Curriculum Vitae

Judson W. Harvey

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RESEARCH INTERESTS

Hydrologic transport interactions with ecological and biogeochemical processes in rivers & wetlands.

EDUCATION

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

PROFESSIONAL EXPERIENCE

1998 – present : Hydrologist and Project Chief, USGS National Research Program, Reston, VA.
2003 – 2008: Hydrologist, Project Chief, and Research Advisor to Chief Scientist for Hydrology, USGS, Reston, VA
1998–2002: Hydrologist and Project Chief, USGS National Research Program, Reston, VA
1995–1998: Hydrologist, USGS National Research Program, Reston, VA
1992– 1995: 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, Charlottesville, VA
1982–1983: Staff Scientist, Natural Resource Department, Collier County, Naples, FL
1979–1982: Assistant Staff Scientist, Mote Marine Laboratory, Sarasota, FL

AFFILIATE APPOINTMENTS FOR GRADUATE ADVISING

Department of Earth and Environmental Sciences, New Mexico Institute of Mining and Technology, Socorro, NM, 2009 – present.
Department of Civil Environmental and Architectural Engineering, University of Colorado, Boulder, CO, 2005 – 2008.
Department of Civil and Environmental Engineering, Northwestern University, Evanston, IL, 2004 – present.
Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, VA, 1997 – 1999.
Department of Hydrology and Water Resources, University of Arizona, Tucson, AZ, 1995 – 2003.

HONORS

2002 Superior Service Award, U.S. Geological Survey
2008, 2007, 2000, 1995, Star Award, U.S. Geological Survey
1995 (summer) Parker Fellow, Hokkaido River Disaster Prevention Center, Sapporo, Japan.
1989 Maury Research Award, University of Virginia, Charlottesville, VA
1987 Governor's Fellowship, University of Virginia, Charlottesville, VA

PROFESSIONAL SOCIETIES

American Geophysical Union (1987), Geological Society of America (1994), American Society of Limnology and Oceanography (1990)

FUNDING

2008 – 2011, NSF Award EAR 0810140, Collaborators: Northwestern U., U. Penn.
2008 – 2011, National Park Service Interagency Agreement F5284080024
2007 – 2010, NSF Award EAR 0814990, Collaborator: U. North Carolina-Wilmington
2006 – 2009, NSF Award EAR 0733117, Collaborator: University of Colorado
2004 – 2006, Environmental Protection Agency Agreement (EPA) DW1493991401D
2004 – 2007, NSF Award EAR 0408744, Collaborator: Northwestern University
2001 – 2004, USDA National Research Initiative Competitive Grant Award 2001-35102-09870
2000 – 2002, USGS Ground Water Resources Program
1999 – 2003, NSF Award CHE 9905654, Collaborators: University of Arizona, Scripps Institute
1999 – 2002, South Florida Water Management District (SFWMD) Agreements C-10719
1997 – present, USGS South Florida PES Program and Yale U. (2002 – 2006)
1996 – 1999, South Florida Water Management District (SFWMD) Agreements C-6661
1995 – 1998, NSF Award EAR-9523881, Collaborator: University of Arizona
1996 – present, National Research Program
1993 – 2002, USGS Toxic Substances Hydrology Program

RECENT PROFESSIONAL SERVICE

American Geophysical Union, Horton Student Research Award Committee, 2009 – present.
Society of Wetland Scientists, Associate Editor, *Wetlands*, January 2005– 2008.
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.
Reviewer: *Water Resources Research*, *Geophysical Research Letters*, *Journal of Geophysical Research-Biogeosciences*, *Ground Water*, *Hydrological Processes Journal of Hydrology*, *Journal of Contaminant Hydrology*, *Applied Geochemistry*, *Applied Hydrogeology Advances in Water Research*, *Environmental Sciences and Technology*, *Limnology and Oceanography*, *Ecology*, *Ecological Applications*, *Hydrobiologia*, *Wetlands.*

