

Quinney College of Natural Resources
Faculty and Staff Activities and Achievements
November 2012

Awards and Honors

Mike Conover, Department of Wildland Resources was recently elected Vice President of the Central Mountains and Plains Section of the Wildlife Society.

Johan du Toit, Department of Wildland Resources was granted a fellowship by the Netherlands Organization for Scientific Research in support of his sabbatical appointment as visiting professor in the Center for Evolutionary and Ecological Studies, Groningen University.

Patty Cramer, Department of Wildland Resources received The 2012 Mule Deer Foundation, Professional of the Year Award.

Publications

Patrick Belmont, Department of Watershed Sciences. 2012. Passalacqua, P., Belmont, P., Foufoula-Georgiou, E. (2012) Automatic geomorphic feature extraction from lidar in flat and engineered landscapes. *Water Resources Research*. 48: W03528. doi:10.1029/2011WR010958.

Patrick Belmont, Department of Watershed Sciences. 2012. Viparelli, E., Lauer, J.W., Belmont, P., Parker, G. (2012) A Numerical Model to Develop Long-term Sediment Budgets Using Isotopic Sediment Fingerprints. *Computers and Geosciences Special issue on Modeling for Environmental Change*. doi:10.1016/j.cageo.2011.10.003

Todd Crowl, Department of Watershed Sciences. 2012. Rivera, S., P. Martinez de Aguita, R.D. Ramsey and T.A. Crowl. 2012. Spatial modeling of tropical deforestation using socioeconomic and biophysical data. *Small Scale Forestry*. DOI 10.1007/s11842-012-9214-2

Todd Crowl, Department of Watershed Sciences. 2012. Garner, J., A.L. Porter, N.C. Newman and T.A. Crowl. 2012. Assessing Research Networks and Disciplinary Engagement Changes Induced by an NSF Program. *Journal of Research Evaluation*.

Todd Crowl, Department of Watershed Sciences. 2012. Choat, D., C. Prather, M. Michel, M. Barnes, D. Hoekman, C. Patrick, J. Ruegg and T.A. Crowl. 2012. Integrating theoretical components: A graphical model for graduate students and researchers. *BioScience* 62:594-602.

Todd Crowl, Department of Watershed Sciences. 2012. Porter, A.L., J. Garner and T.A. Crowl. 2012. The RCN (Research Coordination Network) experiment: Evidence of the relationship between funded interdisciplinary networking and scholarly impact. *BioScience* 62:282-288.

Wayne Wurtsbaugh, Department of Watershed Sciences. 2012. Lewis, W.M., Jr., W.A. Wurtsbaugh and H. Pearl. 2012. Rationale for control of anthropogenic nitrogen and phosphorus in inland waters. *Environmental Science and Technology* 45 (24): 10300-10305 DOI: 10.1021/es202401p.

Wayne Wurtsbaugh, Department of Watershed Sciences. 2012. Epstein, D.M., W.A. Wurtsbaugh, and M.A. Baker. 2012. Nitrogen partitioning and transport through a subalpine lake measured with an isotope tracer. *Limnology and Oceanography* 57(5): 1503-1516.

Peter Adler, Department of Wildland Resources. 2012. J. Anderson**, M. P. McClaran and P. B. Adler. Cover and density of semi-desert grassland plants in permanent quadrats mapped from 1915 to 1947. *Ecology* 93: 1492.

Peter Adler, Department of Wildland Resources. 2012. H. Owens, J. LaFantasie, and P. B. Adler. Mycorrhization rates of two grasses following alterations in moisture inputs in a southern mixed grass prairie. *Applied Soil Ecology* 60: 56-60.

Peter Adler, Department of Wildland Resources. 2012. Hsu, J. S., J. A. Powell, and P. B. Adler. Sensitivity of primary production to precipitation. *Global Change Biology* 18: 2246-2255.

Peter Adler, David Koons, Frank Howe, & Johan du Toit, Department of Wildland Resources. 2012. Koons, D. N., P. Terletzky, P. B. Adler, M. L. Wolfe, D. Ranglack, F. P. Howe, K. Hersey, W. Paskett, and J. du Toit. Climate and density-dependent drivers of American Bison reproductive success. *Journal of Mammology* 93: 475-481.

Peter Adler, Department of Wildland Resources. 2012. Yenni,* G., P. B. Adler and S. K. M. Ernest. Strong self-limitation promotes persistence of rare species. *Ecology* 93: 456-461.

