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EDUCATION

Ph.D., Geosciences, Colorado State University, 2005

M.S., Energy and Resources Group, University of California, Berkeley, 1996

B.A., History, Stanford University, 1992

APPOINTMENTS

Assistant Professor, Department of Geosciences, University of Montana, 2007–present

National Research Council Post-Doctoral Research Associate, U.S. Geological Survey,

Geomorphology and Sediment Transport Laboratory, Golden, CO, 2005–2007

Research on interactions among flow regimes, sediment dynamics, and riparian vegetation; effects of floods on native versus non-native seedlings; and quantification of ecological flow requirements in regulated rivers.

Doctoral Student Researcher, Colorado State University, 2000–2005

Research on flow hydraulics and channel morphology in steep streams, including stress partitioning among bedforms, woody debris, and bed particles; effects of woody debris on flow resistance; linkages among hydraulics, geomorphic processes and invertebrate drift; and three-dimensional flow structure and turbulence.

Master's Student Researcher, University of California, Berkeley, 1994–1996

Research on hydrologic and geomorphic effects of transbasin water diversions in Colorado Rockies; biogeochemical effects of experimental climate warming in subalpine ecosystems; and economic benefits of ecosystem services in Gunnison County, CO.

EDUCATIONAL ACTIVITIES

University of Montana, Department of Geosciences: *General Geology* (Fall 2008), *Process Geomorphology* (Fall 2008), *Fluvial Geomorphology and Riverine Ecosystems Seminar* (Fall 2007); *Fluvial Geomorphology* (Spring 2008)

Colorado State University: Instructor, *Geology Summer Field Course* (2005); Guest Lecturer, *Fluvial Geomorphology, Integrated Ecosystem Management, Geomorphology*, (2003–2007); Teaching Assistant, *Physical Geology, Geomorphology* (W. Sanford, S. Rathburn, instructors) (2002–2004); Mentor, NSF Research Experience for Undergraduates program (2001, 2002)

University of California, Berkeley: Reader, *Energy and Society* (J. Holdren, instructor) (1995)

Stanford University: Instructor, *The Arab-Israeli Peace Process* (Innovative Academic Courses, 1992); Tutor, *Stanford-Ravenswood Tutoring Program* (1990–1992)

PUBLICATIONS

- Shafroth, P. B., **A. C. Wilcox**, D.A. Lytle, J. T. Hickey, D. C. Andersen, V.B. Beauchamp, A. Hautzinger, , L. McMullen, and A. Warner. In review. “Models and tools to assist environmental flow development and implementation below reservoirs: lessons from an arid-region river.” Submitted to *Freshwater Biology*, special issue on environmental flows.
- Wilcox, A. C.**, B. L. Peckarsky, B. W. Taylor, and A. C. Encalada. 2008. “Hydraulic and geomorphic effects on mayfly drift in high-gradient streams at moderate discharges.” *Ecohydrology* 1:176-186.
- Cui, Y. and **A. C. Wilcox**. 2008. “Development and application of numerical modeling of sediment transport associated with dam removal.” In M. Garcia, ed. *Sedimentation Engineering: Theory, Measurements, Modeling and Practice* (ASCE Manuals and Reports on Engineering Practice No. 110). American Society of Civil Engineers. pp. 995–1020.
- Wilcox, A. C.** and E. E. Wohl. 2007. “Field measurements of three-dimensional hydraulics in a step-pool channel.” *Geomorphology* 83:215–231.
- Comiti, F., L. Mao, **A. Wilcox**, E. E. Wohl, and M. A. Lenzi. 2007. “Field-derived relationships for flow velocity and resistance in step-pool streams.” *Journal of Hydrology* 340:48–62.
- Wilcox, A. C.** and E. E. Wohl. 2006. “Flow resistance dynamics in step-pool channels: 1. Large woody debris and controls on total resistance.” *Water Resources Research* 42: W05418, doi:10.1029/2005WR004277.
- Wilcox, A. C.**, J. M. Nelson, and E. E. Wohl. 2006. “Flow resistance dynamics in step-pool channels: 2. Partitioning between grain, spill, and woody debris resistance.” *Water Resources Research* 42: W05419, doi:10.1029/2005WR004278.
- Wohl, E. E. and **A. Wilcox**. 2005. “Channel geometry of mountain streams in New Zealand.” *Journal of Hydrology* 300:252–256.
- Wilcox, A.** and J. Harte. 1997. “Ecosystem services in a modern economy: Gunnison County, Colorado.” In G. Daily, ed. *Nature’s Services: Societal Dependence on Natural Ecosystems*. Island Press, Washington, D.C. pp. 311–328.