SELECTED RECOGNITION AND SYNERGISTIC ACTIVITIES

Convener of technical sessions on surface-water and groundwater interactions at national and international scientific meetings (Oct 2006; Feb. 2005; Dec. 2004; Dec. 2001; May 1998; April 1995, Dec. 1994; Nov. 1991).
Inclusion of Harvey and Bencala, 1993, *Water Resources Research* 29(1), 89-98 in "Benchmark Papers in Hydrology, 3: Groundwater, IAHS, 2008". Paper cited for its definition and quantification of hyporheic flow from a hydrogeological standpoint, a field that has blossomed.
Plenary speaker on the "Hydroecology of Flowing Waters" for the XXXV IAH Congress 'Groundwater and ecosystems', Lisbon, Portugal. September 17 – 21, 2007.
Expert Panelist serving Canadian Government for their 5-year review of the *Canadian Rivers Institute*, University of New Brunswick, St. John, New Brunswick, March 2009; Panelist for NSF's Science and Technology Program reviewing the *National Center for Earth Surface Dynamics*, University of Minnesota, June 2004.
Rapporteur for an *ASLO* working group of 44 limnologists and hydrologists who prepared "Emerging Research Questions for Limnology" for the NSF Geosciences Directorate, December 2002.

Instructor since 1994 of "Hydrochemical and Ecological Interactions between Groundwater and Surface Water", part of a USGS training course on "Groundwater-Surface Water Relationships" focusing on flow, transport and chemical fate at terrestrial-aquatic interfaces.

Co-author of "Ground Water and Surface Water: A Single Resource", USGS Circular 1139, one of the most widely disseminated and popular USGS circulars now in its fourth printing (40,000).

STUDENT AND POSTDOCTORAL ADVISEES: Postdoctoral: Katie Skalak (USGS) 2009 – , Ben O'Connor (USGS) 2006 – 2009, Durelle Scott (USGS) 2003 – 2005, James Krest (USGS) 2000 – 2003, Jungyill Choi (USGS)1998 - 2001; PhD: Jesus Gomez (New Mexico Institute of Mining and Technology), Susa Stonedahl (Northwestern University), Laurel Larsen (University of Colorado), Craig Tobias (Virginia Institute Marine Science), Jungyill Choi (University of Arizona); M.S.: Scott Hulseapple (University of Arizona), Roger Koelsch (University of Arizona), Elizabeth Robbins (University of Arizona). B.S.: Jonah Jackson (University of Virgina)

COLLABORATORS IN PAST FIVE YEARS: Alexander, R.A., Bohlke, J.K., Boyer, E.W., Cardenas, M.B., Crimaldi, J.P., David, M.B., Hondzo, M., Krest, J.M., Krupa, S.L., Larsen, L.G., McCormick, P.V., Mulholland, P.J., Mylon, S.E., Newlin,, J.T., Noe, G.B., O'Connor, B.L., Packman, A.I., Saiers, J.E., Schwarz, G.E., Smith, L.K., Smith, R.L., Seitzinger, S.P., Tobias, C.R., Voytek, M.A., Wollheim, W.M., Worman, A.

INVITED MEETING PRESENTATIONS (SINCE 2000)

Harvey, J.W., and Krupa, S.L. (2000) Wetland and groundwater interactions affected by water management in the Florida Everglades, **Society of Wetland Scientists,** Millenium Wetland Event, August 6 – 12, 2000, Quebec, Canada, p. 396 in program with abstracts.

Harvey, J.W. (2000) Scale dependence of wetland and groundwater interactions in the Florida Everglades, **Geological Society of America**, Annual Meeting, November 9 – 18, 2000, Reno, NV.

Harvey, J., Fuller, C., and Conklin, M. (2001) Hydrologic exchange between streams and hyporheic zones enhances biologically-mediated transformations of contaminants, **Society of Environmental Toxicology and Chemistry** 22nd Annual Meeting in North America, November 11 – 15, 2001, Baltimore, MD.

