

**Dr. Ginger B. Paige**  
Assistant Professor  
Department of Renewable Resources  
University of Wyoming

## **EDUCATION**

2000 Ph.D. Watershed Management, University of Arizona, Tucson, AZ

*Dissertation:* Measurement and modeling of the spatial variability of infiltration on rangelands.

1992 M.S. Soil Physics, University of Massachusetts, Amherst, MA

*Thesis:* Comparison of three methods for assessing soil hydraulic properties

1984 B.A. Political Science, The Colorado College, Colorado Springs, CO

## **PROFESSIONAL EXPERIENCE**

*2004 - present:* Assistant Professor Water Resources, Department of Renewable Resources, University of Wyoming, Laramie, WY.

Developing the Wyoming water resources extension program and conducting research on measurement and modeling of hydrologic and erosion processes on rangeland watersheds to address water resource and rangeland management issues.

*2002- 2004:* Assistant Research Scientist, Department of Watershed Management, University of Arizona and USDA-ARS Southwest Watershed Research Center, Tucson, Arizona.

Conducted research to measure and model hydrologic and erosion processes on rangeland watersheds at a variety of scales. Co-PI on Joint Fire Science Program funded project: Quantification of runoff and erosion processes on semi-arid rangelands following wildfires.

*2000- 2002:* Research Associate, Department of Hydrology and Water Resources, University of Arizona and USDA-ARS Southwest Watershed Research Center, Tucson, Arizona.

Conducted collaborative research as part of SAHRA (Semiarid Hydrology and Riparian Areas) NSF Science and Technology Center, to measure and model effects of the spatial variability of infiltration capacity on runoff and erosion on semi-arid rangelands at a variety of scales.

*1996-2000:* Senior Research Specialist, Department of Watershed Management, University of Arizona and USDA-ARS Southwest Watershed Research Center, Tucson, Arizona.

Conducted research on measurement and modeling of hydrologic processes on rangeland watersheds at a variety of scales. Designed, built and tested computer controlled variable intensity rainfall simulator to measure hydrologic and erosion processes on rangeland watersheds.

*1992-1996:* Soil Scientist, GS-09, USDA-ARS Southwest Watershed Research Center, Tucson, Arizona.

Developed a prototype Decision Support System to evaluate trench cap designs for low-level radioactive waste.

*1988-1992:* Research Assistant, Department of Plant and Soils, University of Massachusetts, Amherst, Massachusetts.

Managed Soil Physics Laboratory and conducted laboratory procedures. Designed and implemented study to characterize soil hydraulic properties.

*1992 (Jan. - May):* Teaching Assistant, Soil Physics, Department of Plant and Soils, University of Massachusetts, Amherst, Massachusetts.

Designed and taught curriculum for laboratory section of graduate level course in soil physics.

*1987 (June -Oct.):* Peace Corps Training Co-coordinator, Ouezzendougou, Mali, West Africa

Co-coordinator for Appropriate Technology, Mali In-County Training. Developed curriculum for new program, wrote and implemented lesson plans, and evaluated trainees.

*1986-1987:* Peace Corps Agriculture Extension Agent, Dire, Mali, West Africa.

Designed and coordinated an irrigation project and introduced appropriate arid lands agriculture, soil and water management techniques.

*1984-1986:* Peace Corps Community Development Agent, Bougouni, Mali, West Africa.

Wrote project proposals and managed projects for the integration of appropriate technologies into schools and communities. Conducted training of trainer workshops and wrote proposal and managed project for the construction of reinforced wells for communities funded by U.S. AID.

## **RESEARCH EXPERTISE**

Watershed and rangeland hydrology  
Landuse management decision tools  
Effects of fire on rangeland hydrologic and erosion processes  
Characterization of soil hydraulic properties  
Soil moisture measurement  
Ecological site characterization and monitoring

**Professional Societies:** American Water Resources Association, American Geophysical Union, Society for Range Management

## **HONORS AND AWARDS**

Certificate of Appreciation, USDA-ARS SWRC, 2003  
 Outstanding Graduate Student, Dept. of Watershed Management, Univ. of Arizona, 2000  
 School of Renewable Natural Resources, University of Arizona, Superior Performance  
 Award 1996, 1997, 1998, 1999, 2000  
 USDA-ARS, Outstanding Performance Award, 1996  
 USDA-ARS, Superior Performance Award, 1994 and 1995  
 Lotta Crabtree Fellowship for Agricultural Research 1991-1992

## **PUBLICATIONS (\*Collaboration with graduate student)**

### **Refereed Journals:**

Kelleners T.J., E. Ferre-Pikal, M.G. Schaap, and G.B. Paige. 2009. Calibration of hydra impedance probes using electric circuit theory. *Soil Science Society of America Journal* (*accepted*).

Moran, M.S., R.L. Scott, T.O. Keefer, W.E. Emmerich, M. Hernandez, G.S. Nearing, G.B. Paige, M.H. Cosh and P.E. O'Neill. 2009. Partitioning evapotranspiration in semiarid grassland and shrubland ecosystems using time series of soil surface temperature. *Agriculture and Forest Meteorology* 149:59-72.

Stone, J.J., G.B. Paige, and R.H. Hawkins. 2008. Rainfall intensity dependent infiltration rates on rangeland rainfall simulator plots. *Transactions of the ASABE* 51(1):45-53.

Paige, G.B. and T.O. Keefer. 2008. Field application performance of multiple soil moisture sensors. *Journal of American Water Resources Association* 44(1):122-135.

Keefer, T.O., M.S. Moran and G.B. Paige. 2008. Long-term meteorological and soil-dynamics database WGEW, Arizona, USA. *Water Resources Research* 44, W05S07, doi:10.1029/2006WR005702. 8 p.

Clay, D., C. Ren, C. Reese, R. Waskom, J. Bauder, N. Mesner, B. Seelig, G.B. Paige, K.J. Reddy, M. Neibauer, and R. Mahler. 2007. Linking public attitudes with perceptions of factors impacting water quality and attending learning activities. *Journal of Natural Resources and Life Sciences Education* (36):36-44.

Paige, G.B., J.J. Stone, J.R. Smith, and J.R. Kennedy. 2003. The Walnut Gulch Rainfall Simulator: A computer controlled variable intensity rainfall simulator. *Applied Engineering in Agriculture* 20(1):25-31.

Paige, G.B., J.J. Stone, D.P. Guertin, and L.J. Lane. 2002. A strip model approach to parameterize a coupled Green-Ampt kinematic wave model. *Journal of American Water Resources Association* 38(5):1363-1378.

Paige, G.B., J.J. Stone, and L.J. Lane. 1996. Calibration and testing of simulation models for evaluation of trench cap designs. *Journal of Environmental Quality* 26(1):136-144.

Paige, G.B., J.J. Stone, D.S. Yakowitz, and L.J. Lane. 1996. Evaluation of a prototype decision support system for selecting trench cap designs. *Journal of Environmental Quality* 26(1):127-135.

Paige, G.B. and D. Hillel. 1993. Comparison of three methods for assessing soil hydraulic properties. *Soil Science* 155:175-189.

### **Dissertation:**

Paige, G.B. 2000. Measurement and modeling of the spatial variability of infiltration on rangeland watersheds. Ph.D. Dissertation. University of Arizona. pp. 283.

### **In Review:**

\*Patterson, M.M., K.J. Reddy, G.B. Paige, and M. Bedessem. Removal of selenium oxyanions from a sulfate-containing synthetic waste stream using a rotating biological contractor and indigenous microorganisms. *Journal of Environmental Quality*.(reviewed, revised, resubmitted).

\*Patterson, M.M., G.B. Paige, and K.J. Reddy. Selenium in surface and irrigation water in the Kendrick Irrigation District, Wyoming. *Journal of American Water Resources Association (in review)*.

