

SHORT BIOGRAPHICAL SKETCH

Judson W. Harvey

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RESEARCH INTERESTS

Hydrologic transport and biogeochemistry in surface & ground water of wetland / riverine systems.

EDUCATION

Ph.D. 1990, Environmental Sciences (Hydrology), University of Virginia.
M.S. 1986, Environmental Sciences (Hydrology), University of Virginia.
B.A. 1979, Biology, New College.

PROFESSIONAL EXPERIENCE

2003-present: Research Hydrologist, Project Chief, and Program Advisor, Surface Water Hydrology Discipline, USGS National Research Program, Reston, VA
1998-present: Research Hydrologist and Project Chief, 'Hydrologic and Chemical Interactions between Surface Water and Ground Water, USGS National Research Program, Reston, VA.
1995-1998: Research Hydrologist, USGS National Research Program, Reston, VA.
1992- 1995: Research Hydrologist, USGS National Research Program, Menlo Park, CA.
1990-1992: National Research Council Postdoctoral Fellow, U.S. Geological Survey, Menlo Park, CA.
1983-1990: Teaching and Research Assistantships, University of Virginia.
1982-1983: Staff Scientist, Natural Resource Department, Collier County, FL.
1979-1982: Assistant Staff Scientist, Mote Marine Laboratory, FL

HONORS

2002 Superior Service Award, U.S. Geological Survey
1995 (summer) Parker Fellow, Hokkaido River Disaster Prevention Center, Sapporo, Japan.

PROFESSIONAL SOCIETIES

American Geophysical Union, American Society of Limnology and Oceanography, Geological Society of America

RECENT PROFESSIONAL SERVICE

Society of Wetland Scientists, Associate Editor, *Wetlands*, January 2005 - .
American Geophysical Union, Associate Editor, *Water Resources Research*, January 2001 - 2003.
AGU Water Quality Committee, January 1998 -2002.
National Academy of Science, Water Science and Technology Board, Committee on Riparian Zones, October 1999 – March 2002.
National Academy of Science, Water Science and Technology Board, Committee on Hydrologic Science, Invited Presentation at the workshop 'Towards Integration of Hydrological and Ecological Sciences'. October 26–27, 2000.
National Center for Environmental Analysis and Synthesis (NSF sponsored center at UCSB, Santa Barbara), Working Group on Merging Aquatic and Terrestrial Perspectives of Biogeochemistry, July 1999 – October 2000.
Regular reviews of proposals to NSF–Earth Sciences Division, including proposals for Science and Technology Centers and Critical Zone Observatories, and the journals *Water Resources Research*, *Limnology and Oceanography*, *Hydrological Processes*, *Ground Water*, *Journal of Hydrology*, *Advances in Water Resources*, *Journal of Contaminant Hydrology*, and *Applied Geochemistry*

SYNERGISTIC ACTIVITIES

Rappeteur for ASLO working group reporting to NSF Geosciences Directorate on “Emerging Research Questions for Limnology”, December, 2002. Convener of technical sessions on surface-water and groundwater interactions at AGU meetings (Dec. 2004; Dec. 2001; May 1998; Dec. 2005). Instructor at USGS training courses on measuring and modeling contaminant fate and transport at terrestrial-aquatic interfaces. Co-author of “Ground Water and Surface Water: A Single Resource”, fourth printing (43,000) as a USGS circular.

SELECTED PUBLICATIONS, 2000 -

- Larsen, L.G., Harvey, J.W., and Crimaldi, J.P., 2007. A delicate balance: feedback between landscape morphology, water flow, vegetation dynamics, and sediment transport in a low-gradient, lotic peatland ecosystem, *Ecological Monographs*, in press.
- Tobias, C.R., Böhlke, J. K., Harvey, J.W., 2006, The oxygen-18 isotope approach for measuring aquatic metabolism in high productivity waters: Advantages and limitations, *Limnology and Oceanography*, 52: 1439-1453.
- Noe, G.B., Harvey, J.W., and Saiers, J. E., 2007, Characterization of suspended particles in Everglades wetlands, *Limnology and Oceanography*, 52:3:1166-1178.
- Wörman, A., Packman, A.I., Marklund, L., Harvey, J.W., and Stone, S.H., 2007, Fractal topography and subsurface flows from fluvial bedforms to the continental shield, *Geophysical Research Letters*, 34, L07402, doi:10.1029/2007GL029426.
- Scott, D., Harvey, J.W., Alexander, R.A., and Schwarz, G.E., 2006. Dominance of organic nitrogen from headwater streams to large rivers across the conterminous US. *Global Biogeochemical Cycles*, *GB1003*, doi:10.1029/2006GB002730.
- Wörman, A., Packman, A.I., Marklund, L., Harvey, J.W., and Stone, S.H., 2006, Exact three-dimensional spectral solution to surface-groundwater interactions with arbitrary surface topography, *Geophysical Research Letters*, 33(7), L07402, doi:10.1029/2006GL025747.
- Harvey, J.W., Newlin, J.T., and Krupa, S.L., 2006. Modeling decadal timescale interactions between surface water and ground water in the central Everglades, Florida, USA. *Journal of Hydrology*, 320:400-420.
- Harvey, J.W., J.E. Saiers, and J.T. Newlin, 2005, Solute transport and storage mechanisms in wetlands of the Everglades, South Florida. *Water Resources Research*, 41, W05009, doi:10.1029/2004WR003507.
- Bohlke, J.K., J.W. Harvey, M.A. and Voytek, 2004, Reach-scale isotope tracer experiment to quantify denitrification and related processes in a nitrate-rich stream, mid-continent United States. *Limnology and Oceanography* 49(3):821-838.
- Harvey, J.W., S.L. Krupa, and J.M. Krest, 2004, Ground Water Recharge and Discharge in the Central Everglades. *Ground Water*. 42(7):1090-1102.
- McClain, M.E., Boyer, E.W., Dent, C.L., Gergel, S.E., Grimm, N.B., Groffman, P.M., Hart, S.C., Harvey, J.W., Johnston, C.A., Mayorga, E., McDowell, W.H., Pinay, G., 2003, Biogeochemical hot spots and hot moments at the interface of terrestrial and aquatic ecosystems, *Ecosystems* 6(4):301-312. doi: 10.1007/s10021-003-0161-9.
- Harvey, J.W., M.H. Conklin, and R.S. Koelsch, 2003, Predicting changes in hydrologic retention in an evolving semi-arid alluvial stream. *Advances in Water Resources* 26: 939-950.
- Saiers, J.E., J.W. Harvey, and S.E. Mylon, 2003, Surface-water transport of suspended matter through wetland vegetation of the Florida Everglades. *Geophysical Research Letters* 30(19), 1987, doi:10.1029/2003GL018132.
- Krest, J.M., and J.W. Harvey, 2003, Using natural distributions of short-lived radium isotopes to quantify groundwater discharge and recharge. *Limnology and Oceanography* 48(1): 290 – 298.
- Grimm, N.B., Gergel, S.E, McDowell, W.H. Boyer, E.W., Dent, C.L Groffman, P.M., Hart, S.C., Harvey, J.W., Johnston, C.A., Mayorga, E., McClain, M.E., and Pinay, G., 2003, Merging Aquatic and Terrestrial Perspectives of Nutrient Biogeochemistry, *Oecologia* 442:485-501,

