. Rogers and M.I. Hejazi. 2004. Hydro-ecological responses to land use in small urbanizing watersheds within the Chesapeake Bay Watershed. In: R. DeFries, G. Asner, and R. Houghton (eds.) *Ecosystems and Land Use Change Interactions.* Geophysical Monograph Series 153: 41-60, American Geophysical Union, Washington, D.C.

Palmer, M.A., E. Bernhardt, E. Chornesky, S. Collins, A. Dobson, C. Duke, B. Gold, R. Jacobson, S. Kingsland, R. Kranz, M. Mappin, M. L. Martinez, F. Micheli, J. Morse, M. Pace, M. Pascual, S. Palumbi, O. J. Reichman, A. Simons, A. Townsend, and M. Turner. 2004. Ecology for a crowded planet. Science 304: 1251-1252.

Cardinale, B. J., M. A. Palmer, A. R Ives, and S. Brooks. 2004. The diversity-productivity relationship in stream ecosystems varies with the natural disturbance regime. Ecology 86:716-726.

Palmer, M.A., E. Bernhardt, E. Chornesky, S. Collins, A. Dobson, C. Duke, B. Gold. 2005. Ecology for the 21st Century – an Action Plan. Frontiers in Ecology and Environmental Science 3: 4 – 11.

Allan, J.D., M.A. Palmer, and N.L. Poff. 2005. Freshwater ecology pp. 272-288 *in* Climate Change and Biodiversity. Edited by T.E. Lovejoy and L. Hannah. Yale University Press

Hastings, A., P. Arzberger, B. Bolker, S. Collins, A. R. Ives, N. A. Johnson, M. A. Palmer. 2005. Quantitative bioscience for the 21st century. BioScience 55:511-517

Meyerson, L.A., J. Baron, J. Melillo, R. J. Naiman, R.I. O'Malley, G. Orians, M.A. Palmer, A.S.P. Pfaff, and O.E. Sala. 2005. Aggregate Measures of Ecosystem Services: Can we take the pulse of nature? Frontiers in Ecology and the Environment 3:56-59

Palmer, M.A. 2004. Ecological futures and ecological research. Journal of Soil and Water Conservation Nov/Dec:120

Moore, A.M. and M.A. Palmer. 2005. Agricultural watersheds in urbanizing landscapes: implications for conservation of biodiversity of stream invertebrates. Ecological Applications 15:1169-1177

Bernhardt, E.S., M. A. Palmer, J. D. Allan, .G. Alexander, S. Brooks, J. Carr, C. Dahm, J. Follstad-Shah, D.L. Galat, S. Gloss, P. Goodwin, D. Hart, B. Hassett, R. Jenkinson, G.M. Kondolf, S. Lake, R. Lave, J.L. Meyer, T.K. O'Donnell, L. Pagano, P. Srivastava, E. Sudduth. 2005. Restoration of U.S. Rivers: a national synthesis. Science 308:636-637

Hassett, B., M.A. Palmer, E. S. Bernhardt, S. Smith, J. Carr, and D. Hart. 2005. Status and Trends of River and Stream Restoration in the Chesapeake Bay Watershed. Frontiers in Ecology and the Environment 3: 259-267.

Swan, C.S. and M. A. Palmer. 2005. Leaf litter diversity leads to non-additivity in stream detritivore colonization dynamics. Oceanological and Hydrobiological Studies 34: 19-38.

Wohl, E. P.L. Angermeier, B. Bledsoe, G. M. Kondolf, L. MacDonnell, D. M. Merritt, M. A. Palmer, N. L. Poff, and D. Tarboton. 2005. River restoration. Water Resources Research 41: 1-12 (W10305)

Ribblett, S.R., W. Coates, and M.A. Palmer. 2005. Protozoan functional groups influence rates of decomposition in stream ecosystems. Freshwater Biology 50:516-527

Palmer, M.A. 2005. Nature's technology: futures with our without? The Environment, global change, and sustainability. Pp *in: Vision 2033: Linking Science and Policy for Tomorrow's World*, American Association for the Advancement of Science, Washington, D.C.

Palmer, M.A., E. Bernhardt, J. D. Allan, and the National River Restoration Science Synthesis Working Group. 2005. Standards for ecologically successful river restoration. J. Applied Ecology 42: 208-217.