Kelleners, T.J., G.B. Paige and S.T. Gray. Measurement of the dielectric properties of Wyoming soils using electromagnetic sensors. *Soil Science Society of America (in review)*.

Paige, G.B., J.J. Stone, and D.P. Guertin. Three approaches to configure and parameterize a distributed hydrologic model. *Journal of American Water Resources Association (in revision)*.

### **Refereed Proceedings:**

Paige, G.B. S.N. Miller, T.J. Kelleners and S.T. Gray. 2008. Hydrologic instrumentation and data collection in Wyoming. Proceedings of the Third Interagency Conference on Research in the Watersheds (ICRW), September 8-11, 2008, Estes Park, CO

Moran, M.S., T.O. Keefer, G.B. Paige, R.L. Scott, W.E. Emmerich, M.H. Cosh, P.E. O'Neill. 2006. Partitioning evapotranspiration using diurnal surface temperature variation. Second Interagency Conference on Research in the Watersheds. (ICRW) May 17-19, 2006, USDA SRS Coweeta Hydrologic Laboratory, Otto, North Carolina.

Paige, G.B., J.J. Stone, and D.P. Guertin. 2005 Evaluation of post-wildfire runoff and erosion on semiarid ecological sites. Biodiversity and Management of the Madrean Archipelago II: Connecting Mountain Islands and Desert Seas, May 11-14, 2004, Tucson, AZ.

Paige, G.B. and J.J. Stone. 2003. Infiltration and runoff: Point and plot scale. Renard, K.G., McElroy, S.A., Gburek, W.J., Canfield, H. E. and Scott, R. L., eds. First Interagency Conference

on Research in the Watersheds, October 27-30, 2003. U.S. Department of Agriculture, Agricultural Research Service. pp. 186-191.

Stone, J.J. and G.B. Paige. 2003. Variable rainfall intensity rainfall simulator experiments on semi-arid rangelands. Renard, K.G., McElroy, S.A., Gburek, W.J., Canfield, H.E. and Scott, R.L., eds. First Interagency Conference on Research in the Watersheds, October 27-30, 2003. U.S. Department of Agriculture, Agricultural Research Service. pp. 83-88.

Bryant, R., D. Thoma, M.S. Moran, C.D. Holifield, D.C. Goodrich, T.O. Keefer, G.B. Paige, D. William, and S.M. Skirvin. 2003. Evaluation of hyperspectral, infrared temperature and radar measurements for monitoring surface soil moisture. Renard, K.G., McElroy, S.A., Gburek, W.J., Canfield, H.E. and Scott, R.L., eds. First Interagency Conference on Research in the Watersheds, October 27-30, 2003. USDA, Agricultural Research Service. pp. 528-533.

Kennedy, J.R., T.O. Keefer, G.B. Paige, and F. Barnes. 2003. Evaluation of dielectric constant-based soil moisture sensors in a semi-arid rangeland. Renard, K.G., McElroy, S.A., Gburek, W.J., Canfield, H.E. and Scott, R.L., eds. First Interagency Conference on Research in the Watersheds, October 27-30, 2003. USDA, Agricultural Research Service. pp. 503-508.

Paige, G.B., J.J. Stone, L.J. Lane, and D.S. Yakowitz. 1998. Overview of a Decision Support System for the Evaluation of Landfill Cover Designs. El-Swaify, S. and Yakowitz, D.S. eds. Multiple Objective Decision Making in Land, Water, and Environmental Management. Proc. of 1st International Conference on Multiple Objective Decision Support Systems for Land, Water and Environmental Management: Concepts, Approaches, and Applications. Honolulu, HI. July, 1995. St. Lucie Press, FL. pp. 153-165.

### **Proceedings:**

\*Williams, M.I., T L. Thurow, G.B. Paige, A.L. Hild and K. Gerow. 2009. Sagebrush-Obligate Passerine Response to Ecological Site Characteristics. Proceedings of the 15<sup>th</sup> Wildland Shrub Symposium, Boseman, MT. June, 17-29, 2008.

\*Church, M.M., M.I. Williams, A.L. Hild, and G.B. Paige. 2009. Comparing Vegetation Monitoring Methods in Shrublands: How Valuable is Grant's Methods in Shrub Communities? Proceedings of the 15<sup>th</sup> Wildland Shrub Symposium, Boseman, MT. June, 17-29, 2008.

\*Baldyga, T.J., S.N. Miller, W.A. Shivoga, F. Lelo, M.W. Jenkins, G.B. Paige, and S. Mooney. 2007. Development of a participatory spatial decision support system for East African rural planning. AfricaGIS 2007, Ouagadougou, Burkina Faso, September 17-21, 2007.

\*Baldyga, T.J., S.N. Miller, W.A. Shivoga, F. Lelo, M.W. Jenkins, G.B. Paige, and S. Mooney. 2007. Rural Planning in East Africa Using a Participatory Spatial Decision Support System. Proceedings of the Environmental Systems Research Institute Eastern Africa User Conference, 13 - 14 September 2007, Kampala - Uganda.

Stone J.J., J. Wickre, G.B. Paige, D.P. Guertin, and G. Gottfried. 2007. Post wildfire runoff and erosion response on grassland and oak woodlands in southeastern Arizona. Biodiversity and Management of the Madrean Archipelago III: Tucson, AZ May 4, 2006.

Paige, G.B., J.J. Stone, D. P. Guertin, R. McGee, and H. Blumenfeld. 2003. Runoff and erosion on a semi-arid grassland after a wildfire. Second International Wildfire Ecology and Fire Management Congress and Fifth Symposium on Fire and Forest Meteorology, November 16-20, 2003. Orlando, Florida. American Meteorological Society.

Paige, G.B., J.J. Stone, L.J. Lane, and D.P. Guertin. 2000. Infiltration and runoff response on a complex soil plot. Proceedings American Society of Civil Engineers Watershed Management 2000, Fort Collins, CO. June 21- 24, 2000.

Stone, J.J., G.B. Paige, and I. Sanchez Cohen. 1999. Planeacion de investigacion con simuladores de lluvia. Sanchez Cohen, I., J.J. Stone, and R. Jasso Ibarra eds. Uso de lluvia artificial para parametrizar modelos de procesos hidrológicos. SAGAR- INIFAP- CENID RASPA, Mexico, pp 7-14.

Paige, G.B. and J.J. Stone. 1996. Spatial and temporal variability of infiltration on rangelands. Proceedings USDA-ARS Workshop on Real World Infiltration. Pingree Park, CO. July 23-26, 1996, Colorado Water Resources Research Institute, Information Series No. 86, pp. 109-122.

Stone, J.J. and G.B. Paige. 1996. Rangeland rainfall simulator experiments. Proceedings USDA-ARS Workshop on Real World Infiltration. Pingree Park, CO. July 23-26, 1996, Colorado Water Resources Research Institute, Information Series No. 86, pp. 6-24.

Goodrich, D.C., R.E. Smith, D.D. Bosch, J.J. Stone, G.B. Paige, J.R. Simanton, W.E. Emmerich, T.O. Keefer, R.A. Shillito, C.L. Unkrich. 1996. Infiltration-scale interactions. Proceedings USDA-ARS Workshop on Real World Infiltration. Pingree Park, CO. July 23-26, 1996, Colorado Water Resources Research Institute, Information Series No. 86, pp. 122-129.

Paige, G.B., J.J. Stone, T.E. Hakonson, and L.J. Lane. 1995. A decision tool for selecting trench cap designs. Proceedings of the 17<sup>th</sup> Annual Department of Energy Low-Level Radioactive Waste Management Conference, December 12-14, 1995, Phoenix, AZ, Idaho National Engineering Laboratory, Idaho Falls, ID.