Patricia Cramer, Department of Wildland Resources. 2012. Determining wildlife use of wildlife crossing structures under different scenarios. Final Report to Utah Department of Transportation, Salt Lake City, UT. 181 pages.

URL: <http://www.udot.utah.gov/main/uconowner.gf?n=10315521671291686>

Eric Gese & Lise Aubry, Department of Wildland Resources. 2012. Berg, N. D., E. M. Gese, J. R. Squires, and L. M. Aubry. Influence of forest structure on the abundance of snowshoe hares in western Wyoming. *Journal of Wildlife Management* 76:1480-1488.

Eric Gese, Julie Young, & John Shivik, Department of Wildland Resources. 2012. Mastro, L. L., E. M. Gese, J. K. Young, and J. A. Shivik. What do we know? A literature review of the eastern coyote. *Proceedings of the Wildlife Damage Management Conference* 14:129-131, plus addendum (180 pages).

Eric Gese, Department of Wildland Resources. 2012. Gese, E. M., P. S. Morey, and S. D. Gehrt. Influence of the urban matrix on space use of coyotes in the Chicago Metropolitan Area. *Journal of Ethology* 30:413-425.

Eric Gese, Department of Wildland Resources. 2012. Thompson, C. M., and E. M. Gese. Swift foxes and ideal free distribution: relative influence of vegetation and rodent prey base on swift fox survival, density, and home range size. *International Scholarly Research Network (ISRN) Zoology* 2012, 8 pages, doi:10.5402/2012/197356.

Eugene Schupp, Department of Wildland Resources. 2012. Schupp, E.W. The interplay between place-based research and ecological theory. (review of I. Billick and M.V. Price, eds. *The ecology of place: contributions of place-based research to ecological understanding*). *Ecology* 93: 690-691.

Eric Gese, Department of Wildland Resources. 2012. Seidler, R. G., and E. M. Gese. Territory fidelity, space use, and survival rates of wild coyotes following surgical sterilization. *Journal of Ethology* 30:345-354.

David Koons, Department of Wildland Resources. 2012. Péron, G., C.A. Nicolai, and D.N. Koons. Demographic response to perturbations: the role of compensatory density-dependence in a North American duck under variable harvest regulations and changing habitat. *Journal of Animal Ecology* 81:960-969.

David Koons, Department of Wildland Resources. 2012. Mattsson, B.J, M.C. Runge, J.H. Devries, G.S. Boomer, J.M. Eadie, D.A. Haukos, J. P. Fleskes, D.N. Koons, W.E. Thogmartin, and R.G. Clark. A modeling framework for integrated harvest and habitat management of North American waterfowl: case-study of northern pintail metapopulation dynamics. *Ecological Modelling* 225:146-158.

David Koons & Karen Beard, Department of Wildland Resources. 2012. Olson, C.A., K.H. Beard, D.N. Koons, and W.C. Pitt. Detection probabilities of two introduced frogs in Hawaii: implications for assessing non-native species distributions. *Biological Invasions* 14:889-900.

Lise Aubry & Eric Gese, Department of Wildland Resources. 2012. Berg N.D., Gese E.M., Squires J.R. and L.M. Aubry. Influence of forest structure on abundance of lynx prey species in western Wyoming. *Journal of Wildlife Management*, 76(7): 1480-1488

Karen Beard, Department of Wildland Resources. 2012. Pitt, W.C., K.H. Beard, and R.E. Doratt. Management of invasive coqui frog populations in Hawaii. *Outlooks on Pest Management*. 23(4): 166-169 (Invited Submission). August. DOI: 10.1564/23jun00.

Karen Beard, Department of Wildland Resources. 2012. Olson, C.A., K.H. Beard, and W.C. Pitt. Pacific Island invasive species: 8. *Eleutherodactylus planirostris*, the Greenhouse frog (Anura: Leptodactylidae). *Pacific Science*. (Invited Submission). 66(3):255-270.

