

CURRICULUM VITAE

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EDUCATION:

Ph.D., Forest Ecology, 1994. Department of Forest Science, Oregon State University, Corvallis OR.
Thesis Title: *Flux of ground water and nitrogen through the floodplain of a fourth-order stream.*

M.S., Biology, 1984. Department of Biology, New Mexico State University, Las Cruces NM 88003.
Thesis Title: *Recovery of Desert Grasslands in Big Bend National Park Following 36 Years of Protection from Grazing of Domestic Livestock.*

B.S., Range Science, 1981. Dept. Animal & Range Science, New Mexico State Univ., Las Cruces NM 88003.

EMPLOYMENT HISTORY:

Research Aquatic Ecologist, April 2000 to Present. Olympia Forestry Sciences Laboratory, Pacific Northwest Research Station, USDA Forest Service, Olympia WA.

Assistant Professor, June 1996 to March 2000. Dept. Forest Science, Oregon State University, Corvallis OR.

Temporary Assistant Professor of Water Resources Management, Aug 1995 to May 1996. Dept. Natural Resources, University of New Hampshire, Durham NH.

NSF-NATO Post Doctoral Fellow, March 1994 to March 1995. Centre d'Écologie des Systèmes Fluviaux, 29 rue Jeanne Marvig, Toulouse, France.

Graduate Research Assistant, Sept 1988 to Mar 1994. Dept. Forest Science, Oregon State University, Corvallis OR.

Research Assistant, Jan 1984 to Aug 1988. Dept. Biology, New Mexico State University, Las Cruces NM.

Graduate Assistant, Jan 1982 - Dec 1984. Dept. Biology, New Mexico State University, Las Cruces NM.

Research Technician, June 1981 - Dec 1981. Dept. Biology, New Mexico State University, Las Cruces NM.

Research Aid, Oct 1980 - May 1981. Dept. Biology, New Mexico State University, Las Cruces NM.

Range Technician, June 1980 - Sept 1980. United States Forest Service, Cuba NM.

Range Aid, Oct 1977 - May 1980. Dept. Animal & Range Science, New Mexico State University, Las Cruces NM.

PUBLICATIONS:

- Moore, R. D. and S. M. Wondzell. (*submitted*). Small Stream Channels and their Riparian Zones in the Pacific Northwest: Review of Physical Hydrology and the Effects of Forest Harvesting. One of a collection of papers from the Symposium and Workshop on Small Stream Channels and Riparian Zones: Their Form, Function and Ecological Importance in a Watershed Context", held at the Univ. of British Columbia, Vancouver, BC. 19-20 February, 2002. Submitted to the Journal of the American Water Resources Association.
- Wondzell, S. M. (*resubmitted following revision*). Effect of Morphology and Discharge on Hyporheic Exchange Flows In Two Small Streams in the Cascade Mountains of Oregon, USA. Submitted to Hydrological Processes.
- Gooseff, M. N., R. Haggerty, J. LaNier, J. K. Anderson, and S. M. Wondzell. (*under revision following peer review*). Hyporheic memory functions: A new technique for coupling solute transport modeling and groundwater flow modeling. Submitted to Hydrological Processes.
- Anderson, J. K, S. M. Wondzell, M. N. Gooseff, and R Haggerty (*in press*). Patterns in stream longitudinal profiles and implications for hyporheic exchange flow. Hydrological Processes.
- Gooseff, M. N., J. K. Anderson, S. M. Wondzell, J. LaNier, and R. Haggerty. (*in press*). A modeling study of hyporheic exchange pattern and the sequence, size, and spacing of stream bedforms in mountain stream networks. Hydrological Processes.
- Wondzell, S.M., and Howell, P.J. 2004. Chapter 6: Developing a decision support model for assessing condition and prioritizing the restoration of aquatic habitat in the interior Columbia Basin. Pgs. 73-81. *in* J. L. Hayes, A. A. Ager, and R. J. Barbour, Technical Editors. Methods for integrating modeling of landscape change: Interior Northwest Landscape Analysis System. PNW-GTR-610. USDA Forest Service, Pacific Northwest Research Station, General Technical Report 610.
- Shibata, H., Sugawara, O., Toyoshima, H., Wondzell, S.M., Nakamura, F., Kasahara, T., Swanson, F.J., and Sasa, K. 2004. Nitrogen dynamics in the hyporheic zone of a forested stream during a small storm, Hokkaido, Japan. Biogeochemistry 69:83-104..
- Gooseff, M.N., Wondzell, S.M., Haggerty, R., and Anderson, J. 2003. Comparing Transient Storage Modeling and Residence Time Distribution (RTD) Analysis in Geomorphically Varied Reaches in the Lookout Creek Basin, Oregon, USA. *Advances in Water Resources* 26:925-937.
- Wondzell, S. M. and P.A. Bisson. 2003. Influence of Wood on Aquatic Biodiversity. Pgs. 249–264 *In*: S. V. Gregory, K. L. Boyer, and A. M. Gurnell, editors. The ecology and management of wood in world rivers. American Fisheries Society, Symposium 37, Bethesda, Maryland.
- Bisson, P.A., Wondzell, S.M., Gregory, S.V., and Reeves, G.H. 2003. Trends in Using Wood to Restore Aquatic Habitats and Fish Communities in Western North American Rivers. Pgs. 391–406 *In*: S. V. Gregory, K. L. Boyer, and A. M. Gurnell, editors. The ecology and management of wood in world rivers. American Fisheries Society, Symposium 37, Bethesda, Maryland.
- Wondzell, S.M., and King, J. G. 2003. Post-fire Erosional Processes: Comparing the Pacific Northwest Region to the Interior Northwest and Northern Rocky Mountain Region. *Forest Ecology and Management* 178:75-87.
- Kasahara, T., and Wondzell, S.M. 2003. Geomorphic Controls on Hyporheic Exchange Flows in Mountain Streams. *Water Resources Research* 39(1), 1005, doi=10.1029/2002WR001386