Lane, L.J., M.H. Nichols, and G.B. Paige. 1995. Modeling erosion on hillslopes: Concepts, theory, and data. Binning, P., H. Bridgman, and B. Williams eds. Proceedings of the International Congress on Modelling and Simulation (MODSIM '95) November 27-30, 1995, University of Newcastle, Newcastle, Australia. Uniprint, Perth Australia.

Paige, G.B., T.E. Hakonson, D.S. Yakowitz, L.J. Lane, and J.J. Stone. 1994. A prototype decision support system for the evaluation of shallow land waste disposal trench cap designs. Proceedings ER '93 Environmental Remediation Conference, Augusta, GA, October 1993 pp. 1111-1117.

Paige, G.B. and P.L.M. Veneman. 1993. Percolation tests and hydraulic conductivity. Soil Survey Horizons 34(1):1-3.

### **Manuals and Reports:**

Mesner, N., A. Walker, G.B. Paige. 2008. Best Management Practices Monitoring Guidance Document for Stream Systems. USDA-CSREES Northern Plains and Mountains Region. 21p.

Paige, G.B. S.T. Gray and T.J. Kelleners. 2008. Soil Moisture Project Update. Wyoming Department of Agriculture. 9 p.

Paige, G.B. and T.O. Keefer. 2005. Soil moisture measurement at Walnut Gulch Experimental Watershed in support of: NASA-JPL Microwave Observatory of Subcanopy and Subsurface (MOSS) Project. Final Report, February 2005. 9 p.

Paige, G.B. 2002. Walnut Gulch Rainfall Simulator: User Manual and Operating Instructions (version 1). USDA-ARS, Southwest Watershed Research Center. 15 p.

Stone, J.J., Paige, G., Hakonson, T.E., Lane, L.J. 1994. Design document for landfill capping prototype decision support system. Los Alamos National Laboratory, LA-UR-94-570, 41 p.

### **Articles:**

Paige, G.B. 2008. Wyoming's Water Information Network. Wyoming Section Society for Rangeland Management, Newsletter. July, 2008.

Paige, G.B. 2006. Water Quality and Erosion Following Wildfires. After the Fire, Casper Star Tribune, October 2006.

### **Fact Sheets:**

Waskom, R., J. Bauder, T. Bauder, D. Clay, N. Mesner, G.B. Paige, K.J. Reddy, T. Scherer, and M. Neibauer. 2006. The National Integrated Water Quality Program, Highlighted Research, Education and Extension Projects in the Northern Plains and Mountains Region.

Reddy, K.J., T. Roth, G.B. Paige, R. Waskom, J. Bauder, T. Bauder, D. Clay, N. Mesner and T. Scherer. 2006. Arsenic in Drinking Water: A regional assessment of Ground Water Wells.

## **PRESENTATIONS**

### **Invited:**

Paige, G.B. 2008. Water Resource Programs. US Forest Service Coordination Meeting, Laramie WY. November 17, 2008.

Paige, G.B. 2008. Water Quality Issues: Coal Bed Methane Development. Water Quality Division, Chapter 1, Section 20, Rules and Regulations Hearing, Cheyenne, WY. October 24, 2008.

Paige, G.B. 2008. Wyoming Water Issues: Watershed Management and Coalbed Methane Water. French Embassy Visit, School of Energy Resources and Ruckelshaus Institute, Laramie, WY. August 19, 2008.

Paige, G.B. 2008. Water Quality and Coal Bed Methane Development. Wyoming Water Law Conference. CLE International, Cheyenne, WY. April 25, 2008.

Paige, G.B. 2008. CBM Product Water: Downstream Water Quality Issues. North Platte River Basin Water Policy Conference, Scottsbluff, NE. March 11, 2008.

Paige, G.B. 2008. Ecological Sites: Using site descriptions for habitat management. Ecological Site Workshop, Pinedale, WY February 29, 2008.

Paige, G.B. 2007. Water Resources Extension and Research Program. Profitable and Sustainable Agriculture Systems, Wyoming Cooperative Extension Service. Laramie, WY. December 13, 2007.

Paige, G.B. 2007. Ecological site descriptions and state and transition models. Ecological Sites as Management Tools, Society for Range Management workshop Park City, UT. October 23, 2007.

Paige, G.B. 2007. Coal bed methane production, drought, climate. Western Region Joint Summer Meetings, Jackson, WY. July 16, 2007.

Paige, G.B. and G. Gade. 2007. Post wildfire: Watershed water quality issues, runoff and erosion. American Public Works Association, Spring Conference. Casper, WY. April 5, 2007.

Paige, G.B. 2007. Watershed health: Decision making & watershed assessment tools. Wyoming Association of Conservation Districts Workshop on Watershed Health. Cody WY. March 9, 2007.

Paige, G.B. 2007. Watershed health: Its not just the water. Wyoming Association of Conservation Districts Workshop on Watershed Health. Cody WY. March 9, 2007.

Paige, G.B. 2007. Watershed planning: Why watersheds? Wyoming Association of Conservation Districts Workshop on Watershed Health. Cody WY. March 9, 2007.

Paige, G.B. 2006. Drought in Wyoming: Risk & planning. Wyoming Women in Agriculture, Annual meeting. Casper WY. November 17, 2006.

Paige, G.B. 2006. Water issues in Wyoming: Survey of public attitudes. Ruckelshaus Institute Water Planning Group Meeting. Cheyenne, WY. May 11, 2006.

Paige, G.B. 2006. Post wildfire effects on rangeland soils and vegetation. Land Reclamation Seminar, Dept. of Renewable Resources, University of Wyoming, Laramie. April 14, 2006.

Roth, T.R., K.J. Reddy, and G.B. Paige. 2006. Regional assessment of arsenic in domestic wells of small communities in region 8 states. National Association of State Universities and Land-Grant Colleges (NASULGC) Eighth Annual Food and Agricultural Science and Education Exhibition and Capitol Hill Reception. Washington, DC. February 28, 2006.

Paige, G.B., J.J. Stone, D. P. Guertin, G.J. Gottfried, and J. Wickre. 2005. Runoff and erosion on a semi-arid grassland after a wildfire. 2005 Joint Fire Science Program Principal Investigator Workshop, San Diego, CA. November 1-3, 2005.

Paige, G.B. 2005. Using ground based lidar for rangeland hydrology. WY Geographic Information Systems Center Seminar Series. University of Wyoming, Laramie. October 27, 2005.

Paige, G.B. and T. L. Thurow. 2005. Rangeland water research: A complex agenda for a changing society. 58<sup>th</sup> Annual Meeting Society for Range Management, Fort Worth, TX Feb 5-11, 2005.

Paige, G.B. 2004. Measurement of runoff and erosion on semiarid rangelands. Department of Renewable Resources, Research Across Disciplines Seminar Series, University of Wyoming, Laramie. October 29, 2004.

#### **Guest Lectures:**

Paige, G.B. Introduction to Watershed Hydrology and Management, Earth Systems Science 1000, Dept. of Renewable Resources, November 10, 2008.

Paige, G.B. 2008. Decision Support Tools: Applications in Natural Resource Management, ENR 4900/5900, Haub School and Ruckelshaus Institute, March 12, 2008.

Paige, G.B. 2007. Infiltration. Watershed Hydrology, Dept. of Renewable Resources, UW, September 25, 2007.

Paige, G.B. 2007. Decision tools: Why talk about decision tools in rangeland management planning? Rangeland Management Planning, Dept. of Renewable Resources, UW, April 12, 2007.

Paige, G.B. 2007. Facilitator: Multi-objective DSS. Guest Speaker Spatial Decision Support System (DSS) Seminar, Wyoming Geographic Information Systems Center, UW, April 9, 2007.