Karen Beard, Department of Wildland Resources. 2012. Kulmatiski, A., K.H. Beard, J. Heavilin. Plant-soil feedbacks provide an alternative explanation for diversity-productivity relationships. *Proceedings of the Royal Society B*. 279, 3020–3026. doi: 10.1098/rspb.2012.0285

Karen Beard, Department of Wildland Resources. 2012. Bisrat, S. A., M. A. White, K. H. Beard, and D. R. Cutler. Predicting the distribution potential of an invasive Puerto Rican frog (*Eleutherodactylus coqui*) in Hawaii using remote sensing data. *Diversity and Distributions*. 18(7):648-660. DOI: 10.1111/j.1472-4642.2011.00867.x

Karen Beard, Department of Wildland Resources. 2012. Choi, R.T., and K.H. Beard. Coqui frog invasions change invertebrate communities in Hawaii. *Biological Invasions*. 14(5):939-948. DOI: 10.1007/s10530-011-0127-3

Highlighted in : Star Advertiser "Let's do what we can to limit impact of pest" by Christy Martin, January 18, 2012

Karen Beard, Department of Wildland Resources. 2012. Beard, K.H. and A. Kulmatiski. Introduction, establishment, and spread: 50 years of invasion ecology since Elton. Book review of David M. Richardson, editor. 2011. Fifty years of invasion ecology: the legacy of Charles Elton. Wiley-Blackwell, Oxford. 432 p. *Ecology*.93(2): 437-438.

Karen Mock, Department of Wildland Resources. 2012. O'Donnell, R.P. and Mock, K.E. Two frogs or one? A multi-marker approach to assessing the distinctiveness of genetic lineages in the northern leopard frog. *Conservation Genetics*, **13**, 1167-1182.

Karen Mock, Department of Wildland Resources. 2012. Samarasekera N, Bartell N, Lindgren S, Cooke J, Davis C, James P, Coltman D, Mock KE, Murray B. Spatial genetic structure of the mountain pine beetle (*Dendroctonus ponderosae*) outbreak in western Canada: historical patterns and contemporary dispersal. *Molecular Ecology*, **21**, 2931-2948.

Helga Van Miegroet, James Long, & Justin DeRose, Department of Wildland Resources. 2012. Moore, P.T., J. DeRose, J.N. Long, H. Van Miegroet. Using silviculture to influence carbon sequestration in southern Appalachian spruce-fir forests. *Forests (Open Access Journal)* **3**(2): 300-316 – Special issue: The Role of Forests for Carbon Capture and Storage. doi:10.3390/f3020300

Helga Van Miegroet, James Long, & Leila Shultz, Department of Wildland Resources. 2012. Kusbach, A., J.N. Long. H. Van Miegroet, and L.M. Shultz. Diagnostic species and fidelity concept in vegetation classification in the Rocky Mountains, northern Utah, USA. *Botany* **90**:1-16. doi:10.1139/B2012-033

Articles, Chapters, Books with Undergraduate and Graduate Co-Authors

Todd Crowl, Department of Watershed Sciences. 2012. Brokaw, N., T.A. Crowl, A.E. Lugo, W.H. McDowell, F.N. Scatena, R.B. Waide and M.R. Willig (eds.). 2012. *A Caribbean Forest Tapestry: The Multidimensional Nature of Disturbance and Response*. Oxford University Press, Oxford, U.K

Todd Crowl, Department of Watershed Sciences. 2012. Lugo, A.E., R.B. Waide, M.R. Willig, T.A. Crowl, F.N. Scatena, J.Thompson, W.L. Silver, W.H. McDowell and N. Brokaw. 2012. Ecological Paradigms for the Tropics, in: *A Caribbean Forest Tapestry*, N. Brokaw, T.A. Crowl, A.E. Lugo, W.H. McDowell, F.N. Scatena, R.B. Waide and M.R. Willig, eds. Oxford University Press, Oxford, U.K.

Todd Crowl, Department of Watershed Sciences. 2012. W.H. McDowell, T.A. Crowl and 22 authors. 2012. Geographic and Ecological Setting of the Luquillo Mountains, in: *A Caribbean Forest*, N. Brokaw, T.A. Crowl, A.E. Lugo, W.H. McDowell, F.N. Scatena, R.B. Waide and M.R. Willig, eds. Oxford University Press, Oxford, U.K.

Todd Crowl, Department of Watershed Sciences. 2012. Brokaw, N. T.A. Crowl and 23 authors. 2012. Response to Disturbance, in: *A Caribbean Forest Tapestry*, N. Brokaw, T.A. Crowl, A.E. Lugo, W.H. McDowell, F.N. Scatena, R.B. Waide and M.R. Willig, eds. Oxford University Press, Oxford, U.K.