doi:10.1007/s00442-003-1382-5.

- Bates, A.L., W.H. Orem, J.W. Harvey, and E.C. Spiker, 2002. Tracing sources of sulfur in the Florida Everglades. *Journal of Environmental Quality* 31:287-299.
- Tobias, C.R., Macko, S.A., Anderson, I.C., Canuel, E.A., and J.W. Harvey, 2001. Tracking the fate of a high concentration groundwater nitrate plume through a fringing marsh: a combined groundwater tracer and in situ isotope enrichment study. *Limnology and Oceanography* 46(8):1977-1989.
- Tobias, C.R., J.W. Harvey, and I.C. Anderson, 2001a, Quantifying groundwater discharge through fringing wetlands to estuaries: seasonal variability, methods comparison, and implications for wetland-estuary exchange, *Limnology and Oceanography*, 46(3):604-615.
- Harvey, J.W., and B.J. Wagner, 2000, Quantifying hydrologic interactions between streams and their subsurface hyporheic zones, pp 3-43 in Jones, J.A. and P.J. Mulholland, (eds), *Streams and Ground Waters*, Academic Press, San Diego.
- Choi, J. and J.W. Harvey, 2000, Quantifying time-varying groundwater discharge and recharge in wetlands: a comparison of methods in the Florida Everglades. *Wetlands* 20(3):500-511.
- Fuller, C.C., and J.W. Harvey, 2000, Reactive uptake of trace metals in the hyporheic zone of a mining-contaminated stream, Pinal Creek, Arizona. *Environmental Science and Technology*, 34, 1150-1155.
- Choi, J., J.W. Harvey, and M.H. Conklin, 2000, Characterizing multiple timescales of stream and storage zone interaction that affect solute fate and transport in streams. *Water Resources Research*, 36(6), 1511-1518.

COLLABORATORS IN PAST FIVE YEARS

Anderson, I.C., Bohlke, J.K., Boyer, E.W., Canuel, E.A., Conklin, M.H., Fuller, C.C., Gergel, S.E., Grimm, N.B., Groffman, P.M., Hart, S.C., Johnston, C.A., Krest, J.M., Krupa, S.L., Macko, S.A., Mayorga, E., McClain, M.E., McDowell, W.H., Mylon, S.E., Newlin, J.T., Packman, A.I., Pinay, G., Saiers, J.E., Schwarz, G.E., Smith, L.K., Smith, R.L., Tobias, C.R., Voytek, M.A., Wagner, B.J., Worman, A.

ADVISEES

Postdoctoral: Ben O'Connor (USGS) 2006 –, Durelle Scott (USGS) 2003 – 2005, James Krest (USGS) 2000 – 2003, Jungyill Choi (USGS) 1998 - 2001; **PhD:** Jungyill Choi (University of Arizona), Craig Tobias (Virginia Institute Marine Science), Laurel Larsen (University of Colorado); **M.S.:** Scott Hulseapple (University of Arizona), Roger Koelsch (University of Arizona), Elizabeth Robbins (University of Arizona). **B.S.:** Jonah Jackson (University of Virginia)

GRADUATE ADVISERS: George Hornberger, (Univ. Virginia), William Odum (deceased, formerly Univ. Virginia), William Nuttle (Eco-hydrology.com, formerly Univ. Virginia), Peter Germann (University of Bern, Bern, Switzerland, formerly Univ. Virginia)

POSTDOCTORAL ADVISER: Kenneth Bencala (USGS)