Paige, G.B. 2006. Post wildfire runoff and Erosion Processes. Erosion and Sedimentation, Civil Engineering. October 21, 2006

#### **Presentations:**

Paige G.B. and L.C. Munn. 2008. Impacts of coalbed methane development on water quantity and quality in the Powder River Basin Third Interagency Conference on Research in the Watersheds, September 8-11, 2008, Estes Park, CO. *oral paper*

Paige, G.B. S.N. Miller, T.J. Kelleners and S.T. Gray 2008. Hydrologic instrumentation and data collection in Wyoming. Third Interagency Conference on Research in the Watersheds, September 8-11, 2008, Estes Park, CO. *poster paper*

Williams, M.I., T L. Thurow, G.B. Paige, and A.L. Hild. 2008. Shrubland passerine bird density patterns in relation to ecological sites. 15<sup>th</sup> Wildland Shrub Symposium, June, 17-29, 2008. Boseman, MT. *oral paper*

Church, M.M., M.I. Williams, A.L. Hild, and G.B. Paige. 2008 Comparing Vegetation Monitoring Methods in Shrublands: How Valuable is Grant's Methods in Shrub Communities?. 15<sup>th</sup> Wildland Shrub Symposium, June, 17-29, 2008. Boseman, MT. *oral paper*

Paige, G.B., N. Mesner and A.Walker, 2008. Designing monitoring programs to evaluate BMP effectiveness. 2008 National Monitoring Conference. May 21, 2008. Atlantic City, NJ. *oral paper*

Paige, G.B., S.N. Miller, and M. Sharma. 2008. Effects of DEM Resolution and Storm Characteristics on Hydrologic Modeling. AWRA GIS and Water Resources V. March 17, 2008. San Mateo, CA. *oral paper*

Mulligan C., G.B. Paige, and K.J. Reddy. 2008. Monitoring the quality of CBNG produced water and determining the beneficial uses across the Power River Basin, WY. 2008 USDA National Water Conference. February 6, 2008. Sparks, NV. *oral paper*

Mesner, N., A. Walker, and G.B. Paige. 2008. Designing monitoring programs to evaluate BMP effectiveness. 2008 USDA National Water Conference. February 6, 2008. Sparks, NV. *oral paper*

Williams, M.I., G.B. Paige, A.L. Hild, and T.L. Thurow. 2008. Use of ecological site indicators to describe upland passerine habitat . Society for Range Management 61<sup>st</sup> Annual Meeting. Jan 27- Feb 2, 2008. Louisville, KY. *oral paper*

Church, M.M., M.I. Williams, A.L. Hild, and G.B. Paige. 2008. Impacts of removal and seeding treatments on vegetative structure in greasewood (*Sarcobatus vermiculatus*) and smooth brome (*Bromus inermis*) dominated bottomlands. Society for Range Management 61<sup>st</sup> Annual Meeting. Jan 27- Feb 2, 2008. Louisville, KY. *poster*.

Williams, M.I., G.B. Paige, A.L. Hild., and T.L. Thurow. 2007. Linking ecological site indicators to upland bird density and diversity. WY Society for Range Management Annual meeting. Nov. 26-28, Lander WY. *oral paper*

Baldyga, T.J., S.N. Miller, W.A. Shivoga, F. Lelo, M.W. Jenkins, G.B. Paige, and S. Mooney, 2007. Development of a participatory spatial decision support system for East African rural planning. AfricaGIS 2007 September 17-21, Ouagadougou, Burkina Faso. *oral paper*

Williams, M.I., G.B. Paige, A.L. Hild and T.L. Thurow. 2007. Linking ecological site indicators to upland passerine bird habitat. UW Graduate Student Symposium. April 3-4, Laramie, WY. *oral paper*.

Williams, M.I., G.B. Paige, A.L. Hild., T.L. Thurow and R. Laubhan. 2007. Linking ecological site monitoring techniques to upland breeding bird habitat. Society for Range Management Annual meeting. Feb 12-16, Reno, NV. *poster*

McGee, R., G.B. Paige, J.J. Stone, and G. Ruyle. 2007. Evaluation of three rangeland monitoring methods as indicators of runoff and erosion on ecological sites. Society for Range Management Annual meeting. Feb 12-16, Reno, NV. *poster*

Sharma, M., G.B. Paige and D.C. Goodrich. 2006. Watershed characterization and modeling at different scales using LIDAR data collected at two different spatial resolutions. AWRA Spring Specialty Conference on GIS and Water Resources IV. May 8-10, Houston, TX. *oral paper*.

Stone J.J., J. Wickre, G.B. Paige, D.P. Guertin, and G. Gottfried. 2006. Post wildfire runoff and erosion response on grassland and oak woodlands in southeastern Arizona. Biodiversity and Management of the Madrean Archipelago III. May 4, Tucson, AZ. *oral paper*

Williams, M.I., G.B. Paige, A.L. Hild and T.L. Thurow. 2006. Spatial database and decision tool to evaluate habitat monitoring and management at Browns Park National Wildlife Refuge. UW Graduate Student Symposium. April 3-4, Laramie, WY. *poster*.

Sharma, M. and G. B Paige. 2006. High resolution bare earth DEM from ground based lidar data for watershed characterization and modeling. UW Graduate Student Symposium. April 3-4, Laramie, WY. *poster*.

Paige G.B., D. Clay, C. Reese, C. Ren, M. Neibauer, J. Bauder, N. Mesner, R. Waskom, B. Seelig, K. Reddy, R. Mahler. 2006. Priority Water Issues in the Northern Plains and Mountains Region. USDA – CSREES National Water Quality Meeting. February 5-9, San Antonio, TX. *poster*

Wickre, J., J.J. Stone, G.B. Paige, D.P. Guertin, G.J. Gottfried. 2005. Parameterizing the WEPP model for post fire conditions using a rainfall simulator. 4th USGS Wildland Fire Science Workshop. December 5-7, Tucson, AZ. *poster*

Reddy, K.J., G.B. Paige, and Q. D. Skinner. 2005. Best management options for coalbed methane produced water in semi-arid environments. USDA CSREES 2005 Annual Water Quality Meeting. Feb. 5-10, La Jolla, CA. *poster*

Paige, G.B. J. J. Stone, and D. P. Guertin. 2004. Evaluation of post-wildfire runoff and erosion on semiarid ecological sites. Biodiversity and Management of the Madrean Archipelago II: Connecting Mountain Islands and Desert Seas. May 11-14, Tucson, AZ. *poster*

Paige, G.B., J.J. Stone, D. P. Guertin, R. McGee, and H. Blumenfeld. 2003. Runoff and erosion on a semi-arid grassland after a wildfire. Second International Wildfire Ecology and Fire Management Congress and Fifth Symposium on Fire and Forest Meteorology. November 16-20, Orlando, FL. *oral paper*

Paige, G.B. and J.J. Stone. 2003. Infiltration and runoff: Point and plot scale. First Interagency Conference on Research in the Watersheds. October 27-30, Benson, AZ. *oral paper*

Stone, J.J. and G.B. Paige. 2003. Variable rainfall intensity rainfall simulator experiments on semi-arid rangelands. First Interagency Conference on Research in the Watersheds. October 27-30, Benson, AZ. *oral paper*

Paige, G.B., J.J. Stone, and D.P. Guertin. 2001. Spatial variability of infiltration on semi-arid rangelands." NRCS-ARS-CSREES Partnering Workshop. November 26-30, Tucson, AZ. *oral paper*

Paige, G.B., Stone, J.J., and Guertin, D.P. 2001. Rainfall simulator experiments to parameterize a distributed hydrologic model. American Water Resources Association. Annual Water Resources Conference. November 12-15, Albuquerque, NM. *oral paper*

Paige, G.B., J.J. Stone, L.J. Lane, and D.P. Guertin. 2000. Infiltration and runoff response on a complex soil plot. ASCE Watershed Management 2000. June 21- 24, Fort Collins, CO. *oral paper*