Harvey, J.W. (2002) Recent advances in characterizing hyporheic flow and enhanced biogeochemical reactions in streams and rivers, **American Society of Limnology and Oceanography**, Summer Meeting – Inter-disciplinary Linkages in Aquatic Sciences and Beyond, June 10 – 14, 2002, Victoria, British Columbia, Canada, p 54 in abstract book.

Harvey, J.W. (2005) Scale dependence of measurements of surface-water and groundwater interactions in Everglades wetlands. **American Geophysical Union** –Joint Assembly, May 23-27, 2005, New Orleans, LA.

Harvey, J.W., Bohlke, J.K., Conklin, M.H., Fuller, C.C., Packman, A.I., Saiers, J.E., (2005) The expanding scope of hyporheic-zone investigations in streams, rivers, and wetlands: connecting small-scale storage processes with reach-scale cumulative effects. **Geological Society of America**, Annual Meeting, October 16-19, 2005, Salt Lake City, UT.

Harvey, J.W. (2007) Hydroecology of streams and rivers. Plenary presentation for the XXXV **International Association of Hydrogeologists (IAH) Congress 'Groundwater and ecosystems'** - 17-21 September 2007, Lisbon, Portugal.

Harvey, J. W., Schaffranek, R. W., Larsen, L. G., Nowacki, D. ., Noe, G. B., O'Connor, B. L., (2008) Controls on flow velocity and flow resistance in the patterned floodplain landscape of the Everglades. Session 110, paper 3, **American Society of Limnology and Oceanography**, Ocean Sciences Meeting, March 2-7, 2008, Orlando, Florida.

Harvey, J.W., (2008) *In Situ* measurements of hyporheic flow and biogeochemical reactions across a wide range of flow and sediment conditions in aquatic systems. **Geological Society of America**, Annual Meeting, October 5 – 9, 2008, Houston, TX.

Harvey, J.W., and O'Connor, B.L., (2008) Scaling Hyporheic Flow and Biogeochemical Reactions across a Wide Range of Flow and Sediment Conditions in Aquatic Systems. **American Geophysical Union**–Fall Meeting, December 15-19, 2008, San Francisco, Eos Trans. AGU, 89(53), Fall Meet. Sup, Abstract H14B-01.

PUBLICATIONS (77 Total)

O'Connor, B.L., Hondzo, M., and J.W. Harvey. 2010 (in press). Predictive Modeling of Transient Storage and Nutrient Uptake: Implications for Stream Restoration. *Journal of Hydraulic Engineering.* doi:10.1061/(ASCE)HY.1943-7900.0000180

Noe, G.B., J. Harvey, R. Schaffranek, and L. Larsen. 2010. Controls of suspended sediment transport, physical and biogeochemical characteristics, and sources in a subtropical wetland. *Wetlands* 30:39-54. doi:10.1007/s13157-009-0002-5.

Harvey, J.W., R.W. Schaffranek, G.B. Noe, L.G. Larsen, D.J. Nowacki and B.L. O'Connor. 2009. Hydroecological factors governing surface-water flow on a low gradient floodplain. *Water Resources Research*. doi:10.1029/2008WR007129. pdf (396 KB)

Larsen, L. G., J. W. Harvey, and J. P. Crimaldi. 2009. Prediction of bed shear stresses and its role in sediment dynamics and restoration potential of the Everglades and other vegetated flow systems. *Ecological Engineering* 35:1773-1785, doi:10.1016/j.ecoleng.2009.02.002.

O'Connor, B.L., Hondzo, M., and Harvey, J.W., 2009. Incorporating Physical and Kinetic Limitations in Quantifying Dissolved Oxygen Flux to Aquatic Sediments, *Journal of Environmental Engineering*, Vol. 135, No. 12, 10.1061/_ASCE_EE.1943-7870.0000093.