Palmer, M.A. and E.S. Bernhardt. 2006. Hydroecology and river restoration: ripe for research and synthesis. Water Resources Research 42, W03S07, doi:10.1029/2005WR004354.

Palmer, M.A. and J. D. Allan. 2006. River restoration: as the need for river restoration grows, supporting federal policies should follow. Issues in Science and Technology 22: 40-48.

Palmer, M. A., D. L. Strayer, and S. D. Rundle. 2006. Chapter 19: Meiofauna. pp. 415-433. In: F. R. Hauer and G. A. Lamberti (eds.). Methods in Stream Ecology. Academic Press.

Palmer, M.A. 2006. Ecological theory and restoration ecology, pp 1 – 10 *In:* Foundations of Restoration Ecology. Island Press. Washington, D.C.

Menninger, H. M. and Palmer M.A. 2006. Restoring ecological communities: from theory to practice. Pp 88-112 *In:* Foundation of Restoration Ecology. Island Press. Washington, D.C.

Swan, C.M. & M.A. Palmer. 2006. Composition of speciose leaf litter alters stream detritivore growth, feeding activity and leaf breakdown. Oecologia 147:469-78

Swan, C.S. and M. A. Palmer. 2006. Preferential feeding by an aquatic consumer mediates non additive decomposition of speciose leaf litter. Oecologia 149:107-114.

Groffman, P.M., J.S. Baron, T. Blett, A. Gold, I. Goodman, L.H. Gunderson, B.M. Levinson, M.A. Palmer, H.W. Paerl, G.D. Peterson, N. L. Poff, D.W. Rejeski, J.F. Reynolds, M.G. Turner, K.C. Weathers, J. Wiens. 2006. Ecological thresholds: The key to successful environmental management an important concept with no practical application? Ecosystems 9: 1- 13.

Jenkinson, R., K. Barnas, J. Braatne, E. Bernhardt, M. Palmer, J.D. Allan, and the National River Restoration Science Synthesis Working Group. 2006. Stream restoration databases and case studies: a guide to information resources and their utility in advancing the science and practice of restoration. Restoration Ecology 14: 177–186.

Bernhardt, E.S. and M.A. Palmer. 2007. Restoring streams in urbanizing landscapes. Freshwater Biology 52: 738-751.

Nelson, K. and M.A. Palmer. 2007. Stream temperature surges under urbanization and climate change: data, models, and responses. J. Amer. Water Res. Assoc. 43: 440 – 452.

Hassett, B., M.A. Palmer, and E.S Bernhardt. 2007. Evaluating stream restoration in the Chesapeake Bay watershed through practitioner interviews. Restoration Ecology 15(3): 463-472.

Palmer, M.A., J. D. Allan, and J. M. Meyer. 2007. River restoration in the United States in the 21st century. Restoration Ecology 15(3): 472-481.

Bernhardt, E.S., E.B. Sudduth, M.A. Palmer, J.D. Allan, J.L. Meyer, G. Alexander, J. Follstad-Shah, B. Hassett, R. Jenkinson, R. Lave, J. Rumps, L. Pagano. 2007. Restoring rivers one reach at a time: Results from a survey of U.S. river restoration practitioners. Restoration Ecology 15 (3): 482-493.

Heatherly, T., M. R. Whiles, D. J. Gibson, S. L. Collins, A. D. Huryn, J. K. Jackson, M. A. Palmer. 2007. Stream insect occupancy-frequency patterns and metapopulation structures. Oecologia 115: 313 – 321.

Menninger, H. L. and M. A. Palmer. 2007. Herbs and grasses as an allochthonous resource in open canopy headwater streams. Freshwater Biology. 52: 1689- 1699.

Wohl, E., M.A. Palmer, and J. M. Kondolf. 2008. The U.S. Experience. Chapter 10 *In:* River Futures. Edt. G.J. Brierley. Island Press.

Pizzuto, J., G. Moglen, M.A. Palmer, and K. Nelson. 2008. Two model scenarios illustrating the effects of land use and climate change on gravel riverbeds of suburban Maryland, U.S.A. pages 359-381 *In* Gravel Bed Rivers 6 - From Process Understanding to River Restoration. Edt by M. Rinaldi, P. Ergenzinger, H. Habersack, T. Hoey, and H. Piegay. Elsevier.