Paige, G.B. and J.J. Stone. 1996. Spatial and temporal variability of infiltration on rangelands. USDA-ARS Workshop on Real World Infiltration. July 23-26, Pingree Park, CO. *oral paper*

Paige, G.B., J.J. Stone, T.E. Hakonson, and L.J. Lane. 1995. A decision tool for selecting trench cap designs. 17<sup>th</sup> Annual Department of Energy Low- Level Radioactive Waste Management Conference. December 12-14, Phoenix, AZ. *oral paper*

Paige, G.B., T.E. Hakonson, D.S. Yakowitz, L.J. Lane, and J.J. Stone. 1993. A prototype decision support system for the evaluation of shallow land waste disposal trench cap designs. ER '93 Environmental Remediation Conference. October 23-25, Augusta, GA. *poster*

Paige, G. B. and D. Hillel. 1991. Comparison of methods for assessing soil hydraulic properties. American Society of Agronomy Annual Meetings. October 17-20, Denver, CO. *poster*

Baker, R.S. and G.B. Paige. 1990. Site suitability assessment for on site sewage disposal. Soil Science Society of Southern New England Conference. November 14, Sturbridge, MA. *oral paper*

**Workshops/Trainings:**

**Watershed 101 & Water Quality 101.** Wyoming Water Quality Monitoring Training Module I. October 10-14, 2008. Laramie, WY.

Training Leader and Facilitator:

*8 oral presentations*

6 Attendees

**Workshop for Landowners in Areas of CBM Development.** March 29, 2008. Rawlins, WY

*Organized and Facilitated Workshop*

6 Attendees

**Workshop for Landowners in Areas of CBM Development.** March 7, 2008 Sheridan, WY

*Organized and Facilitated Workshop*

*1 oral presentation*

65 Attendees

**Ecological Sites for wildlife management.** University of Wyoming Dept. of Renewable Resources and Jonah Interagency Office. February 29, 2008, Pinedale, WY.

*CO-organizer*

*1 invited presentation*

28 Attendees

**Ecological Site Descriptions as a Management Tool: Understanding and Improving Applications for Wildlife Habitat Management in Sagebrush Ecosystems.** Society for Range Management, Western Governors' Association, Western Association of Fish and Wildlife Agencies, The Wildlife Society, October 23 - 25, 2007, Park City UT.

*1 oral presentation*

*invited "ecological site expert" facilitator.*

250 Attendees.

**Field Sampling Methods and Equipment; Data Analysis and Interpretation.** Wyoming Water Quality Monitoring Training Module III. June 19-21, 2007. Casper, WY.

Training Leader and Facilitator:

*2 oral presentations*

*2 day field demonstrations*

Course wrap-up and evaluation

14 Attendees

**Design and Implementation of a Water Quality Monitoring Program.** Wyoming Water Quality Monitoring Training. Module II. March 27-29, 2007. Lander, WY.

Training Leader and Facilitator:

*4 oral presentations*

*Course Final Exam*

Course wrap-up and evaluation

14 Attendees

**Predicting Post Wildfire Hydrology and Erosion on Semi-Arid Grasslands and Oak Woodlands.** USDA–ARS and US Forest Service, Joint Fire Science Program Workshop. August 2006. Sierra Vista, AZ.

Training Facilitator  
*4 oral presentations*  
*1 field demonstration*  
Course wrap-up and evaluation  
25 Attendees

**Field Sampling Methods and Equipment; Data Analysis and Interpretation.** Wyoming Water Quality Monitoring Training. Module III: Casper, WY June 12-15, 2006.

Training Leader and Facilitator:  
*2 oral presentations*  
*2 day field demonstrations*  
Course wrap-up and evaluation  
15 Attendees

**Design and Implementation of a Water Quality Monitoring Program.** Wyoming Water Quality Monitoring Training. Module II: Lander, WY March 5-9, 2006.

Training Leader and Facilitator:  
*4 oral presentations*  
*Course Final Exam*  
Course wrap-up and evaluation  
15 Attendees

**Soil Erosion Network: Soil erosion under climate change.** USDA-ARS, SWRC /ISCO Workshop. Tombstone, AZ. November, 2003

*Field Demonstration:* variable intensity rainfall simulator for quantifying hydrologic and erosion processes on ecological sites in semi-arid rangeland watersheds.  
20 Attendees

**First Interagency Conference on Research in the Watersheds.** Benson, AZ. October 29, 2003.

*Field Demonstration:* variable intensity rainfall simulator for quantifying hydrologic and erosion processes on ecological sites in semi-arid rangeland watersheds.  
60 Attendees

**Linking Physical and Ecological Processes on Southwest Watersheds.** University of Arizona Cooperative Extension In-Service. Tombstone, AZ. October, 2001.

*Field Demonstration:* variable intensity rainfall simulator for quantifying hydrologic and erosion processes on ecological sites in semi-arid rangeland watersheds.  
35 Attendees

**GRANTS:**

Total funding 2004-2008 (since coming to UW): **\$2,034,190.**

**In Progress and Completed:**

**USDA CSREES** Coordinated Regional Water Resources Programming for the Northern Plains and Mountain Region to Address Water Resource Issues. PD: R.M. Waskom (CSU), Wyoming PI: G.B. Paige (2008-2012) \$64,490 (2008) *to be renewed annually.*

**Wyoming Department of AG 2008** Wyoming Soil Moisture Monitoring Network. PIs S.T. Gray and G.B. Paige (7/2008-6/2010) \$25,000.

**Wyoming Game and Fish 2008** Structural and Spatial Characteristics of Sage-Grouse Nesting and Early Brood-Rearing Habitat Suitability of Wyoming Basin Ecological Sites. PIs. G.B. Paige, M. Holloran, and A.L. Hild. (9/2008-6/2010) \$99,822.

**Wyoming Department of AG 2008.** Greybull River Streambed Processes & E. coli Distribution PIs G.B Paige and S. Jones. (9/2008-5/2011) \$80,430.

**Wyoming Association of Conservation Districts 2008** Wyoming Water Quality Monitoring and Certification Program (7/2008- 6/2009) \$65,068.

**USDA – CSREES 2008** Economic and environmental sustainability of conventional, reduced-input, and organic approaches on western crop-range-livestock farms PIs. Norton, J.B., Franc, G.D., Hess, B.W., Hewlett, J.P., Kelleners, T.J., Krall, J.M., Latchininsky, A.V., Mount, D.E., Paige, G.B., Paisley, S., Kniss, A.R., Peck, D.E., Rashford, B., Smith, R.D., Stahl, P.D., Ward, N.L., Wilson, D.W., Press, M.D., Arnould, E.J. (1/2009-12/2012) \$500,000.

**USDA CSREES. 2007** Development of a Rangeland Decision Support Tool to Improve Rangeland Watershed Management Decisions. PIs. D.P. Guertin, G.B. Paige, G. Ruyle, S.N. Miller, D.C. Goodrich, J.J. Stone, M.A. Nearing, P. Heilman. (2007-2010) \$384,554 (\$282,184 – Wyoming)

**F.E. Warren Air Force Base. 2007.** Colorado butterfly plant and Prebles jumping mouse riparian habitat at F. E. Warren AFB, Cheyenne, WY. PIs A.L. Hild, T. Collier and G.B. Paige. (2007-2009) \$64,796.

**US Fish & Wildlife Service. 2007.** Monitoring of grass and shrub communities in bottomlands at Browns Park National Wildlife Refuge, Co. PIs. G.B. Paige and A.L. Hild. (2007-2009) \$99,226.

**UW Faculty Grant-in-Aid. 2007.** Soil moisture sally creek watershed. PIs. T. Kelleners, G.B. Paige, S.N. Miller. \$7,400.

**UW AES-Special RFP for Equipment. 2006.** Modernization of the Environmental Simulation Laboratory. PIs. G.B. Paige, D. Williams, P. Stahl, A.L. Hild and T. Collier. Submitted jointly to UW Research Office Equipment Grants. \$117,000.

