

Darin J. Law

University of Arizona
 School of Natural Resources and the Environment
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EDUCATION

Doctoral Degree – Forestry, University of Montana-Missoula, 2004
 Dissertation: *Forest and range ecotone restoration*. Advisor, Dr. Peter Kolb

Master of Science Degree – Range Science, Montana State University-Bozeman, 1999
 Thesis: *Water table dynamics and soil texture of three riparian plant communities*. Advisor, Dr. Clayton Marlow

Bachelor of Science Degree – Range Resources, University of Idaho-Moscow, 1996
Major: Range Resources **Minor:** Spanish

RESEARCH EXPERIENCE

Research Specialist Senior, School of Natural Resources and the Environment, The University of Arizona 2008 to Current

Mentor, Undergraduate ecohydrology field and classroom research independent study, The University of Arizona Spring 2011.

Post-Doctoral Researcher, USDA Forest Service, Rocky Mountain Research Station, Albuquerque, NM March 2007 – October 2008

Post-Doctoral Researcher, Montana State University – Bozeman August 2004 – March 2007

Research Assistant, University of Montana - College of Forestry and Conservation, Missoula, MT. May 1999 – May 2004

Teaching Assistant, University of Montana – College of Forestry and Conservation, Missoula, MT
 Forest Ecology Laboratory (2 semesters)
 Natural Resources Measurement Camp, Forestry 200 (2 semesters)

Research Assistant, Montana State University – College of Agriculture, Bozeman, MT. May 1997 – May 1999

Teaching Assistant, Montana State University – College of Agriculture, Bozeman, MT.
 Range Management Laboratory (1 semester)

CURRENT FUNDING SOURCES

1. US Department of Energy, National Institute for Climate Change Research
 Title: Determining Vegetation Responses to Global-Change-Type Drought Extremes: Will Warming Amplify Tree Die-Off?
 Amount: \$367,455

PAST FUNDING SOURCES

2. USDA Forest Service, Research and Development, Climate Change Grant
Title: Tools to Assess and Assist Vulnerable Species at Risk from Climate Change
Amount: \$81,000
3. Middle Rio Grande Bosque Initiative, Climate Change Grant
Title: Assessment of vulnerable species at risk from climate change in the Middle Rio Grande Bosque
Amount: \$19,084
4. National Groundwater Research and Educational Foundation, Inc.
Title: Interactions Between Fire, Vegetation, Climate and Groundwater in a Burned Ponderosa Pine/Gambel's Oak Watershed
Amount: \$3,500

FEDERAL GOVERNMENT EXPERIENCE

Post-Doctoral Researcher, USDA Forest Service, Rocky Mountain Research Station, Albuquerque, NM
March 2007 – October 2008

Biology Technician, USDI Bureau of Land Management, Missoula, MT.
June 2003 – September 2003

Botany Technician, USDI Bureau of Land Management, Missoula, MT.
June 2004 – July 2004

OTHER NATURAL RESOURCE RELATED EMPLOYMENT

Forestry Technician, Boise Cascade Corp., Horseshoe Bend, ID.
May – August, 1994

Forestry Technician, Boise Cascade Corp., Horseshoe Bend, ID.
May – August, 1995

Forestry Technician, Boise Cascade Corp., Horseshoe Bend, ID.
May – August, 1996

PEER REVIEWED PUBLICATIONS

Merino, M. L., J. P. Field, J. C. Villegas, D. D. Breshears, J. J. Whicker, **D. J. Law**, and A. Uregghe. Submitted. Wind-blown sediment in burned and unburned semiarid grassland: Interplay across temporal scales and particle sizes.

Law, D. J. Submitted. Do gambel oak leaves deter or facilitate ponderosa pine germination: Phytotoxins versus water availability?

Law, D. J., D. D. Breshears, M. H. Ebinger, C. W. Meyer, and C. D. Allen. In Revision. Soil C and N loss from a "leaky" eroding woodland: Not concentrated in downslope vegetation patches but depleted down ephemeral channels. *Journal of Arid Environments*.

Law D. J., D. M. Finch and C. B. Marlow. In progress. Post-fire Effects on Groundwater Recharge in a Semi-arid Ponderosa Pine Forest.

Law, D. J. and D. M. Finch. 2010. Hydrologic, abiotic and biotic interactions: plant density, windspeed, leaf size and groundwater all affect oak water use efficiency. *Ecohydrology* DOI: 10.1002/eco.172

Villegas, J. C., D. D. Breshears, C. B. Zou, and **D. J. Law**. 2010. Ecohydrological controls of soil evaporation in deciduous drylands: How the hierarchical effects of litter, patch and vegetation mosaic cover interact with phenology and season. *Journal of Arid Envrionments* 74(5): 595-602.