Harvey, J.W. and P.V. McCormick. 2009. Groundwater's significance to changing hydrology, water chemistry, and biological communities of a floodplain ecosystem, Everglades, south Florida. *Hydrogeology Journal*. doi:10.1007/s10040-008-0379-x. pdf (568 KB)

Alexander, R.B., J.K. Bohlke, E.W. Boyer, M.B. David, J.W. Harvey, P.J. Mulholland, S.P. Sietzinger, C.R. Tobias, C. Tonitto and W.M. Wollheim. 2009. Dynamic modeling of nitrogen losses in river networks unravels the coupled effects of hydrological and biogeochemical processes. *Biogeochemistry*, doi:10.1007/s10533-008-9274-8. pdf (783 KB)

Bohlke, J.K., R.C Antweiler, J.W. Harvey, A.E. Laursen, L.K. Smith, R.L. Smith and M.A. Voytek. 2009. Multi-scale measurements and modeling of denitrification in streams with varying flow and nitrate concentration in the upper Mississippi River basin, USA. *Biogeochemistry*, doi:10.1007/s10533-008-9282-8. pdf (906 KB)

Tobias, C.R., J.K. Bohlke, J.W. Harvey and E. Busenberg. 2009. A simple technique for continuous measurement of time-variable gas transfer in surface waters. *Limnology and Oceanography: Methods*,7: 185-195. pdf (383 KB)

Larsen, L.G., J.W. Harvey, J.P. Crimaldi, and G.B. Noe. 2009. Predicting organic floc transport dynamics in shallow aquatic ecosystems: insights from the field, laboratory, and numerical modeling. *Water Resources Research*, 45: W01411, doi:10.1029/2008WR007221. pdf (645 KB)

Larsen, L.G., Harvey, J.W. and Crimaldi, J.P. 2009. Morphologic and transport properties of natural organic floc. *Water Resources Research*, 45: W01410, doi:10.1029/2008WR006990. pdf (541 KB)

O'Connor, B.L. and J.W. Harvey. 2008. Scaling hyporheic exchange and its influence on biogeochemical reactions in aquatic ecosystems. *Water Resources Research* 44, W12423, doi:10.1029/2008WR007160. pdf (618 KB)

Huang, Y.H., J.E. Saiers, J.W. Harvey, G.B. Noe and S. Mylon. 2008. Advection, dispersion, and filtration of fine particles within emergent vegetation of the Florida Everglades. *Water Resources Research* 44, W04408. doi:10.1029/2007WR006290. pdf (450 KB)

Cardenas, M.B., J.W. Harvey, A.I. Packman and D.T. Scott. 2008. Ground-based thermography of fluvial systems at low and high discharge reveals potential complex thermal heterogeneity driven by flow variation and bioroughness. *Hydrological Processes* 22: 980–986. doi: 10.1002/hyp.6932 pdf (893 KB)

Larsen, L.G., J.W. Harvey and J.P. Crimaldi. 2007. A delicate balance: ecohydrological feedbacks governing landscape morphology in a lotic peatland, *Ecological Monographs* 77(4): 591-614.article (941 KB)

Tobias, C.R., J.K. Böhlke and J.W. Harvey. 2007. The oxygen-18 isotope approach for measuring aquatic metabolism in high productivity waters: Advantages and limitations, *Limnology and Oceanography* 52: 1439-1453.pdf (1217 KB)

Noe, G.B., J.W. Harvey and J.E. Saiers. 2007. Characterization of suspended particles in Everglades wetlands, *Limnology and Oceanography* 52(3):1166-1178.pdf (3490 KB)

Wörman, A., A.I. Packman, L. Marklund, J.W. Harvey and S.H. Stone. 2007. Fractal topography and subsurface flows from fluvial bedforms to the continental shield, *Geophysical Research Letters* 34, L07402, doi:10.1029/2007GL029426.pdf (191 KB)

Scott, D., J.W. Harvey, R.A. Alexander and G.E. Schwarz. 2006. Dominance of organic nitrogen from headwater streams to large rivers across the conterminous US. *Global Biogeochemical Cycles*, GB1003, doi:10.1029/2006GB002730.pdf (251 KB)