- Haggerty, R., Wondzell, S.M., and Johnson, M.A. 2002. Fractal Scaling of Residence Time Distribution in the Hyporheic Zone of a 2nd-order Mountain Stream. *Geophysical Research Letters* 29(13):18-1 - 18-4 doi=10.1029/2002GL014743.
- Wondzell, S. M. 2001. The Influence of Forest Health and Protection Treatments on Erosion and Stream Sedimentation in Forested Watersheds of Eastern Oregon and Washington. *Northwest Science* 75:128-140.
- Nakamura, F., Swanson, F. J., and S. M. Wondzell. 2000. Disturbance regimes of stream and riparian systems--a disturbance-cascade perspective. *Hydrological Processes* 14:2849-2860
- Johnson, S. L., F. J. Swanson, G. E. Grant, and S. M. Wondzell. 2000. Riparian forest disturbances by a mountain flood -the influence of floated wood. *Hydrological Processes* 14:3031-3050.
- Wondzell, S. M. and F. J. Swanson. 1999. Floods, Channel Change and the Hyporheic Zone. *Water Resources Research* 35:355-368
- Pinay, G., C. Ruffinoni, S. M. Wondzell, and F. Gazelle. 1998. Change in groundwater nitrate concentration in a large river floodplain: Denitrification, uptake, or mixing? *The Journal of the North American Benthological Society* 17:179-189.
- Wondzell, S. M., G. L. Cunningham, and D. Bachelet. 1996. Relationships between Landforms, Geomorphic Processes, and Vegetative Communities on a Watershed in the Northern Chihuahuan Desert. *Landscape Ecology* 11:351-362.
- Wondzell, S. M. and F. J. Swanson. 1996. Seasonal and storm dynamics of the hyporheic zone of a 4th-order mountain stream. I: Hydrologic processes. *The J. of the North American Benthological Society* 15:3-19
- Wondzell, S., and F. J. Swanson. 1996. Seasonal and storm dynamics of the hyporheic zone of a 4th-order mountain stream. II: Nitrogen cycling. *The Journal of the North American Benthological Society* 15:20-34
- Wondzell, S., and J. A. Ludwig. 1995. Community Dynamics of Desert Grasslands: Influences of Climate, Landforms, and Soils. *Journal of Vegetation Science* 6:377-390.
- Wondzell, S. 1994. Flux of ground water and nitrogen through the floodplain of a fourth-order stream. Ph.D. Thesis. Oregon State University, Corvallis OR.
- Swanson, F. J., S. M. Wondzell, and G. E. Grant. 1992. Landforms, Disturbance, and Ecotones. pgs. 304-323 In: F. diCastri and A.J. Hansen (eds.) *Landscape boundaries: Consequences for biotic diversity and ecological flows*. Ecological Studies, Vol. #92. Springer-Verlag.
- Wondzell, S. M., G. L. Cunningham, and J. M. Cornelius. 1990. Fine grained environmental patterns and the vegetation of a Chihuahuan desert playa. *Journal of Vegetation Science* 1:403-410.
- Bachelet, D., S. M. Wondzell, and J. F. Reynolds. 1988. A Simulation Model Using Environmental Cues to Predict Phenologies of Winter and Summer Annuals in the Northern Chihuahuan Desert. Pgs. 235-260. In: Marani, A. (Ed.) *Advances in Environmental Modelling*. Elsevier.
- Wondzell, S. M., G. L. Cunningham, and D. Bachelet. 1987. A Hierarchical Classification of Landforms: Some Implications for Understanding Local and Regional Vegetation Dynamics. pp. 15-23. In: *Strategies for Classification and Management of Native Vegetation for Food Production in Arid Zones*. United States Forest Service, Rocky Mountain Forest and Range Experiment Station, General Technical Report RM-150.

Ludwig, J. A., and S. M. Wondzell. 1986. Vegetation Dynamics Following Establishment of Big Bend National Park U.S.A. pp 13-15. In: P.J. Joss, P.W. Lynch, and O.B. Williams (eds.) Rangelands: A Resource Under Siege - Proceedings of the Second International Rangeland Congress, Canberra, Australia.

Wondzell, S. M. 1984. Recovery of Desert Grasslands in Big Bend National Park Following 36 Years of Protection from Grazing of Domestic Livestock. MS Thesis, New Mexico State University.