Todd Crowl, Department of Watershed Sciences. 2012. Crowl, T.A. and 11 authors. 2012, When and Where Biota Matter, in: *A Caribbean Forest Tapestry*, N. Brokaw, T.A. Crowl, A.E. Lugo, W.H. McDowell, F.N. Scatena, R.B. Waide and M.R. Willig, eds. Oxford University Press, Oxford, U.K.

Presentations

Karin Kettenring, Department of Watershed Sciences. 2012. Alminagorta, O.*, D.E. Rosenberg, and K.M. Kettenring. 2012. System modeling to improve the hydro-ecological performance of diked wetlands. American Geophysical Union meeting, San Francisco, CA.

Karin Kettenring, Department of Watershed Sciences. 2012. Long, A.L.*, K.M. Kettenring, R. Toth, C.M.U. Neale, and C. Hawkins. 2012. Predicting invasion and prioritizing control of *Phragmites australis* in Great Salt Lake wetlands. USU Spring Run-off Conference.

Karin Kettenring, Department of Watershed Sciences. 2012. Long, A. L.*, Kettenring, K., and Neale. C. 2012. Mapping *Phragmites australis* in Great Salt Lake Wetlands. Society of Wetland Scientists, Pacific Northwest Chapter, Boise, ID.

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M., C. Reinhardt Adams, K.L. Mercer, and J. Hines. 2012. Integrating recent advances in genetic diversity – ecosystem function research to improve ecological restoration. 4th International EcoSummit, Columbus, OH.⁺

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M., E.L.G. Hazelton*, H.M. Baron*, S.K. Gallagher, M.K. McCormick, M. Sievers*, and D.F. Whigham. 2012. *Phragmites australis* invasion into disturbances in Chesapeake Bay tidal wetlands: dispersal, colonization, fitness, and restoration. Society of Wetland Scientists and INTECOL, Orlando, FL.⁺

Karin Kettenring, Department of Watershed Sciences. 2012. Rohal, C.B.*, K.M. Kettenring, and E.L.G. Hazelton*. 2012. What are effective treatments for controlling small, dense patches of *Phragmites australis* in Great Salt Lake wetlands? Aquatic Plant Management Society meeting. Award for 2nd place student poster.

Karin Kettenring, Department of Watershed Sciences. 2012. Santos Vanderlinder, M.*, C.M.U. Neale, D. Rosenberg, K.M. Kettenring. 2012. Classifying wetland vegetation with remote sensing techniques at the Bear River Migratory Bird Refuge, Utah. National Conference on Undergraduate Research, Ogden, UT.

Wayne Wurtsbaugh, Department of Watershed Sciences. 2012. FISH DIVERSITY IN THE GREAT SALT LAKE. Hannah Moore and Wayne A. Wurtsbaugh. 2012 Great Salt Lake Issues Forum. Salt Lake City (June 2012).

Wayne Wurtsbaugh, Department of Watershed Sciences. 2012. MERCURY IN THE BRINE FLY FOOD WEB OF THE GREAT SALT LAKE. Great Salt Lake Issues Forum. Salt Lake City (June 2012; invited).

Wayne Wurtsbaugh, Department of Watershed Sciences. 2012. THE HISTORY OF METALS CONTAMINATION IN THE GREAT SALT LAKE, UTAH, REVEALED THROUGH A PALEOLIMNOLOGICAL ANALYSIS. Great Salt Lake Issues Forum. Salt Lake City (June 2012; invited).

Wayne Wurtsbaugh, Department of Watershed Sciences. 2012. NITROGEN CONTROL OF ALGAL PRODUCTION IN LINKED FRESHWATER-SALINE ECOSYSTEMS: IS IT WORTH

IT? Wayne Wurtsbaugh, Hans. W. Paerl & William M. Lewis, Jr. Assoc. for Soc. Limnology and Oceanography, Otsu, Japan (July 2012; invited Tutorial Talk).

Helga Van Miegroet, Department of Wildland Resources. Van Miegroet, H., Gruselle, M.-C., J. Bauhus, A. Jacobson, and M. Román-Dobarco. Changes in storage, stability and spectroscopic properties of soil organic carbon along montane aspen-conifer ecotones in Utah, USA. Poster presented at the 7th International BIOGEOMON conference, Northport, Maine, July 15-20, 2012.

Karen Beard, Department of Wildland Resources. Beard, K.H., A. Kulmatiski, M. Mazzacavallo. The two-layer hypothesis is dead: long live the two-layer hypothesis. Ecological Society of America, Portland, Oregon, August 2012.