MANUSCRIPTS IN PREPARATION

- Wilcox, A. C.**, F. Comiti, and E. E. Wohl. “Bedform geometry and hydraulics in step-pool channels.” In preparation for *Journal of Geophysical Research-Earth Surface*.
- Wilcox, A. C.** and P. B. Shafroth. “Effects of managed flood releases on morphodynamics and riparian vegetation in a desert river.” In preparation for *Ecological Applications*.

THESES AND OTHER PUBLICATIONS

- Rathburn, S. L., A. Meyer, C. Ferrantelli, **A. Wilcox**, D. Cadol, D. Kreiner, and T. Birdsall. 2007. “Introductory Geology Laboratory Manual for Colorado State University Students.” Pearson Custom Publishing, Boston, MA. 155 p.
- Wilcox, A.** and D. M. Merritt. 2005. “Effects of modified flow regimes on the Dolores River.” In *Riparian Response to Altered Flow Regimes*, Proceedings of the Colorado Riparian Assoc. 18th Annual Conference. Durango, CO. pp. 69–83.
- Wilcox, A. C.** 2005. “Interactions between Flow Hydraulics and Channel Morphology in Step-pool Streams.” Ph.D. thesis. Department of Geosciences. Colorado State University.

- Wilcox, A. C.** 1996. "Transmountain Water Diversions in the Colorado Rockies." M.S. thesis. Energy and Resources Group. University of California, Berkeley.
- Williams, P. B., W. Trush, S. McBain, J. Vick, A. Sari, **A. Wilcox**, and K. Plaut. 1995. *A review of the Environmental Impact Assessment [Interim Report] of the Bakun Hydroelectric Project prepared for Ekran Berhad*. International Rivers Network Report.
- Wilcox, A. C.** 1992. "The Remaking of Zion: Hydraulic Development in Israel, 1948–1967." Undergraduate honors thesis. Department of History. Stanford University.

PRESENTATIONS (*=STUDENT AUTHOR)