Law, D. J., and P. F. Kolb. 2007. The Effects of Forest Residual Debris Disposal on Perennial Grass Emergence, Growth and Survival in a Ponderosa Pine Ecotone. *Rangeland Ecology and Management* 60(6):632-643.

Law, D. J., C. B. Marlow, J. C. Mosley, S. Custer, P. Hook and B. Leinard. 2000. Water table dynamics and soil texture of three riparian plant communities. *Northwest Science* 74(3): 234-239.

PROFESSIONAL ORAL PRESENTATIONS

D. D. Breshears, H. D. Adams, C. D. Allen, N. E. Cobb, **D. J. Law**, L. Lopez-Hoffman, N. G. McDowell, and P. D. Royer. Drought-induced die-off: Progress on mechanisms, consequences, and options from the perspective of the pinyon pine *Pinus edulis* as a model species. European Ecological Federation, Spain September 2011.

D. J. Law, S. Ravi, D. D. Breshears, G. A. Barron-Gafford, and T. E. Huxman. Evapotranspiration partitioning in a warmer world: Natives lose out to invasives in a shift to evaporation dominance? Ecological Society of America 96th Annual Meeting, August 2011. Austin, Texas.

H. D. Adams, M. Guardiola-Claramonte, G. A. Barron-Gafford, D. D. Breshears, M. J. Germino, C. B. Zou, **D. J. Law**, N. Cobb, and T. E. Huxman. Global warming, extreme drought events and tree mortality: Ecological transformations, mechanisms, impacts, and uncertainties. Ecological Society of America 95th Annual Meeting August 2010. Pittsburg, Pennsylvania.

D. J. Law, J. C. Villegas, D. D. Breshears, and C. B. Zou. How deciduous woody-plant-cover affects seasonally-dependent ecohydrological limitations on soil evaporation: energy and wind effects at patch and vegetation-mosaic scales. Ecological Society of America 94th Annual Meeting. August 2009. Albuquerque, New Mexico.

D. J. Law, D. M. Finch, and C. B. Marlow. Evaluation of Groundwater Recharge and Riparian Vegetative Succession Using a Post-Fire Chronosequence. Ecological Society of America 92nd Annual Meeting. August 2007. San Jose, California.

D. J. Law and D. M. Finch. Woody debris, ash, grass and weeds: Forest and range ecotone restoration. *In: Fourteenth Wildland Shrub Symposium Shrublands Under Fire: Disturbance and Recovery in a Changing World*. Shrub Research Consortium, Southern Utah University, Cedar City, Utah – 2006.

D. J. Law and P. F. Kolb. Influence of alternative forest residual treatments on soil moisture and seedling germination and establishment in a forest/range ecotone. Ecological Society of America – Tucson, AZ, 2002

D. J. Law and P. F. Kolb. Effects of alternative site treatments on soil moisture and plant recruitment for a forest/range ecotone. Society for Range Management – Kona, Hawaii, 2001

D. J. Law and C. B. Marlow. Water table dynamics and soil texture of three riparian plant communities. Society for Range Management – Omaha, NB, 1999

D. J. Law and C. B. Marlow. Tri-State Riparian Management and Monitoring Workshop – Bozeman, MT, 1998

D. J. Law and C. B. Marlow. Engineering Biological Processes for Environmental Enhancement – Fairmont, MT, 1998.

PROFESSIONAL POSTER PRESENTATIONS

D. J. Law, J. B. Sankey, D. D. Breshears, and R. H. Webb. A new approach for predicting near-surface wind using high-resolution characterizations of canopy architecture from hemispherical photography and LiDAR: A preliminary assessment at the Santa Rita Experimental Range. Eighth Annual Research Insights in Semiarid Ecosystems (RISE) Symposium. 29 October 2011. Tucson, Arizona.

D. D. Breshears, H. D. Adams, C. D. Allen, N. S. Cobb, L. J. Graumlich, T. E. Huxman, **D. J. Law**, L. Lopez-Hoffman, A. K. Macalady, and N. G. McDowell. Hot times and dead trees: Changing landscapes due to drought-induced tree die-off. 22nd Annual U. S. Kavli Frontiers of Science Symposium. November 4-6, 2010. Irvine, California.

D. J. Law, D. D. Breshears, M. H. Ebinger, and C. D. Allen. Soil C and N in hydrological functional units within an eroding semiarid woodland hillslope: Ecohydrological-biogeochemical coupling via runoff-driven redistribution and loss. Ecological Society of America 95th Annual meeting. August 2010. Pittsburg, Pennsylvania.