MANUSCRIPTS CURRENTLY IN PREPARATION:

Wondzell, S. M., and M. N. Gooseff. (*in preparation*). Additional observations on "The zone of vegetation influence on baseflow revealed by diel patterns of streamflow and vegetation water use in a headwater basin". To be submitted to HP Today (invited commentary in Hydrological Processes).

Johnson, S. L. and S. M. Wondzell. (*in preparation*). Stream temperature and hyporheic exchange flows. To be submitted to the Journal of the North American Benthological Society.

ARCHIVED DATASETS:

Wondzell, S. M. 1997. Stream, hyporheic, and ground water (water table) elevation data from McRae Creek well network . Long-Term Ecological Research. Corvallis, OR: Forest Science Data Bank: HF10. [Database].
<http://www.fsl.orst.edu/lter/data/framepage.cfm?frameURL=studies/hf10/hf10fmt.htm&topnav=135>

Wondzell, S. M. 1997. Stream, hyporheic, and ground water chemistry of McRae Creek. Long-Term Ecological Research. Corvallis, OR: Forest Science Data Bank: CF04. [Database].
<http://www.fsl.orst.edu/lter/data/framepage.cfm?frameURL=studies/cf04/cf04fmt.htm&topnav=135>

Haggerty, R. and Wondzell, S. M. 2003. Stream Tracer Experiments in HJ Andrews Experimental Forests: Long-Term Ecological Research. Corvallis, OR: Forest Science Data Bank: HF011. [Database].
<http://www.fsl.orst.edu/lter/data/abstract.cfm?dbcode=HF011>. (23 April 2003)

Anderson, J. 2003. Stream tracer experiments in the hyporheic zone of Lookout Creek at the Andrews Experimental Forest: Long-Term Ecological Research. Corvallis, OR: Forest Science Data Bank: HF012. [Database]. <http://www.fsl.orst.edu/lter/data/abstract.cfm?dbcode=HF012>. (23 April 2003)

WORKSHOPS, FIELD TRIPS and OTHER:

Wondzell, S. M. *Forest Management Issues and Wildfire - Examples from the Blue Mountains*. Field trip for the Mapped Atmosphere, Plant, and Soil Systems team, Managing Disturbance Regimes Program, Pacific Northwest Research Station. 13-14 September 2003.

Wondzell, S. M., Clifton, C., and Harris, R. Annual INLAS summer field trip: *Fires, Fuels, Prescribed Fire Treatments, and Their Effects on Other Resources*. o the Skookum Experimental Watersheds and the Joint Fires Sciences Erosion Study. 10 July, 2003.

Yeakley, A. and S. Wondzell. Controls on nutrient exchange processes between terrestrial and aquatic ecosystems. Long-Term Ecological Research, All-scientist meeting, Snowbird Utah, August 2000.

GRANTS FUNDED:

- Collaborative Research: Hydrological linkages between landscapes and streams: transferring reach and plot scale understanding to the network and catchment scales. NSF – Hydrologic Sciences Program. PIs: B.L. McGlynn and M.N. Gooseff. Collaborators: J. Seibert, K.E. Bencala and S. M. Wondzell. April 2004 – March 2007. \$377,060.
- Collaborative Research: Controls on hyporheic nitrate retention - discriminating among transport, reaction-rate, and substrate limitation. NSF Hydrologic Sciences Program. Co-PIs: R. D. Haggerty, S. M. Wondzell, and M. N. Gooseff. June 2004 - May 2007. \$450,000.
- Evaluating the effects of prescribed fire and fuels treatments on water quality and aquatic habitat. Joint Fire Sciences Program October 2001-September 2004. Co-PIs: C. Clifton and S.M. Wondzell. \$299,151.
- Interactions between streams and groundwater along the river continuum: Scaling up to a stream network. NSF - Hydrologic Sciences Program. PI: Wondzell. Co-PI: F. J. Swanson. February 2000 - January 2003, \$300,000.
- The hyporheic zone: It's role in forest-stream interactions. USDA Pacific Northwest Experiment Station. PI: Wondzell. May 1999 - May 2000. \$15,078.
- Influence of groundwater inputs and hyporheic exchange flow on low-baseflow discharge. HJA - LTER program. Co-PIs: Wondzell, S. M. and S. L. Johnson. June 1999 - Dec 1999, \$10,674.
- Influence of natural processes and human modifications of river channels on stream-ground water interactions in the hyporheic zone of mountain streams. NSF - Japan Program (Joint project with Japanese Society for Promotion of Science). PI: Wondzell. Co-PI: F. J. Swanson. June 1998 - June 2001, \$23,000. (also with F. Nakamura and H. Shibata)
- Interactions between streams and ground water along the river continuum: Influence of stream size, geomorphology, and catchment wetness. NSF - Hydrologic Sciences Program. PI: Wondzell. Co-PI: F. J. Swanson. November 1995 - November 1998, \$183,500.
- Forty years of vegetation change in the desert grasslands of Big Bend National Park. PI: E. Muldavin. Co-PIs: S. M. Wondzell and J. A. Ludwig. 1995-96, \$5,500. National Park Service.
- Influence of human modifications of river channels on ground-water processes and surface-water quality. NSF-NATO Postdoctoral Fellowship in Science and Engineering. PI: Wondzell. March 1994 - March 1995, \$42,800. (To work at the Centre d'Écologie des Systèmes Fluviaux, Toulouse France).
- The role of riparian forests in regulating nitrogen flux between ground water and surface water in third order stream valleys of Oregon. 1990 - 1992, \$16,410. Doctoral Dissertation Improvement Award, National Science Foundation.

