

WILFRED M. WOLLHEIM

Professional Preparation

<i>Institution and location</i>	<i>Area of Specialization</i>	<i>Degree</i>	<i>Year</i>
Cornell University	Natural Resources	B.S. (honors)	1989
University of Wyoming	Wetland Ecol. (Dept of Zool)	M.S	1994
University of New Hampshire	Earth Science	PhD	2005

Professional Experience

<i>Research Scientist III</i>	Jan. 2007 - present
Complex Systems Research Center, University of New Hampshire, Durham, NH	
<i>Research Scientist II</i>	Aug. 1999 – Dec 2006
Complex Systems Research Center, University of New Hampshire, Durham, NH	
<i>Research Assistant I and II</i>	May 1994 – Aug. 1999
Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA	
<i>Graduate Research Assistant</i>	Sept 1991 - May 1994
Dept. of Zoology and Physiology, University of Wyoming, Laramie, WY	

Publications

- Wollheim, W. M., C. J. Vörösmarty, B. J. Peterson, S. P. Seitzinger, and C. S. Hopkins. 2006. Relationship between river size and nutrient removal. *Geophysical Research Letters* **33**: doi:10.1029/2006GL025845
- Wollheim, W.M., B.A. Pellerin, C.S. Hopkins, and C.J. Vörösmarty. 2005. Nitrogen retention in urbanizing headwater catchments. *Ecosystems*. 8:871-884.
- Wollheim, W. M., C. J. Vörösmarty, A. F. Bouwman, P. A. Green, J. Harrison, E. Linder, B. J. Peterson, P. A. Green, S. Seitzinger, and J. P. M. Syvitski. 2007. Global N removal by freshwater aquatic systems: a spatially distributed, within-basin approach. *Global Biogeochemical Cycles*, In review.
- Pellerin, B.A., W.M. Wollheim, C.S. Hopkins, W.H. McDowell, M.R. Williams, C.J. Vörösmarty, and M.L. Daley. 2004. Role of wetlands and developed land use on dissolved organic nitrogen concentration and DON/TDN in northeastern U.S. rivers and streams. *Limnology and Oceanography* 49:910-918.
- Pellerin, B. A., W. M. Wollheim, X. Feng, C. J. Vörösmarty, and A. M. Faiia. 2007. The role of surface runoff in urban stormflow generation: Inferences from chemical and isotopic hydrograph separation. *Hydrological Processes*. In Press.
- Wollheim, W.M., B.J. Peterson, L.A. Deegan, J.E. Hobbie, B. Hooker, W.B. Bowden, K.J. Edwardson, D.B. Arscott, A.E. Hershey, and J. Finlay. 2001. Influence of stream size on ammonium and suspended particulate nitrogen processing. *Limnology and Oceanography* 46:1-13.
- Peterson, B.J., W. M. Wollheim, P.J. Mulholland, J.R. Webster, J.L. Meyer, J.L. Tank, Marti, E., W.B. Bowden, H.M. Valett, A.E. Hershey, W.H. McDowell, W.K. Dodds, S.K. Hamilton, S.V. Gregory, and D.D. Morrall. 2001. Control of nitrogen export from watersheds by headwater streams. *Science* 292:86-90.

- Oczkowski, A. J., B. A. Pellerin, C. W. Hunt, W. M. Wollheim, C. J. Vörösmarty, and T. C. Loder. 2006. The role of snowmelt and spring rainfall in inorganic nutrient fluxes from a large temperate watershed, the Androscoggin River basin (Maine and New Hampshire). *Biogeochemistry* 80:191-203.
- Mulholland, P.J., J.L. Tank, D.M. Sanzone, W.M. Wollheim, B.J. Peterson, J.R. Webster, and J.L. Meyer. 2000. Nitrogen cycling in a deciduous forest stream determined from a tracer ¹⁵N addition experiment in Walker Branch, Tennessee. *Ecological Monographs* 70:471-493.
- Dodds, W.K., A.L. López, W.B. Bowden, S. Gregory, N.B. Grimm, S.K. Hamilton, A.E. Hershey, E. Martí, W.H. McDowell, J.L. Meyer, D. Morrall, P.J. Mulholland, B.J. Peterson, J. Tank, H.M. Valett, J.R. Webster, and W. M. Wollheim. 2002. N uptake as a function of concentration in streams. *Journal of the North American Benthological Society* 21:206-220.
- Wollheim, W. M., B. J. Peterson, L. A. Deegan, J. E. Hobbie, M. Bahr, D. Jones, W. B. Bowden, A. E. Hershey, G. W. Kling, and M. C. Miller. 1999. A coupled field and modeling analysis of nitrogen cycling in streams. *Journal of the North American Benthological Society*. 18:199–221.

Synergistic Activities

Membership National Organizations – North American Benthological Society, American Society of Limnologists and Oceanographers, American Geophysical Union

Database development – Ongoing contributions to the Plum Island LTER database. Gulf of Maine Watershed Information and Characterization System GM-WICS, NOAA/CICEET)

Service to other organizations – Reviewer over last 2 years: Limnology and Oceanography, Geophysical Research Letters, Water Research, Water Resources Research, J. North American Benthological Society, Biogeochemistry, Ecology. Panelist for Nasa Earth System Science Fellowship Program.

Recent collaborators

K. Findell (GFDL), G. Gettel (UNH), M. Gooseff (Penn State), J. Harrison (Wash State U.), C. Hopkinson (MBL), G. Hurtt (UNH); D. Kicklighter (MBL), J. Melillo (MBL), James McClelland (U Texas), C. Milly (USGS), W. McDowell (UNH), B. Pellerin (USGS), B. Peterson (UNH), C. Polsky (Clark U.), R. Pontius (Clark U.), S. Seitzinger (Rutgers), J. Salisbury (UNH), J. Syvitiski (U. Colorado).

Graduate Advisors

PhD: Charles Vörösmarty, S. L. Dingman, W. McDowell, J. Aber, C. Hopkinson – UNH
Masters: J. Lovvorn, J. Lockwood, W. Hubert, S. Anderson – U. of Wyoming

Graduate Students

Jody Potter – current Masters Student at UNH (committee member)
Joe Thouin - current Masters Student at UNH (committee member)
Rob Stewart – current Masters Student at UNH (committee member)

Research Interests

My research focuses on how river networks control the flux of nutrients and carbon in response to changes in land use, climate change, and hydrological engineering. To address this question, I use field observations, field experiments, and modeling over a range of scales from headwater catchments, to moderately sized (~100-1000 km²) watersheds, to the global system of rivers, lakes, and reservoirs. My hope is that a better understanding of river network dynamics will help to address issues of coastal eutrophication, freshwater quality and the fate of anthropogenic carbon.