**UW College of Agriculture 2006.** Instrumentation of Experimental Watershed. PIs. S.N. Miller and G.B. Paige \$11,308

**US Fish & Wildlife Service and USGS: 2005.** Spatial database and decision tool to develop and evaluate habitat monitoring and management practices at Browns Park National Wildlife Refuge. PIs: A. Hild and G.B. Paige (2005-2008) \$208,521.

**USDA CSREES Water Quality Regional Project. 2005.** Regional Assessment of Arsenic in Domestic Wells of Small Communities in Region 8 States. PIs: K.J. Reddy and G.B. Paige \$15,000.

**Nasa Space Grant Consortium. 2005.** Remotely Sensed LIDAR Data to Characterize Semiarid Watersheds at Different Scales. PI: G.B. Paige \$10,640.

**USDA CSREES 406: 2004.** Coordinated Agriculture Water Quality Programming for the Northern Plains and Mountains Region. PD: R.M. Waskom (CSU) Wyoming PIs: Q.D. Skinner, K.J. Reddy, G.B. Paige (2004-2008) \$2,561,862 (\$254,105-Wyoming).

**Wyoming Association of Conservation Districts. 2004.** Water Quality Monitoring Certification Program. PIs: G.B. Paige, Q.D. Skinner and K.J. Reddy. (2004-2007) \$129,200.

**Joint Fire Science Program. 2003.** Quantification of Runoff and Erosion on Semi-arid Grasslands following a Wildfire. PIs: G.B. Paige, J.J. Stone, D.P. Guertin, G.J. Gottfried. (2003-2006) \$127,000.

**Sustainability of Semi-arid Hydrology and Riparian Areas (NSF funded Science and Technology Center) 2000.** Spatial Variability of Infiltration and Runoff Processes on Semiarid Watersheds. PIs. G.B Paige, J.J. Stone, D.C. Goodrich and A.W. Warrick(2 year post doctorate position) \$100,000.

**Unsuccessful:**

**Rocky Mountain Research Station. 2008.** Development of management tools for quantifying, tracking and visualizing the spatial arrangement of vegetation structure and habitat characteristics following disturbance. PIs. G.B. Paige, A.L. Hild. (2 years) \$80,000.

**UW Agriculture Experiment Station. 2008.** Effect of drought on rangeland productivity in Wyoming. PIs. T.J. Kelleners, G.B. Paige, S.T. Gray. (2.7 years) \$60,000.

**Wyoming Sage-Grouse Conservation Group. 2008.** Ecological Site Description, Mapping and Sage-Grouse Habitat Monitoring on the Mesa. PIs. G.B. Paige, A.L. Hild, M. Holloran (1 year) \$31,746

**North Platte Decree Committee. 2007.** Quantifying Consumptive Water Use in the Upper North Platte River Basin. PIs. B. Ewers, F. Ogden, T. Kelleners, G. Paige. (2 years) \$704,317.

**USDA CSREES. 2006.** Spatial Decision Support System for Rangeland Watershed Assessment PIs. G.B. Paige, S.N. Miller, D.P. Guertin, P. Heilman (3 years) \$486,841.

**DOE – Ruckelshaus Institute ENR. 2006.** Effects of Coal Bed Natural Gas Co-Produced Water on Ephemeral and Intermittent Channels in the Powder River Basin. PIs. G.B. Paige, S. Neizgoda, N. Humphrey, S.N. Miller (2 years) \$293,105.

**US EPA. 2006.** Spatial Decision Support System for Watershed Assessment. PIs. G.B. Paige, D.P. Guertin, P. Heilman. (1 year) \$79,671.

**USDA National Research Initiative. 2005.** Methodology for Improved Water Quality Assessment of Watersheds: Linking water quality monitoring and watershed processes. PIs. G.B. Paige and S.N. Miller. (3 years) \$330,853.

**USDA CSREES. 2005.** Spatial Decision Support System for Rangeland Watershed Assessment. PIs. G.B. Paige, S.N. Miller, D.P. Guertin, P. Heilman. (3 years) \$476,641.

**Wyoming Water Resources Program. 2005.** Effect of CBM discharge water on ephemeral channels in the Powder River Basin. PIs. G. B. Paige, S. Niezgod, N. Humphrey, S.N. Miller (2 years) \$106,789.

**Wyoming Water Resources Program. 2005.** Quantification of hydrologic impacts of watershed management practices on Bates Creek Watershed. PIs. G.B. Paige, R. Vore, S.N. Miller (2 years) \$101,139.

**Strategic Environmental Research And Development Program (SERDP). 2004.** Distributed, Physically Based Models for Transport and Fate of Range Energetic Materials in Semiarid Environments. PIs. L.J. Lane, M. Wigmosta, G.B. Paige. (3 years) \$1,000,000.

### **TEACHING**

Environmental Assessment ENR 4900/5900, Spring 2008. Mentored a team of 4 students, participated in class discussions and gave a guest lecture on Decision Support Tools for Watershed Assessment.

**GRADUATE STUDENTS****Current:**

**Williams, Mary I.** PhD, Rangeland Ecology and Watershed Management. Recipient of Graduate School Women and Minority Fellowship. Co-Chair, Dr. A.L. Hild.

**Paterson, Mickey** PhD, Rangeland Ecology and Watershed Management, Co-chair, Dr. KJ Reddy

**Church, Matthew** MS, Rangeland Ecology and Watershed Management, Co-chair, Dr. A.L. Hild

**Perlinski, Tony** PhD Rangeland Ecology and Watershed Management, Co-chair, Dr. S.N. Miller

**Swallow, Aaron, M.**, Rangeland Ecology and Watershed Management, Recipient of the Water Resources Assistantship, Chair

**Vithanage, Jagath**, PhD, Rangeland Ecology and Watershed Management, Co-chair, Dr. S.N. Miller

**Blain, Liberty** MS, Rangeland Ecology and Watershed Management, Chair

**Beaugh, Corey** MS, Rangeland Ecology and Watershed Management, Chair

**Tilaye, Abhishek** MS, Rangeland Ecology and Watershed Management, committee member

**Anderson, Kelsha** MS, Rangeland Ecology and Watershed Management, committee member

**Martin, Carrie** MS, Rangeland Ecology and Watershed Management, committee member

**Schaffer, Gretchen**, MS, Rangeland Ecology and Watershed Management, committee member

**Hunter, Steve**, MS, Rangeland Ecology and Watershed Management, committee member

**Completed:**

**Banks, David** MS, Zoology and Physiology, Defended December 2008 Graduate faculty representative.

**Soltis, Jeff** MS, Rangeland Ecology and Watershed Management. 2008. *Public involvement in natural resource decision making*. Committee member.

**Baldyga, Tracy** PhD, Rangeland Ecology and Watershed Management, 2008. *Spatially explicit multiple objective decision support for rural watersheds*. committee member. Currently with IWMI, Ghana West Africa.

**Sharma, Maneesh** MS, Rangeland Ecology and Watershed Management. 2007. *Assessing effect of resolution and rainfall at plot and watershed scales in hydrologic modeling*. Chair. Currently with Coal Bed Methane Associates, Laramie, WY.

**Zobell, Aaron** MS, Rangeland Ecology and Watershed Management. 2006 *Water quality of the Bitter Creek and Killpecker Creek watersheds*. Co-chair, Dr. Q.D. Skinner. Currently with USFS, Utah.

**Shrestha, Sudhir** MS. Rangeland Ecology and Watershed Management. 2007. *Plan B*. Committee member.

**Wickre, Jennifer MS**, Watershed Management, University of Arizona. 2006. *Parameterizing the WEPP model for post-fire conditions in semi-arid environments using rainfall simulator*. Committee member.