INVITED PRESENTATIONS:

- Haggerty, R., Ninnemann, J., Gooseff, M. N., Wondzell, S.M. 2004. Power-law behavior of transient storage residence time distributions from a multi-scale stream tracer test in Lookout Creek, Oregon. [published abstract: AGU Meeting, San Francisco, CA].
- Gooseff, M. N., Haggerty, R., Wondzell, S. M., Anderson, J. K., LaNier, J., Ninneman, J. 2004. Hyporheic exchange throughout a stream network and implications for water quality: Studies within the Lookout Creek basin, Oregon. Geological Society of America Annual Meeting. [published abstract: GSA Abstracts with Programs 36(5)xxx] November 10, 2004, Denver, CO.

- Wondzell, S. M. 2003. Death, Monsters, Healthy Forests, and You. United States Forest Service, Region 6, Annual Fisheries Biologist and Hydrologist Workshop. Eugene, OR. Also as an invited presentation in 2004 at the session *Fire and Aquatic Ecosystems*. Oregon Chapter, American Fisheries Society Annual Meeting, Sunriver, OR.
- Wondzell, S.M., Haggerty, R., Gooseff, M. N. 2003. Hyporheic Exchange Flows and their Residence-Time Distributions in Mountain Streams. Invited Poster for the session: *Exploring the linkages between the geochemistry, biology, and hydrology of the hyporheic zone*. Geological Society of America Annual Meeting, 2-5 November 2003. Seattle WA. [published abstract: GSA Today 13(7):377, Abstract 153-7].
- Wondzell, S.M. and R. Haggerty. 2002. Evaluating the Importance of the Hyporheic Zone Throughout a 5th-Order Mountain Stream Network. Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract H51D-03. (*American Geophysical Union, Fall Meeting, 6-10 December, 2002, San Francisco, CA.*)
- Wondzell, S.M. and J. King. 2002. Post-fire Erosional Processes: Comparing Coastal and Cascadian Pacific Northwest to the Interior Northwest and Rocky Mountains. Workshop on "*Fire and Aquatic Ecosystems: Emerging Theory, Experience, and Issues Related to Fire and Fire Management and Aquatic Ecosystems*". 22-24 April 2002, Boise ID.
- Wondzell, S.M. and S.L. Johnson. 2002. The hyporheic zone and stream temperature. Symposium and Workshop on Small Stream Channels and Riparian Zones: Their Form, Function and Ecological Importance in a Watershed Context Univ. of British Columbia, Vancouver, BC. 19-20 February, 2002.
- Wondzell, S.M. 2000. Applied Hydrology Seminar: Delineation of Surface Water / Groundwater Interactions (Hyporheic Zones) in Western Alluvial Rivers. Invited Speaker and Panel Member. Northwest Regional Floodplain Managers Association. Seattle WA., 14 December 2000.
- Wondzell, S.M. and P.A. Bisson. 2000. Influence of Wood on Aquatic and Riparian Biodiversity. International Conference on Wood in World Rivers, Corvallis OR, 23-27 October 2000.
- Wondzell, S.M. 2000. Stream-Groundwater Interactions: Linking Terrestrial and Aquatic Components of Riparian Ecosystems. Colorado State University, Guest Scholar Program, Ft. Collins, CO, 20 March 2000
- Wondzell, S.M. 1998. Re-engineering our Engineered Landscape: Potential Problems When Using Riparian Buffers as Tools to Mitigate Nonpoint-Source Pollution. James A. Vomocil Water Quality Conference. Oregon State University, 29 October 1998.
- Wondzell, S.M. 1995. The Hyporheic Zone: A case study of ground-water hydrology and nitrogen cycling in a mountain stream. Woods Hole Biological Station, Falmouth, MA. 1995.
- Wondzell, S.M. 1993. Influence of riparian ground water systems on nitrogen budgets of mountain streams. American Institute of Hydrology, Oregon Section Annual Meeting, Corvallis OR. 18-19 October 1993.
- Wondzell, S.M., G.L. Cunningham, and D. Bachelet. 1988. Geomorphic processes and spatial vegetation patterns in the northern Chihuahuan desert. *In the symposium: Geomorphic processes underlying landscape heterogeneity and vegetation patterns in North American deserts*. Ecological Society of America, 73rd Annual Meeting, Davis CA. 14-19 August 1988.