J. P. Field, L. Merino-Martin, J. C. Villegas, J. J. Wicker, D. D. Breshears, **D. J. Law**, and A. M. Urgeghe. Characterizing Regional and local aerosol components associated with wind erosion following grassland fire. Ecological Society of America 95th Annual meeting. August 2010. Pittsburg, Pennsylvania.

D. J. Law and D. M. Finch. Water use efficiency of Gambel's oak in a semi-arid ponderosa pine forest: Partitioning between transpiration and photosynthesis changes along spatial and temporal gradients. AGU Chapman Conference – Examining Ecohydrological Feedbacks of Landscape Change Along Elevation Gradients in Semiarid Regions. 4-8 October 2009. Boise and Sun Valley, Idaho.

Merino-Martin, L., J. P. Field, J. C. Villegas, J. J. Whicker, D. D. Breshears, **D. J. Law**, and A. M. Urgeghe. Background dust emission following grassland fire: A snapshot across the particle-size spectrum highlights how high-resolution measurements enhance detection. Sixth Annual Research Insights in Semiarid Ecosystems (RISE) Symposium. 3 October 2009. Tucson, Arizona.

D. J. Law and D. M. Finch. *Quercus Gambelii* distribution and abundance along a groundwater gradient. Ecological Society of America 93rd Annual meeting. August 2008. Milwaukee, Wisconsin.

D. J. Law, D. M. Finch and C. B. Marlow. Evaluation of Groundwater Recharge and Plant Water Use: a Post-fire Chronosequence in New Mexico. *In: Fire in the Southwest: Integrating Fire into Management of Changing Ecosystems*. Association for Fire Ecology Regional Conference. – Tucson, AZ, 2008.

B. K. Pendleton, R. Pendleton, and **D. J. Law**. Restoration of Rio Grande bosque forests: Developing understory slash pile burn protocols that minimize cottonwood mortality. Association for Fire Ecology Regional Conference. *Fire in the Southwest: Integrating Fire into Management of Changing Ecosystems* – Tucson, AZ, 2008.

B. K. Pendleton, R. Pendleton, and **D. J. Law**. Restoration of Rio Grande bosque forests: Developing understory slash pile burn protocols that minimize cottonwood mortality. Ecological Society of America 92nd Annual meeting. August 2007. – San Jose, California.

D. J. Law, D. M. Finch, and C. B. Marlow. The effects of fire on riparian water: A post fire chronosequence study. Joe Skeen Institute for Rangeland Restoration Workshop – Cloudcroft, NM, 2006

D. J. Law. The effects of forest residual treatments and perennial grass on cheatgrass growth and survival. Invasive Species Conference, Rocky Mountain Research Station – Albuquerque, NM, 2006

D. J. Law and P. F. Kolb. Effects of alternative site treatments on soil moisture and plant recruitment for a forest/range ecotone. Montana Academy of Science – Missoula, MT, 2000

PROFESIONAL LEADERSHIP AND CONTRIBUTIONS

Principal Organizer for the Ecological Society of America workshop: Addressing global warming challenges in drylands: Integrating ecophysiological mechanisms with ecohydrological feedbacks. Ecological Society of America 95th Annual Meeting. August 2010. Pittsburgh, Pennsylvania.

Peer-Reviewer for leading scientific journals: *Oecologia*, *Journal of Arid Environments*, *Ecological Modeling*, *Naturwissenschaften*, *Arid Land Research and Management*, *Plant and Soil*

SKILLS

Strong project management and leadership ability.
Coordinating multiple tasks efficiently.
Use of applicable presentation, word processing,
and statistical software programs.

Analytical problem solving.
Interpersonal communication.
Excellent writing ability.

RELATED TRAINING COURSES

Workshop on Spatial Statistics for Agricultural & Environmental Research
Practical Approaches to Riparian and Wetland Restoration
Natural Resources Measurements Camp (Forestry 200)
Tri-State Riparian Management and Monitoring
Urban Forestry (Forestry 140)
Forest Insect and Diseases

COMMUNITY ACTIVITIES

Currently Assistant Boy Scout Master
Past Boy Scout Master
Past Assistant Boy Scout Master
Past Boy Scout Unit Commissioner
New Mexico Youth Forestry Camp
Montana Forestry Youth Camp

AWARDS

Eagle Scout, Boy Scouts of America
USDI Bureau of Land Management Quality Work Award
USDA Forest Service Rocky Mountain Research Station-Albuquerque Quality Work Awards
USDA Forest Service Rocky Mountain Research Station-Albuquerque "Kids in the Woods Award"