**McGee, Rachel MS**, Watershed Management, University of Arizona. 2006 *Evaluation of three rangeland monitoring methods as indicators of runoff and erosion*. Committee member. Currently with NRCS in Arizona.

**Blumenfeld, Hana MS**, Watershed Management, University of Arizona 2002 *Quantifying rangeland health indicators using runoff and sediment from rainfall simulator experiments*. Committee member. Currently with USFS, Oregon.

### **EXTENSION MEETINGS AND ACTIVITIES**

#### **Meetings and Activities (2008):**

- |          |   |
|----------|---|
| January  | Wyoming Water Forum, State Engineers Office, Cheyenne, WY.<br>WY Department of Environmental Quality TMDL workshop, Cheyenne, WY.<br>USDA-CSREES Water Quality Meeting, conference call.  |
| February | USDA CSREES Annual Water Quality Meeting and Regional Water Quality Sparks, NV. (1 symposium, 2 oral presentations).<br>Ecological Sites For Wildlife Habitat Management Workshop, Pinedale, WY.  |
| March    | Workshop for Landowners in Areas of CBM Development. Sheridan, WY.<br>Workshop for Landowners in Areas of CBM Development. Rawlins, WY.<br>USDA-CSREES Water Quality Meeting, conference call.<br>13 <sup>th</sup> Annual North Platte River Basin Water Policy Conference, Scottsbluff, NE (invited presentation).<br>Reclamation Issue Team Workshop, Laramie, WY.  |
| April    | Wyoming CES Strategic Planning Retreat, Casper, WY.<br>Wyoming Water Law Conference, Cheyenne, WY (invited presentation).<br>USDA-CSREES Water Quality project meeting, Laramie, WY.<br>WY Environmental Quality Council Hearing, CBM water issues (testified).<br>WY Cooperative Extension Service, Sustainable Management of Rangeland Resources initiative team meeting, Casper, WY.<br>NRCS State Technical Committee Meeting, Casper, WY |
| May      | WY Environmental Quality Council Hearing, CBM water issues (testified).<br>National Water Quality Monitoring Meeting, Atlantic City, NJ (oral presentation).<br>Wyoming Water Forum, Cheyenne, WY.<br>USDA-CSREES Water Quality project meeting, conference call.<br>USDA- CSREES project meeting with Laramie County Conservation District, Cheyenne, WY.  |

- June State Climatologist, Wyoming Department of Agriculture, hydrologic instrumentation meeting, Cheyenne, WY.  
USDA-CSREES Water Quality project meeting, Laramie, WY.
- July WY Department of Environmental Quality TMDL workshop, Cheyenne, WY.  
USDA CSREES Water Quality Committee for Shared Leadership meeting, Boulder, CO.  
Soil moisture instrumentation site visits, WY.  
USDA-CSREES Rangeland project meeting, Laramie, WY.
- August NWS soil moisture site installation, Mammoth Hot Springs, WY.  
School of Energy Resources & Ruckelshaus Institute, French Embassy Visit, Laramie, WY (invited presentation).  
USDA-CSREES 406 Water Quality Project meeting, conference call.
- September USDA-CSREES Water Quality project annual meeting, Fargo, ND.  
ARS- SRM Climate Change Workshop, Cheyenne, WY.  
3<sup>rd</sup> International Conference for Research in Watersheds, Estes Park, CO. (2 presentations).  
WY Cooperative Extension Service, Specialist meeting, Laramie, WY.  
NRCS State Technical Committee Meeting, Casper, WY.  
Soil moisture instrumentation project meeting, Laramie, WY.
- October WACD Water Quality Monitoring Training, Laramie, WY (organized and taught – 8 presentations).  
Society for Range Management, Wyoming Section, conference call.  
Ruckelshaus Institute ENR Water Committee Meeting, Cheyenne, WY.  
USDA-CSREES 406 Water Quality Project meeting, conference call.  
WY Environmental Quality Council Hearing, CBM water issues (presentation).  
Cooperative Extension, Community of Practice meeting, conference call.
- November Wyoming Section Society for Rangeland Management annual meeting, Cheyenne, WY.  
USDA-CSREES Water Quality project meeting, conference call.  
WY Environmental Quality Council Hearing, CBM water issues Meeting with Stan Flitner, Laramie, WY.  
US Forest Service Coordination Meeting, Laramie WY. (invited presentation).
- December WY Cooperative Extension Service, Specialist meeting, Laramie, WY.  
USDA-CSREES Water Quality project meeting, conference call.  
Water Conservation Incentives program meeting, Cheyenne, WY.  
Water Conservation, Community of Practice letter of intent submitted.

**Meetings and Activities (2007):**

- January      USDA-CSREES Water Quality Meeting, Logan UT.  
 USDA-CSREES Water Quality Meeting, conference call.  
 WY Environmental Quality Council Hearing, CBM water issues (testified).  
 USDA CSREES Annual Water Quality Meeting and Regional Water Quality Meeting, Savannah, GA. (oral presentation).
- February     Society for Range Management Annual Meeting, Reno, NV (2 presentations).  
 North Platte Consumptive Water Use Meeting, Laramie, WY.
- March        Watershed Health Workshop, Cody, WY (3 invited presentations).  
 State Climatologist, Wyoming Department of Agriculture, Soil moisture instrumentation meetings Laramie, WY.  
 WY Cooperative Extension Service, Specialist meeting.  
 Wyoming Association of Conservation Districts, Water Quality Monitoring Training, Lander, WY (Lead training, 4 presentations).  
 Ruckelshaus Institute ENR Water Committee Meeting.  
 North Platte Consumptive Water Use Meeting, Laramie, WY.
- April         American Public Works Association, Spring Conference. Casper, WY. (invited presentation).  
 USDA-CSREES Water Quality project meeting, Laramie, WY.  
 Wyoming Drought Task Force, Cheyenne, WY.
- May          USDA-CSREES Water Quality project meeting, Laramie, WY.  
 USDA-CSREES Water Quality project meeting, conference call.  
 CBM watershed permitting landowner survey project meeting, Cheyenne, WY.
- June         State Climatologist, Wyoming Department of Agriculture, State Engineers Office, USGS, Water Development Commission, Hydrologic instrumentation meeting, Cheyenne, WY.  
 WACD Water Quality Monitoring Training, Casper, WY (2 presentations, 2 field demonstrations).
- July          Western Region Joint Summer Meetings, Jackson, WY. (invited presentation).  
 USDA CSREES & NRCS CEAP panel review.  
 Soil moisture instrumentation site visit, Laramie, WY.
- August        USDA-CSREES 406 Water Quality Project meeting, conference call.
- September    USDA-CSREES Water Quality project annual meeting, Logan, UT.  
 Ruckelshaus Institute ENR Water Committee Meeting, Laramie, WY.  
 WY Cooperative Extension Service, Specialist meeting.  
 Soil moisture instrumentation site visit, Meeteetse, WY.

Soil moisture instrumentation project meeting, Laramie, WY.

- October WACD Water Quality Monitoring Training, Laramie, WY (organized).  
Society for Range Management Workshop. Park City UT. (1 presentation, invited expert).  
WY Cooperative Extension Service, Reclamation meeting, Laramie, WY.  
USDA-CSREES 406 Water Quality Project meeting, conference call.  
Kirby Creek Watershed meeting, Laramie, WY.
- November WY Cooperative Extension Service, EPIC Conference and Sustainable Management of Rangeland Resources initiative team meeting, Laramie, WY.  
Wyoming Section Society for Rangeland Management, Lander, WY (elected Representative of Southeast Section).  
USDA-CSREES Water Quality project meeting, conference call.
- December WY Cooperative Extension Service, Specialist meeting.  
USDA-CSREES 406 Water Quality Project meeting, conference call.  
WY Cooperative Extension Service Profitable and Sustainable Agriculture Systems Initiative Team meeting (invited presentation).