PRESENTATIONS:

- Haggerty, R., Harvey, C., Zinn, B., Meigs, L. C., Ninnemann, J., Gooseff, M.N., Wondzell, S. M., Freiherr von Schwerin, C. 2004. Experimental evidence of heavy-tailed memory effects in solute movement through geologic materials: Anomalous transport caused by diffusive and advective exchange. Society for Industrial and Applied Mathematics (SIAM) Annual Meeting, July 12-16, Portland, OR.
- Harris, R.M., C. Clifton, and S.M. Wondzell. 2002. Evaluating the effects of prescribed fire and fuels treatment on water quality and aquatic habitat. Advancing the Fundamental Sciences Conference-A Conference for Physical Scientists to be held October 18-22, 2004, in San Diego, CA.
- Haggerty, R., LaNier, J., Ninneman, J., Gooseff, M. N., and Wondzell, S. M. 2004. Late-time tracer test method for measuring transient storage residence time distributions in streams. [published abstract: GSA Abstracts with Programs 36(5)xxx] November 9, 2004, Denver, CO.
- Ninnemann, J., Haggerty, R., Gooseff, M. N., and Wondzell, S. 2004. Multi-scale stream tracer test in Lookout Creek, Oregon: Fractal behavior of hyporheic residence time distributions. [published abstract: GSA Abstracts with Programs 36(5)xxx] November 9, 2004, Denver, CO.
- Wondzell, S. M. and Johnson, S. L. 2004. Influence of hyporheic exchange flow on temperature of a small mountain stream. [published abstract: Bulletin of the North American Benthological Society 21(1):307].
- Wondzell, S. M., Clifton, C., and Harris, R. M. 2004. Preliminary results: Evaluating the effects of prescribed fire on hillslope erosion and sediment delivery to streams. Joint Fire Sciences Project, Principal Investigator Workshop, Phoenix, AZ.
- Ninnemann, J., Haggerty, R., Gooseff, M. N., & Wondzell, S. M. 2003. Time-scales of hyporheic exchange along the river continuum. Long-Term Ecological Research (LTER) All-Scientist Meeting, 18-21 September 2003, Seattle, WA.
- Wondzell, S. M., LaNier, J., Haggerty, R., & Gooseff, M. N. 2003. Reliability of Groundwater Flow Models of the Hyporheic Zone of Small Mountain Streams. [Published Abstract: Eos Trans. AGU, Fall Meet. Suppl., Abstract H41D-1027]. (*American Geophysical Union, Fall Meeting, 8-12 December, 2003, San Francisco, CA.*)
- Wondzell, S. M. 2003. Death, Monsters, Healthy Forests, and You. United States Forest Service, Region 6, Annual Fisheries Biologist and Hydrologist Workshop. 1 May, 2003, Eugene OR.
- Harris, R.M., C. Clifton, and S.M. Wondzell. 2002. Evaluating the effects of prescribed fire on water quality and aquatic habitat. Poster presentation at the *Walla Walla Watershed Science and Restoration Conference*. Organized by Walla Walla Basin Technical Workgroup, the Walla Walla Basin Watershed Council and the Walla Walla County Conservation District. 12 February, 2003. Walla Walla, WA.
- Harris, R.M., C. Clifton, and S.M. Wondzell. 2002. Evaluating the effects of prescribed fire on water quality and aquatic habitat. Poster presentation at the *Watersheds Across Boundaries: Science, Sustainability, Security* conference. Bi-annual meeting of the Watershed Management Council. 4 - 6 November, 2002, Stevenson WA.
- Gooseff, M.N., R. Haggerty, J. LaNier, J.K. Anderson, S.M. Wondzell. 2002. Investigating stream longitudinal geomorphic variability and hyporheic exchange residence time distribution using a groundwater flow model. [Published Abstract: Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract H52D-0901]. (*American Geophysical Union, Fall Meeting, 6-10 December, 2002, San Francisco, CA.*)