Karen Beard, Department of Wildland Resources. Kulmatiski, A., K.H. Beard, J. Heavilin. Plant-soil feedbacks provide an additional explanation for diversity-productivity relationships. Ecological Society of America, Portland, Oregon, August 2012.

Karen Beard, Department of Wildland Resources. Beard, K.H., E.M. O'Neil*, and M.E. Pfrender. Invited Symposium: Founder effects haven't quieted them down: the coqui frog invasion in Hawaii. Insights from invasions: using exotic amphibians and reptiles to study ecological and evolutionary processes. 7th World Congress of Herpetology, which is meeting jointly with ASIH, HL, and SSAR in Vancouver, Canada, August 2012.

Eric Gese, Department of Wildland Resources. 2012. Dempsey, S. J., and E. M. Gese. Research update: evaluation of kit fox survey methods and development of an occupancy model for kit foxes. 3rd Annual meeting, DoD Integrated Natural Resource Management Plan, Salt Lake City, Utah.

Eric Gese, Department of Wildland Resources. 2012. Kluever, B. M., and E. M. Gese. Research update: water manipulation for kit fox and coyote project on the Dugway Proving Ground. 3rd Annual meeting, DoD Integrated Natural Resource Management Plan, Salt Lake City, Utah.

Peter Adler, Department of Wildland Resources. 2012. Adler, P. B., A. Compagnoni, J. Hsu, R. Salguero-Gomez, J. Mukherjee, A. R. Kleinhesselink. Can functional traits explain variation in plant life history strategies? Ecological Society of America, Portland, OR.

Peter Adler, Department of Wildland Resources. 2012. Chu, C., K. M. Havstad, D. Peters, and P. B. Adler. Comparison of lifespan and survival for 114 herbaceous perennials across five ecosystems in the western US. Ecological Society of America, Portland, OR.

Peter Adler, Department of Wildland Resources. 2012. Compagnoni, A., and P. B. Adler. Warming and reduced snow cover improve cheatgrass (*Bromus tectorum*) performance in the Intermountain West. Ecological Society of America, Portland, OR.

Peter Adler, Department of Wildland Resources. 2012. Snyder, R. E., P. B. Adler, and S. P. Ellner. Selective pressure for increased demographic variability in a perennial plant community. Ecological Society of America, Portland, OR.

Peter Adler, Department of Wildland Resources. Seminar presented at the Tyson Research Center, Washington University, July 2012.

Eugene Schupp, Department of Wildland Resources. Shaff, S.E., D.A. Pyke, A.I. Lindgren, E.W. Schupp, J. Burnham, P.S. Doescher, and J.C. Chambers. Inter-perennial gaps may indicate invisibility of sagebrush systems. 97th Annual Meeting of the Ecological Society of America, Portland, OR, August 5-10, 2012.

Eugene Schupp, Department of Wildland Resources. Burnham, J., E.W. Schupp, S.E. Shaff, D.A. Pyke, A.I. Lindgren, J.C. Chambers, and P.S. Doescher. Effects of tebuthiuron and imazapic on sagebrush and herbaceous understory. 97th Annual Meeting of the Ecological Society of America, Portland, OR, August 5-10, 2012.

Eugene Schupp, Department of Wildland Resources. Lewis, M.B., E.W. Schupp, and T.A. Monaco. Dust and proximity to unpaved roads correlated with decreased reproduction of an endangered Utah endemic shrub. 97th Annual Meeting of the Ecological Society of America, Portland, OR, August 5-10, 2012.

Eugene Schupp, Department of Wildland Resources. Reinwald, A.D., J.R. Summerhays, S.M. Ostoja, and M.L. Brooks. Evaluating restoration techniques using native perennial grasses in cheatgrass (*Bromus tectorum* L.) invaded sagebrush-steppe ecosystems. 97th Annual Meeting of the Ecological Society of America, Portland, OR, August 5-10, 2012.

Eugene Schupp, Department of Wildland Resources. Burnham, J., E.W. Schupp, S.E. Shaff, D.A. Pyke, A.I. Lindgren, J.C. Chambers, and P.S. Doescher. Effects of tebuthiuron and imazapic on sagebrush and herbaceous understory. 17th Wildland Shrub Symposium, Las Cruces, NM, May 22-24, 2012.

Michael Conover, Department of Wildland Resources. Roberts, A.J. and M.R. Conover. Origin of Waterfowl Wintering on Great Salt Lake, UT: A Dual Methods Approach. North American Ornithological Conference, Vancouver, British Columbia, Canada, August 2012.