Palmer, M.A., C. Reidy, C. Nilsson, M. Florke, J. Alcamo, P.S. Lake, and N. Bond. 2008. Climate change and the world's river basins: anticipating response options. Frontiers in Ecology and the Environment 6: 81-89.

Williamson, C., W. Dodds, T.K. Kratz, and M.A. Palmer. 2008. Lakes and streams as sentinels and integrators of terrestrial and atmospheric processes. Frontiers in Ecology and the Environment 5: 247-254.

Menninger, H.L., M. A. Palmer. L.S. Craig, and D.C. Richardson. 2008. Periodical cicada detritus impacts stream ecosystem function. Ecosystems 11:1306-1317.

Craig, L.S., M.A. Palmer, D. C. Richardson1, S. Filoso, E. S. Bernhardt, B. P. Bledsoe4, M.W. Doyle, P. M. Groffman, B. Hassett, S. S. Kaushal, P. M. Mayer, S. M. Smith, and P.R. Wilcock. 2008. Stream restoration strategies for reducing nitrogen loads. Frontiers in Ecology and the Environment. 6: 529-538.

Kaushal, S.S., P. M. Groffman, L. E. Band, C. A. Shields, R.P. Morgan, M. A. Palmer, K. N. Eshleman, K. T. Belt, C. M. Swan, S.E.G. Findlay, and G.T. Fisher. 2008. Interaction between urbanization and climate variability amplifies watershed nitrate export in Maryland, U.S.A. Environmental Science & Technology 42: 5872–5878.

Nelson, K., M. A. Palmer, J. Pizzuto, G. Moglen, P. Angermeier, R. Hilderbrand, M. Dettinger, and K. Hayhoe. 2009. Forecasting the combined effects of urbanization and climate change on stream ecosystems: from impacts to management options. J. Applied Ecology 46: 154–163

Palmer, M.A. 2009. *Invited Odum essay*: Reforming Watershed Restoration: Science in Need of Application and Applications in Need of Science. Estuaries & Coasts 32: 1-17.

Palmer, M.A., D. P. Lettenmeier, N.L. Poff, S. Postel, B. Richter, and R.O. Warner. 2009. Climate Change and River Ecosystems: Protection and Adaptation Options. Environmental Management. DOI 10.1007/s00267-009-9329-**1**

Palmer, M.A. and S. Filoso. 2009. Restoration of ecosystem services. *Science* 325: 575-576.

3. Articles in press

Lookingbill, T., S.S. Kaushal, R.H. Gardner, R.P. Morgan, A.J. Elmore, R.H. Hilderbrand, K. N. Eshleman, W.R. Boynton, M.A. Palmer and W.C. Dennison. 2008. Blurring boundaries in the Potomac River ecosystem. Urban Ecosystems. *In press*

Seth J. Wenger, A.H. Roy, C.R. Jackson, E.S. Bernhardt, S. Filoso, C.A. Gibson, W.C. Hession, S.S. Kaushal, E. Marti, J.L, Meyer, M.A. Palmer, M.J. Paul, A.H. Purcell, A. Ramirez, A.D. Rosemond, K.A. Schofield, E.B. Sudduth, and C.J. Walsh. 2009. Twenty-six key research

questions in urban stream ecology: an assessment of the state of the science. Journal of the North American Benthological Society.

Carpenter, S.R., V. Armbrust, P. Arzberger, T. Chapin, J. Elser, E. Hackett, T. Ives, P. Kareiva, M. Leibold, P. Lundberg, M. Mangel, N. Merchant, W. Murdoch, M. Palmer, D. Peters, S. Pickett, K. Smith, D. Wall, and A. Zimmerman. 2009. Synthesis must be accelerated in ecology and environmental science. *BioScience*.

Palmer, M.A., H.L. Menninger, and E.S. Bernhardt. 2009. River Restoration, Habitat Heterogeneity and Biodiversity: A Failure of Theory or Practice? *Freshwater Biology*

Mooney, H., A. Lariguaderie, E. Elmquist, O. Hoegh-Guldberg, S. Lavorel, G.M. Mace, M. A. Palmer, R. Scholes, T. Yahara. 2009. Biodiversity, climate change, and ecosystem services. Current Opinion in Environmental Sustainability.