- Wondzell, S.M.; and Kasahara, T. 2002. Influence of channel morphology on the hyporheic zone in mountain streams. [Published Abstract: Bulletin of the North American Benthological Society 19(1):186].
- Anderson, J.K.; and Wondzell, S.M. 2002. Stream geomorphology, bed topography, and implications for patterns in hyporheic exchange flow. [Published Abstract: Bulletin of the North American Benthological Society 19(1):310].
- Anderson, J.K.; Wondzell, S.M.; and Gooseff, M.N. 2002. Stream geomorphology, water surface slope, and implications for patterns in hyporheic exchange. Geological Society of America, Cordilleran Section, Annual Meeting, Corvallis OR. 13-15 May 2002.
- Gooseff, M.N.; Haggerty, R.; and Wondzell, S.M. 2002. Characterizing the cascade effect of upstream hyporheic exchange in mountain Geological Society of America, Cordilleran Section, Annual Meeting, Corvallis OR. 13-15 May 2002.
- Haggerty, R.; Johnson, M.A.; and Wondzell, S.M. 2001. Fractal Residence Time Distribution in the Hyporheic Zone of a 2nd-Order Mountain Stream: Implications for Scaling and Stream Biogeochemistry American Geophysical Union, Fall Meeting, San Francisco, CA. December 2001.
- Haggerty, R.; Johnson, M.A.; and Wondzell, S.M. 2001. Fractal Residence Time Distribution in the Hyporheic Zone of a 2nd-Order Mountain Stream. Implications for Scaling and Measurement of Hillslope Processes. Chapman Conference on State-of-the-Art Hillslope Hydrology, Sunriver Oregon, 8-12 October 2001. ~50 attendees.
- Wald, A. and Wondzell, S. M. 2001. The hyporheic zone: Its importance to ESA listed fish species in Pacific Northwestern Rivers. Presented to U.S. Fish and Wildlife Service, Lacey Office. 16 August 2001. ~50 attendees.
- Kasahara, T. and S. M. Wondzell. 2001. Effects of geomorphic features on hyporheic exchange flow in mountain streams. Canadian Geophysical Union, Annual Meeting, Ottawa, ON. ~50 attendees.
- Wondzell, S.M. 2001. Opportunities for collaboration between the US and Japan: An overview of hyporheic studies at the H. J. Andrews Experimental Forest. Presented to staff, researchers and graduate students, Uryu Experimental Forest, Moshiri, Hokkaido, Japan. 22 May 2001. ~20 attendees.
- Wondzell, S.M. 2000. How channel morphologic features control groundwater interactions, how those features are changed by floods, and what does it mean for stream ecosystems. United States Forest Service, Region 6 Fish/Hydro Fall Workshop. 7 December 2000, HoodRiver OR.
- Wondzell, S.M. 2000. The Hyporheic Zone: Linking Terrestrial and Aquatic Components of Riparian Ecosystems. The Center for Stream-Side Studies, Seattle WA, 14 November 2000.
- Yeakley, A. and S. Wondzell. 2000. Controls on nutrient exchange processes between terrestrial and aquatic ecosystems. Long-Term Ecological Research, All-scientist meeting, Snowbird Utah, August 2000.
- Wondzell, S. M. 1999. Stream Tracer Experiments, Channel Morphology and Model Uncertainty. American Geophysical Union, Fall Meeting, San Francisco, CA. December 1999.
- Kasahara, T. and S. M. Wondzell. 1999. Geomorphic Controls on Hyporheic Exchange Flow Shift with Stream Order and Channel Constraint. American Geophysical Union, Fall Meeting, San Francisco, CA. December 1999.

- Wondzell, S.M. 1998. Geomorphology controls hyporheic exchange flows in small mountain streams. North American Benthological Society, Annual Meeting 2-5 June 1998.
- Kasahara, T., S. M. Wondzell and F. J. Swanson. 1998. Predicting Subsurface Flow in Mountain Streams. Society for Ecological Restoration, Northwest Chapter, Annual Meeting. 28-30 October 1998.
- Wondzell, S. M. 1997. Debris jams and flooding control long-term dynamics of the hyporheic zone. Ecological Society of America, Annual Meeting 10-14 August 1997.
- Muldavin, E. H., S. M. Wondzell and J. A. Ludwig. 1997. Forty years of vegetation change in the desert grasslands of Big Bend National Park. Ecological Society of America, Annual Meeting 10-14 August 1997.
- Wondzell, S. M., G. Pinay, and Ph. Vervier. 1996. Can denitrification in the hyporheic zone mitigate nitrate pollution? North American Benthological Society, Annual Meeting. 3-7 June 1996.
- Wondzell, S.M. 1995. Seasonal and storm dynamics of subsurface water flows through the hyporheic zone of a fourth-order stream: Hydrologic processes and nitrogen cycling. Department of Natural Resources, University of New Hampshire.
- Wondzell, S. M. 1994. Nitrogen cycling through the hyporheos - two case studies: McRae Creek, Oregon (USA) and l'Hers Mort, Toulouse (France). Departament D'Ecologia, Universitat de Barcelona.
- Wondzell, S. M., and F. J. Swanson. 1993. Influence of riparian groundwater systems on nitrogen budgets of mountain streams. Long-Term Ecological Research, All Scientist Meeting, Estes Park, CO. September 19-22, 1993 and Gordon Research Conference, Holderness School, Plymouth NH. 2-6 August 1993.
- Wondzell, S. M., and F. J. Swanson. 1992. Influence of riparian groundwater systems on nitrogen budgets of mountain streams. 7th Annual Landscape Ecology Symposium, Corvallis, OR. 8-11 April 1992.
- Wondzell, S. M., and J. A. Ludwig. 1989. Recovery of Desertified Grasslands. Ecological Society of America, 74th Annual Meeting, Toronto, Ontario, Canada. 6-10 August 1989.
- Wondzell, S. M., F. J. Swanson, and G. E. Grant. 1989. The relation of geomorphic processes to the location, orientation, and stability of ecotones. 4th Landscape Ecology Symposium, Ft. Collins, CO. March 1989.
- Wondzell, S.M., and D. Bachelet. 1988. Factors affecting the dynamics of shrub and grassland communities in the northern Chihuahuan desert. 3rd Landscape Ecology Symposium, Albuquerque NM. 16-19 March 1988.
- Bachelet, D., and S. M. Wondzell. 1988. Factors affecting the dynamics of shrub and grassland communities in the northern Chihuahuan desert. Ecological Society of America, 73rd Annual Meeting, Davis CA. 14-19 August 1989.
- Wondzell, S. M., and G. L. Cunningham. 1987. A Hierarchical Classification of Landforms: Some Implications for Understanding Local and Regional Vegetation Dynamics. U.S.A./Mexico Symposium on Strategies for Classification and Management of Natural Vegetation for Food Production in Arid Zones, Tucson, Arizona. 12-16 October 1987.
- Wondzell, S. M., and G. L. Cunningham. 1987. Relationships Between Landscape Elements, Geomorphic Processes, and Vegetative Communities on a Watershed in the Northern Chihuahuan Desert. Ecological Society of America, 72nd Annual Meeting, Columbus, Ohio. 9-15 August 1987.