- Wilcox, A. C.**, D. Brinkerhoff*, C. Woelfle-Erskine*. 2008. "Initial geomorphic responses to removal of Milltown Dam, Clark Fork River, Montana, USA." *EOS Trans. AGU*. 89(53) Fall Meet. Suppl. Abstract H41I-07.
- Epstein, J.A.* and **Wilcox, A. C.** 2008. "Reservoir sediment evacuation and channel evolution: Upstream geomorphic response of the Blackfoot River, Montana, to removal of Milltown Dam." *EOS Trans. AGU*. 89(53) Fall Meet. Suppl. Abstract H43B-0994.
- Cui, Y., B.K. Orr, **A. Wilcox**, J. Vick, C. Podolak, and P. Wilcock. 2008. "Marmot Dam removal: Predictions and observations." *EOS Trans. AGU*. 89(53) Fall Meet. Suppl. Abstract H41I-06.
- Wilcox, A. C.** 2008. "Ecogeomorphic processes and feedbacks in mountains streams." Rocky Mountain Biological Laboratory, Gothic, CO. Invited seminar. 5 August.
- Wilcox, A. C.**, P.B. Shafroth, and R.R. McDonald. 2008. "Topographic input for two-dimensional hydraulic modeling along a desert river to investigate flow-vegetation feedbacks." National Center for Airborne Laser Mapping Workshop: Study Earth Surface Processes with High-Resolution Topographic Data. 16–18 June. Boulder, CO.
- Wilcox, A. C.**, P.B. Shafroth, and R.R. McDonald. 2008. "Feedbacks among floods, geomorphic processes, and riparian vegetation seedlings in a desert river." 20–23 May. Meeting of Young Researchers in Earth Sciences (MYRES): Dynamic Interactions of Life and its Landscape. New Orleans, LA.
- Wilcox, A. C.**, P.B. Shafroth, and R.R. McDonald. 2007. "Controlled floods, geomorphic processes, and riparian vegetation mortality in a sand-bed desert river." *EOS Trans. AGU*. 88(52) Fall Meet. Suppl. Abstract H34A-05.
- Wilcox, A. C.**, P.B. Shafroth, R.R. McDonald, P.J. Kinzel, J.M. Nelson. 2007. "Interactions among river flow, geomorphic processes, and riparian vegetation: field studies and computational modeling of a sand-bed desert river." Ecological Society of America / Society of Ecological Restoration Joint Meeting. 5–10 August. San Jose, CA.
- Wilcox, A. C.** 2007. "Effects of a controlled flood release on native versus non-native riparian vegetation and geomorphic processes in a desert river." American Assoc. of Geographers Annual Meeting. 18–21 April. San Francisco, CA.
- Wilcox, A. C.**, P.B. Shafroth, R.R. McDonald, P.J. Kinzel, J.M. Nelson. 2007. "Interactions among river flow, geomorphic processes, and riparian vegetation." National Surface Water Conference & Hydroacoustics Workshop. 2–6 April. St. Louis, MO.
- Kinzel, P.J., R.R. McDonald, J.M. Nelson, **A.C. Wilcox**. 2007. "Use of laboratory experiments to aid in testing numerical models of river channel evolution." National Surface Water Conference & Hydroacoustics Workshop. 2–6 April. St. Louis, MO.

- Fuller, B.*, L. S. Sklar, Z. G. Compson, K. J. Adams, J. C. Marks, **A. C. Wilcox**. 2006. "Step-pool spacing in a travertine system, Fossil Creek, Arizona." *EOS Trans. AGU*. 87(52) Fall Meet. Suppl. Abstract H51G-0562.
- Wilcox, A. C.** and P. Shafroth. 2006. "Hydrogeomorphic effects of a controlled flood release on *Tamarix* and *Salix*, Bill Williams River, AZ." 2006 Tamarisk Research Conference: Current Status and Future Directions. Fort Collins, CO.
- Wilcox, A.**, F. Comiti, and E. Wohl. 2006. "Local-scale hydraulics and morphology in a steep channel, Italian Dolomites." European Geosciences Union General Assembly. Vienna, Austria. *Geophysical Research Abstracts* 8: 05239.
- Wilcox, A. C.** 2005. "Interactions between flow hydraulics and channel morphology in step-pool streams." USGS National Research Program seminar. Denver Federal Center, Lakewood, CO. 29 Nov.
- Wilcox, A.** and D. M. Merritt. 2005. "Effects of modified flow regimes on the Dolores River." Colorado Riparian Assoc. 18th Annual Conference. Durango, CO.
- Wilcox, A. C.** and E. E. Wohl. 2005. "Three-dimensional hydraulics in a step-pool channel." American Assoc. of Geographers Annual Meeting. Denver, CO.
- Wilcox, A. C.**, E. E. Wohl, and J. M. Nelson. 2004. "Flow resistance partitioning in step-pool channels." *EOS Trans. AGU*. 85(47) Fall Meet. Suppl. Abstract H43A-0370.
- Wilcox, A. C.** 2004. "Step-pool channels." Dept. of Land and Agro-Forest Environments, Univ. of Padua, Italy. 20 May.
- Wilcox, A.**, E. Wohl, and R. Turner*. 2004. "Resistance partitioning in step-pool channels." AGU Hydrology Days. Fort Collins, CO. (*=undergraduate)
- Wilcox, A. C.** and B. L. Peckarsky. 2003. "Linkages between hydraulics, morphology, and benthic communities in high-gradient streams." *EOS Trans. AGU*. 84(46) Fall Meet. Suppl. Abstract H52A-1151.
- Wilcox, A.** and E. Wohl. 2003. "Spatial and temporal patterns of velocity and turbulence in a step-pool channel." *Abstracts with Programs-Geological Society of America* 35(6), Paper No. 6-12.
- Wohl, E. E. and **A. Wilcox**. 2003. "Channel geometry of mountain rivers in New Zealand." *Abstracts with Programs-Geological Society of America* 35(6), Paper No. 6-13.
- Wilcox, A. C.** 2003. "Velocity and turbulence characteristics in a step-pool channel in the Colorado Rockies." Canadian Assoc. of Geographers Annual Meeting. Univ. of Victoria, BC, Canada.
- Wilcox, A.**, E. Wohl, and J. Kray*. 2002. "ADV measurements of velocity and turbulence characteristics in a step-pool channel." *EOS Trans. AGU*. 83(47) Fall Meet. Suppl. Abstract H11C-0854. (*=undergraduate)
- Wilcox, A.**, E. Wohl, J. Kray*, and G. Vallance*. 2002. "Controls on hydraulic resistance in step-pool channels." *Abstracts with Programs- Geological Society of America* 87-14. (*=undergraduate)
- Orr, B. K., C. A. Braudrick, **A. Wilcox**, J. C. Vick, S. H. Kramer, Y. Cui, and J. Keil. 2002. "Evaluation of geomorphic effects of the removal of Marmot Dam and potential impacts on anadromous salmonids." Hydrovision 2002 Conference. Portland, OR.
- Wilcox, A.**, E. Wohl, J. Kray*, and K. Schmidt*. 2002. "A flume study of hydraulic resistance in step-pool channels." AGU Hydrology Days. Fort Collins, CO. (*=undergraduate)
- Wilcox, A.** and E. Wohl. 2001. "Hydraulic resistance in steep channels." *EOS Trans. AGU*. 82(47) Fall Meet. Suppl. Abstract H52B-0408.