Wörman, A., A.I. Packman, L. Marklund, J.W. Harvey and S.H. Stone. 2006. Exact three-dimensional spectral solution to surface-groundwater interactions with arbitrary surface topography, *Geophysical Research Letters* 33(7), L07402, doi:10.1029/2006GL025747.pdf (1379 KB)

Harvey, J.W., J.T. Newlin and S.L. Krupa. 2006. Modeling decadal timescale interactions between surface water and ground water in the central Everglades, Florida, USA. *Journal of Hydrology* 320:400-420.article

Smith, L.K., M.A. Voytek, J.K. Böhlke and J.W. Harvey. 2005. Denitrification rates in nitrate-contaminated streams: application of membrane inlet mass spectrometry and isotope tracer. *Ecological Applications* 16(6):2191-2207.pdf (236 KB)

Harvey, J.W., J.T. Newlin, J.M. Krest, J. Choi, E.A. Nemeth and S.L Krupa. 2005b. Surface water and ground water interactions in Water Conservation Area 2A, Central Everglades. *U.S. Geological Survey Scientific Investigations Report* 2004-5069. 88p.

Harvey, J.W., J.T. Newlin and J.E. Saiers. 2005a. Solute transport and storage mechanisms in wetlands of the Everglades, South Florida. *Water Resources Research* 41, W05009, doi:10.1029/2004WR003507. article (862 KB)

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.article

Bohlke, J. K., J.W. Harvey and M.A. Voytek. 2004. Reach-scale isotope tracer experiment to quantify denitrification and related processes in a nitrate-rich stream, midcontinent United States. *Limnology and Oceanography*, 49: 821-838. pdf (368 KB)

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.article (215 KB)

Harvey, J.W., M.H. Conklin and R. Koelsch. 2003. Predicting changes in hydrologic retention in an evolving semi-arid alluvial. *Advances in Water Resources* 26:939-950.pdf (457 KB)

Grimm, N.B., S.E. Gergel, W.H. McDowell, E.W. Boyer, C.L Dent, P.M Groffman, S.C Hart, J.W. Harvey, C.A. Johnston, E. Mayorga, M.E. McClain and G. Pinay. 2003. Merging Aquatic and Terrestrial Perspectives of Nutrient Biogeochemistry, *Oecologica* 442:485-501, doi:10.1007/s00442-003-1382-5. pdf (188 KB)

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*, 48:290-298. article

McClain, M.E., E.W. Boyer, C.L. Dent, S.E. Gergel, N.B. Grimm, P.M. Groffman, S.C. Hart, J.W. Harvey, C.A. Johnston, E. Mayorga, W.H. McDowell and G. Pinay. 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. pdf (373 KB)

National Research Council (2002) Riparian Areas: Functions and Strategies for Management. Washington D.C. National Academy Press. 428 p. http://www.nap.edu/catalog/10327.html).

Harvey, J.W., S.L. Krupa, C. Gefvert, R.H. Mooney, J. Choi, S.A. King and J.B. Giddings. 2002. Interactions between surface water and ground water and effects on mercury transport in the north-central Everglades. *U.S. Geological Survey Water-Resources Investigations Report* 02-4050, 82 p. pdf (3199 KB)

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. pdf (262 KB)

Tobias, C.R., S.A. Macko, I.C. Anderson, E.A. Canuel 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. pdf (458 KB)

Bates, A.L., W.H. Orem, J.W. Harvey and E.C. Spiker. 2001. Geochemistry of Sulfur in the Florida Everglades: 1994 through 1999. *U.S. Geological Survey Open File Report* 01-7. 54 pages.

Tobias, C.R., J.W. Harvey and I.C. Anderson. 2001. 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. pdf (251 KB)

Choi, J., and J.W. Harvey. 2000. Effect of water management in the Everglades Nutrient Removal Area (ENR) on hydrologic interactions with groundwater. pages 12-14 in U.S. Geological Survey Program on the South Florida Ecosystem: 2000 Proceedings. *U.S. Geological Survey Open-File Report* 00-449.