- Bachelet, D., S. M. Wondzell, and J. F. Reynolds. 1987. Simulation Model Predicting Germination and Flowering of C₃ and C₄ Chihuahuan Desert Annuals. Ecological Society of America, 72nd Annual Meeting, Columbus, Ohio. 9-15 August 1987.
- Bachelet, D., S. M. Wondzell, and J. F. Reynolds. 1987. Predicting Germination, Flowering, and Drought Death of Winter and Summer Annuals in the Northern Chihuahuan Desert. 6th International Society for Ecological Modeling Meetings, Venice, Italy. 22-26 June 1987.
- Wondzell, S. M., G. L. Cunningham, and J. M. Cornelius. 1986. Temporal and Spatial Patterns in the Distribution of Plant Species on a Chihuahuan Desert Playa. Ecological Society of America, 71st Annual Meeting, Syracuse, New York. 10-16 August 1986.
- Wondzell, S. M., J. A. Ludwig, G. L. Cunningham, J. M. Cornelius, and W. J. Schaefer. 1985. Vegetative dynamics on an ephemeral Chihuahuan desert lake. Southwestern Association of Naturalists Annual Meetings, Tucson, Arizona. April 1985.
- Ludwig, J. A., G. L. Cunningham, J. M. Cornelius, W. J. Schaefer and S. M. Wondzell. 1985. Response of Chihuahuan Desert Plants to Water and Nitrogen Amendments. Southwestern Association of Naturalists Annual Meetings, Tucson, Arizona. April 1985.
- Wondzell, S. M. 1984. Pictures At An Exhibition: A Photographic Survey of Vegetation Dynamics in the Desert Grasslands of Big Bend National Park. New Mexico State University, Department of Biology, Colloquium.
- Wondzell, S. M. 1983. Secondary Successional Patterns of *Larrea tridentata* and *Parthenium incanum*. Second Symposium on Resources of the Chihuahuan Desert Region, Alpine, Texas. 20-21 October 1983.
- Wondzell, S. M. 1982. Chihuahuan Desert Plant Succession. Southwestern and Rocky Mountain Division, American Association for the Advancement of Science Annual Meetings, El Paso, Texas.

STUDENTS SUPERVISED:

Major Professor:

Justin Anderson. MS student in Department of Forest Science. Thesis: *Patterns in stream geomorphology and implications for hyporheic exchange flow.*

Tamao Kasahara. MS student in Department of Forest Science. Thesis: *Geomorphic controls on hyporheic exchange flow in two different sized mountain streams.*

Graduate Committee Member:

Alison H. Magill. MS student in Department of Natural Resources, University of New Hampshire. Thesis: *Dissolved organic carbon and nitrogen processes in decomposing leaf litter as affected by increased nitrogen deposition.*

Catherine A. Reidy. 2004. MS student in the College of Forest Resources, University of Washington. Thesis: *Variability of hyporheic zones in Puget Sound lowland streams*".

Willem VanVerseveld. (in progress). Ph.D. student, Department of Forest Engineering, Oregon State University. Thesis research will focus on quantifying fluxes of water and solutes from hillslopes, through riparian zones, to streams, and the influence of these flow paths on whole catchment response of stream discharge and water quality.

Undergraduate Research Projects Supervised:

Grant S. Kennedy. Student trainee from Stirling University, Stirling UK. I helped Mr. Kennedy design and supervised his work at the H. J. Andrews Experimental Forest during the summer of 1997 that led to his senior honors thesis, titled "Channel Migration and Floodplain Patch Dynamics of a Montane Stream, Oregon, USA".

Troy Tarbox. I supervised an undergraduate research project titled "Determination of Hydraulic Conductivity" that Mr. Tarbox completed during the winter of 1993.

Angie M. Froom - I supervised an REU student during the summer and fall of 1993 who completed a project titled "The volume of exchange flow between the stream and hyporheic zone in an Oregon Cascade's stream".

COURSES TAUGHT:

FE535: Water Quality and Forest Land Use. Fall 1999. Graduate Level Lecture and Laboratory. Department of Forest Engineering, Oregon State University.

FS605a: Nutrient Transformations at the Surface Water – Ground Water Interface. Spring 1999. Graduate Level Reading and Conference. Department of Forest Science, Oregon State University.

FS605b: Stream Tracer Experiments and Their Analyses. Fall 1997. Graduate Level Reading and Conference. Department of Forest Science, Oregon State University.