- Wilcox, A.,** Y. Cui, J. Vick, and W. Dietrich. 2000. “Geomorphic assessment and numerical modeling of sediment transport associated with dam removal: Case study of Marmot Dam, Sandy River, OR.” *EOS Trans. AGU*. 81(48) Fall Meet. Suppl. Abstract H12E-07.
- Wilcox, A.** 1996. “Geomorphic and hydrological effects of transmountain water diversions in the Colorado Rockies.” AGU Hydrology Days. Fort Collins, CO.

GRANTS

- USEPA and US Forest Service. “Linkages among river restoration, physical habitat, ecosystem processes, and water quality: Upper Blackfoot River, Mike Horse Mine, Montana.” \$185,000, 2009-2010
- National Science Foundation, Small Grant for Exploratory Research (SGER). “Dam removal and the response of gravel-bed rivers to sediment pulses: Sediment transport and channel evolution in the Clark Fork River, MT following removal of Milltown Dam.” \$29,923, 2008
- Montana Water Center / U.S. Geological Survey 104(b) Water Resources Research Program. “Evolution of channel morphology and aquatic habitat in the Middle Clark Fork River following removal of Milltown Dam.” \$15,818, 2008–2010
- University Grant Program. “Dam removal and river response to increased sediment supply: Investigation of downstream sediment transport and channel change in the Clark Fork River following removal of Milltown Dam.” U. Montana, \$3500, 2008.
- National Science Foundation, International Program Grant. “Flow hydraulics along step-pool channels.” 2003–2004 (PI: E. Wohl; grant co-written by A. Wilcox)
- Warner-Chevron Graduate Research Grant. “Flow hydraulics, morphology, and aquatic habitat in step-pool stream channels.” Dept. of Geosciences, Colorado State University, 2003
- Geological Society of America Graduate Research Grant. “Velocity structure, turbulence, and morphology of steep mountain stream channels.” 2002
- Undergraduate Research Opportunities Small Grant. “Hydraulic development and the Arab-Israeli conflict.” Stanford University, 1991