Harvey, J.W., J.M. Jackson, R.H. Mooney and J. Choi. 2000. Interactions between ground water and surface water in Taylor Slough and Vicinity, Everglades National Park, south Florida: Study Methods and Appendixes. *U.S. Geological Survey Open-File Report* 00-483. 67 pages. article

Harvey, J.W., J. Choi and R.H. Mooney. 2000. Hydrologic interactions between surface and ground water in Taylor Slough, Everglades National Park. pages 24 – 26 in U.S. Geological Survey Program on the South Florida Ecosystem: 2000 Proceedings. *U.S. Geological Surveyn Open-File Report* 00-449.

Bates, A.L., W.H. Orem, J.W. Harvey and E.C. Spiker. 2001. Geochemistry of Sulfur in the Florida Everglades: 1994 through 1999. *U.S. Geological Survey Open File Report* 01-7. 54 pages. article

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. article

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. pdf (430 KB)

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. pdf (106 KB)

Harvey, J.W. and B.J. Wagner. 2000. Quantifying hydrologic interactions between streams and their subsurface hyporheic zones, p. 3 – 44 in Jones, J.A., and Mulholland, P.J. (Eds), Streams and Ground Waters, Academic Press, San Diego. p. 3–44.

Harvey, J.W., C.C. Fuller and M.H. Conklin. 1999. Enhanced removal of dissolved manganese in hyporheic zones: centimeter-scale causes and kilometer-scale consequences, in Morganwalp, D.W. and Buxton, H.T., eds., U.S. Geological Survey Toxic Substances Hydrology Program, Proceedings of the Technical Meeting, Charleston, South Carolina, March 8-12, 1999, Volume 1, Contamination from Hard Rock Mining: *U.S. Geological Survey Water-Resources Investigations Report* 99-4018A, p. 193-199. article

Choi, J. and J.W. Harvey. 1999. Use of multi-parametric sensitivity analysis to determine relative importance of factors influencing natural attenuation of mining contaminants, in Morganwalp, D.W. and Buxton, H.T., eds., U.S. Geological Survey Toxic Substances Hydrology Program, Proceedings of the Technical Meeting, Charleston, South Carolina, March 8-12, 1999, Volume 1, Contamination from Hard Rock Mining: *U.S. Geological Survey Water-Resources Investigations Report* 99-4018A, p. 185-191. article

Wagner, B.J. and J.W. Harvey. 1999. Evaluating the ability of tracer tests to quantify reactive solute transport in stream-aquifer systems, in Morganwalp, D.W. and Buxton, H.T., eds., U.S. Geological Survey Toxic Substances Hydrology Program, Proceedings of the Technical Meeting, Charleston, South Carolina, March 8-12, 1999, Volume 1, Contamination from Hard Rock Mining: *U.S. Geological Survey Water-Resources Investigations Report* 99-4018A, p.201-209. article

Fuller, C.C. and J.W. Harvey. 1999. The effect of trace-metal reactive uptake in the hyporheic zone on reach-scale metal transport in Pinal Creek, Arizona, in Morganwalp, D.W. and Buxton, H.T., eds., U.S. Geological Survey Toxic Substances Hydrology Program, Proceedings of the Technical Meeting, Charleston, South Carolina, March 8-12, 1999, Volume 1, Contamination from Hard Rock Mining: *U.S. Geological Survey Water-Resources Investigations Report* 99-4018A, p. 163-172. article

Winter, T.C., J.W. Harvey, O.L. Franke and W. Alley. 1998. Ground water and surface water -- one resource, *U.S. Geological Survey Circular* 1139, 90 p. article

Duff, J.H., F. Murphy, C.C. Fuller, F.J. Triska, J.W. Harvey and A.P. Jackman. 1998. A mini drivepoint sampler for measuring porewater solute concentrations in the hyporheic zone of sand-bottom streams. *Limnology and Oceanography*, 43(6):1378-1383. pdf (1691 KB)