#### **Meetings and Activities (2006):**

- January WY Department of Environmental Quality Chapter 1- Section 20 meeting  
Cheyenne, WY.  
WY Department of Environmental Quality Water and Waste Meeting, Cheyenne, WY.
- February USDA CSREES Annual Water Quality Meeting and 406 Regional Water Quality Meeting, San Antonio TX. (presentation).  
Ruckelshaus Institute ENR Water Committee Meeting  
NASULGC Eighth Annual Food and Agricultural Science and Education Exhibition and Capitol Hill Reception, Washington, D.C. ( invited presentation).
- March Wyoming Association of Conservation Districts, Water Quality Monitoring Training (Module II), Lander, WY (3/5-3/9) (Lead training; 4 presentations).  
Wyoming Association of Conservation Districts Watershed Conference, Riverton, WY.  
USEPA, Environmental Justice, CSU & UW Arsenic Meeting (presentation).
- April UW Cooperative Extension Service, Sustainable Management of Rangeland Resources initiative team meeting Saratoga, WY.  
BLM, NRCS Rangeland Health Workshop, Santa Fe, NM.

- May Ruckelshaus Institute ENR Water Committee, Cheyenne, WY (presentation).  
USDA NRCS Technical committee meeting, Casper WY.
- June Wyoming Stock Growers meeting, Casper, WY.  
CBM product water (subpoenaed for deposition).  
Wyoming Association of Conservation Districts, Water Quality Monitoring Training (Module III), Casper, WY. (Led training; 2 presentations, field training).  
Barlow Ranch, Gillette, WY . Consultation and soil samples collection from CBM water discharge area.
- July Wyoming CBM task force meeting, Cheyenne, WY.  
USDA CSREES 406 project meeting, Fort Collins, CO.  
USDA CSREES & NRCS CEAP panel review.  
USDA CSREES 406 Water Quality Project meeting.  
USDA CSREES 406 Water Quality Project review, Park City, UT (presentation).
- August WY Department of Environmental Quality Water and Waste Meeting: CBM product water Buffalo, WY.  
Co-leader JFSP Post Wildfire Runoff and Erosion Workshop, Sierra Vista, AZ (4 presentations).  
Wyoming CBM task force meeting, Cheyenne, WY.
- September Ruckelshaus Institute ENR Water committee meeting.  
Wyoming Association of Conservation Districts Water quality training meeting  
Land Stewardship Meeting, Meeteetse, WY.
- October Ruckelshaus Institute ENR, Drought and Climate Workshop, Laramie, WY.
- November Ruckelshaus Institute ENR, Water Committee meeting, Laramie, WY.  
Wyoming Women in Agriculture Conference: Drought panel, Casper, WY.  
(invited presentation)  
Ruckelshaus Institute ENR, water extension meeting.  
UW Cooperative Extension Service, Sustainable Management of Rangeland Resources meeting, Sheridan, WY.  
WY Society Range Management meeting, Sheridan, WY.
- December Wyoming Stock Growers meeting, Casper, WY.

**Meetings and Activities (2005):**

- January NRCS state technical advisory committee meeting, Casper, WY.  
Joint Fire Science Review Panel.

February      USDA CSREES Annual Water Quality Meeting and 406 Regional Water Quality Project Meeting, La Jolla, CA.  
Society for Range Management Annual Meeting Ft. Worth, TX (invited presentation).

March          UW Cooperative Extension Service, Sustainable Management of Rangeland Resources initiative team meeting Thermopolis, WY.

April          Wyoming Association of Conservation Districts, water quality training meeting Cheyenne, WY.  
CBM tour and meeting with producer, Gillette WY.  
Waste Water Disposal meeting, Wheatland, WY.  
UW Cooperative Extension Service, PSAS initiative meeting. Laramie, WY.  
US EPA CAFO training, Denver, CO.

May            CBM water disposal sites, Gillette, WY.  
UW Cooperative Extension Service Moskee Resource Management Team Meeting, Newcastle, WY.  
Wyoming Association of Conservation Districts water quality training meeting Cheyenne, WY.

June           Wyoming Association of Conservation Districts Board Meeting, Gillette, WY.  
Wyoming Farm Bureau Federation (and Wyoming Stock Growers Association) USFS Range Meeting, Cheyenne, WY.  
WY Department of Environmental Quality water quality standards workgroup. Sheridan, WY.  
WY Department of Environmental Quality, Gas Company & Landowner meeting. Sheridan, WY.  
UWCES Moskee Resource Management Team Meeting and Site Visit, Newcastle, WY.

July            NRCS and Cooperative Extension Service, Irrigation Training, Ft. Collins, CO.  
Wyoming Association of Conservation Districts water quality training meeting, Cheyenne, WY.  
UWCES, Water Quality Monitoring Training Program: module 1, Casper, WY.

August        UW Cooperative Extension Service, Moskee Resource Management Team Meeting and Site Visit, Newcastle, WY.

September    WY Department of Environmental Quality, UWCES, & Landowner meeting, Pinedale, WY.  
NRCS state technical advisory committee meeting, Casper, WY.  
CES - CBM landowner workshop & panel discussion, Trinidad, CO.  
CSREES Regional Water Quality Meeting Sioux Falls, SD.

Wyoming Association of Conservation Districts water quality training meeting,  
Cheyenne, WY

- October Landowner CBM water disposal sites, Gillette, WY.  
WY Department of Environmental Quality TMDL committee meeting, Cheyenne,  
WY.
- November UW Cooperative Extension Service, Sustainable Management of Rangeland  
Resources initiative team meeting Thermopolis, WY.  
Wyoming Association of Conservation Districts annual meeting, Riverton, WY.
- December WY Department of Environmental Quality and Landowner meeting: CBM water  
discharge permit. Cheyenne, WY.

**Meetings and Activities (2004):**

- October Wyoming Farm Bureau Federation (and Wyoming Stock Growers Association)  
UW, Laramie, WY.  
BLM: spatial mapping of coal bed methane water/wells. Casper WY.
- November 59th Annual Meeting of the Rocky Mountain Hydrologic Research Center  
Boulder, CO.  
CSREES Regional Water Quality Meeting Denver, CO.  
USFS Range meeting Casper, WY.
- December Wyoming Stock Grower’s biannual meeting.  
UW Cooperative Extension Service, Sustainable Management of Rangeland  
Resources initiative team meeting Thermopolis, WY.

**SERVICE**

**State, Regional and National:**

- Wyoming Water Quality Coordinator (USDA-CSREES, National Water Quality  
Program) 2005–present
- Wyoming TMDL Committee 2005 – present
- NRCS state technical advisory committee 2005 – present
- Wyoming Water Quality Standards Revision Workgroup (Chapter 1- Section 20) 2005 –  
2006
- Society for Range Management, Wyoming Section, Southeast Representative (elected)  
2008-2010
- USDA-CSREES and NRCS, CEAP Project, Invited reviewer, 2006, 2007
- Joint Fire Science Program, Invited reviewer, 2005

**Peer Reviews:**

Journal of American Water Resources Association (2-3/year)  
Hydrologic Processes (2-3/year)  
Water Resources Research  
International Journal Wildfire Management  
Soil Science  
Rangeland Ecology & Management  
Water International  
USFS internal peer review for Catena

**University of Wyoming:**

Faculty Development Committee 2006 – present  
Ruckelshaus Institute for Environment and Natural Resources  
Water Committee 2006 - present  
Climate Change Committee (C<sup>3</sup>) 2007- Present  
Ecological Climatologist (ATMOS/REWM) Faculty Search committee 2007- 08  
Eco-informatics Advisory Committee 2008 – present  
EPSCoR Foster Advisory Committee  
Reclamation Issue Team  
Soil Physics Faculty Search Committee 2006  
SAREC Director Search Committee 2006