HONORS, FELLOWSHIPS, SCHOLARSHIPS

National / State

- AGU Editors’ Citation for Excellence in Refereeing, *Water Resources Research*, 2005
- First place, Colorado Scientific Society Student Oral Presentation Competition, 2004
- Geological Society of America Outstanding Student Research Award, Research grant proposal recognized for exceptional high merit in concept and presentation, 2002
- J. Hoover Mackin Award, Honorable Mention, Quaternary Geology Division, GSA, 2002
- Richard M. Herbert Memorial Scholarship, American Water Resources Association, 2001
- Best M.S. Student Poster, AGU Hydrology Days Conference, Fort Collins, CO, 1996

Colorado State University

- First place, Dept. of Geosciences Student Oral Presentation Competition, 2004
- Anderson Graduate Scholarship (2003–2004), Lary Kent Burns Memorial Scholarship (2002–2003), Stanley Schumm Graduate Scholarship, (2001–2002), University Supplemental Fellowship (2000–2001)
- Edward M. Warner Research Assistant, Dept. of Geosciences, 2003–2004

Stanford University

- Graduated with Honors and Distinction in major, 1992
- Robert M. Golden Medal for Excellence in Humanities and Creative Arts (awarded for senior honors thesis), 1992

PROFESSIONAL EXPERIENCE

Environmental Flows Advisor, The Nature Conservancy Colorado, 2004–2007

Geomorphologist / Project Manager, Stillwater Sciences, Berkeley, CA, 1997–2000

Geomorphologist, Trihey and Associates, Concord, CA, 1996

Hydrology Intern, The Nature Conservancy, Boulder, CO, 1993–1994

Park Ranger, Yosemite National Park, Denali National Park, Summers 1992–1994

SYNERGISTIC ACTIVITIES

Reviewer

- Journals: *Geophysical Research Letters*, *GSA Bulletin*, *Water Resources Research*, *Freshwater Biology*, *Ecological Modelling*, *Environmental Management*, *GSA Special Paper*
- National Science Foundation: Hydrologic Sciences, Geomorphology and Land-Use Dynamics, Geography and Regional Science proposal reviews
- Other: CalFed Science Program, U.S. Geological Survey peer review, Sacramento Municipal Utility District technical review

Workshops / Short Courses

- “Teaching Geomorphology in the 21st Century,” On the Cutting Edge, National Association of Geoscience Teachers, Fort Collins, CO, 2008
- “Studying Earth Surface Processes with High-Resolution Topographic Data Workshop,” National Center for Airborne Laser Mapping, Boulder, CO, 2008
- “Meeting of Young Researchers in Earth Sciences (MYRES): Dynamic Interactions of Life and Its Landscape”. New Orleans, LA, 2008
- “Pathways to Scientific Teaching,” University of Montana, 2007
- “Low-slope sand-bed rivers,” National Center for Earth-surface Dynamics, 2006
- “Multidimensional Surface Water Modeling System,” USGS, 2001

Co-convener

- “River Restoration Science: Research and Application in Restoration Design and Environmental Flows”; Fall 2007 American Geophysical Union Meeting (with J. Castro and A. Simon)

Member

- American Geophysical Union, Geological Society of America, GSA Quaternary Geology and Geomorphology Division
- Missoula County, MT Stream Protection Technical Advisory Committee, 2008-present

- University of Montana Search Committee, Aquatic Invertebrate Ecologist, Dept. of Ecosystem and Conservation Sciences, 2008
- Dolores River (CO) Dialogue Science Committee, 2004-present

Media

- “River of research: For UM scientist, breach a study opportunity,” J. Cramer, *Missoulian* 28 March 2008, <http://missoulian.com/articles/2008/03/28/news/mtregional/news11.txt>
- “An interview with Dr. Andrew Wilcox,” *Montana Water News*, January 2008, http://water.montana.edu/mwnewsletter/archives/newsletter_08_01.htm