Harvey, J.W., and C.C. Fuller. 1998. Effect of enhanced manganese oxidation in the hyporheic zone on basin-scale geochemical mass balance, *Water Resources Research*, 34(4):623-636. pdf (263 KB)

Choi, J., S.M. Hulseapple, M.H. Conklin and J.W. Harvey. 1998. Modeling CO_2 degassing and pH in a stream-aquifer system. *Journal of Hydrology*, 209, 297-310.pdf (365 KB)

Wagner, B.J. and J.W. Harvey. 1997. Experimental design for estimating parameters of rate-limited mass transfer: analysis of stream tracer studies. *Water Resources Research*, 33(7)1731-1741. pdf (364 KB)

Harvey, J.W. 1997. Book review -- Solute Modelling in Catchment Systems. *Regulated Rivers*, 32(2):1.

Brown, J.G., R. Brew and J.W. Harvey. 1997. Research on acidic metal contaminants in Pinal Creek Basin near Globe, Arizona. *U.S. Geological Survey Fact Sheet* FS-005-97.

Harvey, J.W., B.J. Wagner and K.E. Bencala. 1996. Evaluating the reliability of the stream tracer approach to characterize stream-subsurface water exchange. *Water Resources Research*, 32(8), 2441-2451. pdf (2587 KB)

Harvey, J.W. 1996. Vertical exchange of ground water and surface water in the Florida Everglades. *U.S. Geological Survey Fact Sheet* FS-169-96.

Wagner, B.J. and J.W. Harvey. 1996. Solute transport parameter estimation for an injection experiment at Pinal Creek Arizona. In Morganwalp, D.W., and Aronson, D.A., eds., U.S.

Geological Survey Toxic Substances Hydrology Program--Proceedings of the Technical Meeting, Colorado Springs, Colorado, September 20-24, 1993: *U.S. Geological Survey Water-Resources Investigations Report* 94-4015, vol. 2, p. 1081-1088.

Harvey, J.W., C.C. Fuller and B.J. Wagner. 1996. Interactions between shallow ground water and surface water that affect metal transport in Pinal Creek, Arizona. In Morganwalp, D.W., and Aronson, D.A., eds., U.S. Geological Survey Toxic Substances Hydrology Program--Proceedings of the Technical Meeting, Colorado Springs, Colorado, September 20-24, 1993: *U.S. Geological Survey Water-Resources Investigations Report* 94-4015, vol. 2, p. 1065-1072.

Harvey, J.W. and C.C. Fuller. 1996. Association of selected metals with colloidal and suspended particulate material in shallow ground water and surface water at Pinal Creek, Arizona. In Morganwalp, D.W., and Aronson, D.A., eds., U.S. Geological Survey Toxic Substances Hydrology Program--Proceedings of the Technical Meeting, Colorado Springs, Colorado, September 20-24, 1993. *U.S. Geological Survey Water-Resources Investigations Report* 94-4015, vol. 2, p. 1073-1080.

Brown, J.G. and J.W. Harvey. 1996. Hydrologic and geochemical factors affecting metal-contaminant transport in Pinal Creek basin near Globe, Arizona. In Morganwalp, D.W., and Aronson, D.A., eds., U.S. Geological Survey Toxic Substances Hydrology Program--Proceedings of the Technical Meeting, Colorado Springs, Colorado, September 20-24, 1993: *U.S. Geological Survey Water-Resources Investigations Report* 94-4015, vol. 2, p. 1035-1042.

Harvey, J.W., R.M. Chambers, and J.R. Hoelscher. 1995. Preferential flow and segregation of porewater solutes in wetland sediment. *Estuaries*, 18(4), 568-578.pdf (427 KB)

Nuttle, W.K. and J.W. Harvey. 1995. Fluxes of water and solute in a coastal wetland sediment 1: The contribution of regional groundwater discharge. *Journal of Hydrology*, 164, 89-107. pdf (1122 KB)

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