WaRM721: The Ecology of Polluted Waters. Spring 1996. Senior Level Lecture and Laboratory. Taught for 1 year while I was a Temporary Assistant Professor of Water Resources Management, University of New Hampshire.

WaRM603: Water Quality Dynamics from a Watershed Perspective. Fall 1995. Junior/Senior Level Lecture and Laboratory. Taught for 1 year while I was a Temporary Assistant Professor of Water Resources Management, University of New Hampshire.

WaRM700: Current Issues in Water Resources Management. Fall 1995. Senior Level Seminar. Taught for 1 year while I was a Temporary Assistant Professor of Water Resources Management, University of New Hampshire.

GUEST LECTURES and OTHER PRESENTATIONS:

How do we know what a stream should look like. Invited lecture in the Watershed Restoration Short Course, Washington State University, 22-26 September 2003, Wenatchee, WA.

Death, Monsters, Healthy Forests, and You. Presentation to the Olympia Senior Center, 30 April, 2003. Olympia WA.

Land management issues in the Interior Columbia Basin. Invited lecture, Field Ecology Course, The Evergreen State College. Olympia WA. May 9, 2002.

Integrating Research into Ecosystem Management: Examples from the Columbia River Basin. Invited Lecture: Ecosystem Management Class, The Evergreen State College. Olympia WA. Spring 2001.

The Role of the Hyporheic Zone in Mountain Streams. Guest lecture to FW580 - Stream Ecology. 5 February 1998.

Floods, mass movements, debris jams and the hyporheic zone. Guest lecture to GEO482/582 - Forest Geomorphology and Landscapes. 20 February 1997.

Temperature and nitrogen in west-slope, Cascade streams: A case study of Lookout Creek. Guest lecturers for GEO539 - Advanced Field Methods in Landscape Ecology and Geomorphology. 25 September 1996. (co-taught with S. L. Johnson).

The hyporheic zone and its role in stream nitrogen budgets. Presentation to the Chapman Conference Field Trip: Nitrogen cycling in forested catchments. 18 September 1996.

Riparian buffers: Myth or Reality. Guest lecture: Introduction to Natural Resources Management, Dept. of Natural Resources, University of New Hampshire 1995 and Environmental Chemistry Seminar, Dept. of Chemistry, University of New Hampshire, 1996; Invited Seminar: Weekly Seminar Series, Dept. of Fisheries and Wildlife, Oregon State University, 1996.

Forest Resources Management in the Pacific Northwest - Current Issues. Water Resources Management Club, University of New Hampshire.

Geomorphology, soils and desertification: A case study of the Jornada LTER Watershed. Guest lecture: Soil Genesis, Dept. of Natural Resources, University of New Hampshire.

AWARDS AND SCHOLARSHIPS:

Science Findings Award, 2004, for a submission titled "*What moderates stream temperature*". Award presented by Thomas M. Quigley, Station Director, Pacific Northwest Research Station, Portland, OR.

Certificate of Merit, 2003, "*for leadership in developing the aquatic component of The Inland Northwest Landscape Analysis System (INLAS) project*", Jamie Barbour, Focused Science and Delivery Program, Program Manager, Pacific Northwest Research Station, Portland, OR

Science Findings Award, 2003, for a submission titled "*Rivers Underground*". Award presented by Thomas M. Quigley, Station Director, Pacific Northwest Research Station, Portland, OR.

In Recognition Of, 2001, "*in recognition of dedication and leadership in the completion of the Interior Columbia Basin Ecosystem Management Project, Science Advisory Group, Evaluation of the Final EIS Alternatives, Science Consistency Reviews and other priority science work in FY01*". Award presented by Thomas J. Mills, Station Director, Pacific Northwest Research Station, Portland, OR, and Marcia Patton-Mallory, Station Director, Rocky Mountain Research Station, Ft. Collins, CO.

Certificate of Merit, 2000, "*for your extra effort in completing the salmon proposals for the ISST*". Award presented by Peter A. Bisson, Team Leader, Olympia ALI, Pacific Northwest Research Station, Olympia, WA.

Outstanding Student Paper, 1982, titled "*Chihuahuan Desert Plant Succession*". Southwestern and Rocky Mountain Division, American Association for the Advancement of Science Annual Meetings, El Paso, TX.

Ph. D. Student:

Moltke Fellowship, 1992-1993 school year.
Dorothy D. Hoener Fellowship, 1991-1992 school year.
Dorothy D. Hoener Fellowship, 1990-1991 school year.
Dorothy D. Hoener Fellowship, 1989-1990 school year.
Moltke Fellowship, 1988-1989 school year.

Masters Student:

Outstanding Student Paper, SWARM-AAAS, 1982.

Undergraduate:

Crimson Scholar, 1980.
Society of Range Management Scholarship, 1980.
Rust Tractor Scholarship, 1978, 1979.
Kirtland Officers Wives Association Scholarship, 1977, 1978, 1980.
New Mexico National Guard Scholarship, 1977.
Physical Science Laboratory Scholarship, 1977.
Dean 's List, 1977 - 1981.

PROFESSIONAL SOCIETIES:

North American Benthological Society
American Geophysical Union
Ecological Society of America
International Association for Vegetation Science