Contracts and Grants

Patrick Belmont, Department of Watershed Sciences. 2012. Climate and Human Dynamics as Amplifiers of Natural Change: A Framework for Vulnerability Assessment and Mitigation Planning. 2012: 5 yrs, Funded by National Science Foundation Water, Sustainability, and Climate Program (\$4,372,127 with \$470,000 for P. Belmont) PI: E. Foufoula-Georgiou, Co-PIs: P. Belmont, C. Kling, S. Rabotyagov, P.R. Wilcock, G. Parker, G. Roehrig, K.B. Gran, J. C. Finlay, P. Kumar)

Patrick Belmont, Department of Watershed Sciences. 2012. An integrated sediment budget for the Root River, southeastern Minnesota. 2012: 3 yrs, Funded by Minnesota Department of Agriculture. (\$227,658 with \$203,871 for Belmont, PIs: P. Belmont, T. Dogwiler)

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M. The effects of wetland water management on wetland condition. Utah Geological Survey via EPA Wetland Program Development Grant. (\$56,861) 2012-2013.

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M. Assessing approaches to manage *Phragmites* in the Great Salt Lake. Utah Division of Forestry, Fire & State Lands (\$76,990) 2011-2013.

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M. Assessment of wetland vegetation in the Willard Spur, Great Salt Lake, UT. Utah Division of Water Quality (\$24,380) 2012-2013.

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M. Improving control of *Phragmites* and restoring native wetland vegetation in Great Salt Lake wetlands. Kennecott Utah Copper Charitable Foundation (\$50,000) 2012-2014.

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M. Mapping wetland vegetation in the Great Salt Lake ecosystem. Utah Division of Water Quality Non-point source funding (\$40,531) 2012-2013.

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M. Multi-agency efforts for invasive species control in Great Salt Lake wetlands: Herbicide, mowing, burning, and water management to control *Phragmites australis*. Utah Wetlands Foundation (\$18,000) 2011-2013.

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M. Multi-agency efforts for invasive species control in Great Salt Lake wetlands: Inventory of *Phragmites australis* invasion, implementing control treatments, and monitoring control effectiveness. U.S. Fish and Wildlife Service (\$11,999) 2012-2013.

Karin Kettenring, Department of Watershed Sciences. 2012. Kettenring, K.M. Using remote sensing to assess *Phragmites* cover in Great Salt Lake wetlands. Utah Division of Water Quality via EPA Wetlands Program Development Grant. (\$67,414) 2012-2014.

Karin Kettenring, Department of Watershed Sciences. 2012. Jordan, T., D. Breitburg, C. Gallegos, E. Johnson, K.M. Kettenring, X. Li, M. McCormick, P. Neale, G. Reidel, D. Weller, D. Whigham, M. Erwin, L. Karrh, E. Koch, R. Seitz, T. Targett, and D. Wardrop. Predicting impacts of stressors at the land water interface. National Oceanic and Atmospheric Association (\$253,005) 2009-2014.

Karin Kettenring, Department of Watershed Sciences. 2012. Rupp, L., K.M. Kettenring, R. Whitesides, and J. Goodspeed. *Phragmites australis* control at the rural-urban interface. Utah Department of Agriculture (\$14,800) 2012-2013.

Karin Kettenring, Department of Watershed Sciences. 2012. Triplett, L.D., K.M. Kettenring, and M. Tal. RUI-Collaborative Research: Reduction in riverine silica transport due to human-induced vegetation change to riparian vegetation. National Science Foundation (\$21,748) 2012-2014.

Wayne Wurtsbaugh, Department of Watershed Sciences. 2012. Relations between mercury, nutrients and plankton along the Farmington Bay-Gilbert Bay salinity gradient in the Great Salt Lake. Utah Division of Forestry, Fire and State Lands. (1 year; \$51,278).

Wayne Wurtsbaugh, Department of Watershed Sciences. 2012. Factors affecting the spatial and temporal variability of *Nodularia* blooms in Farming Bay (Great Salt Lake). Central Davis County Sewage Improvement District. (1 year; \$14,974).

Todd Crowl, Department of Watershed Sciences. 2012. 2012-2017, National Science Foundation EPSCoR Track I; iUTAH - \$20,000,000.

Todd Crowl, Department of Watershed Sciences. 2012. 2012, Central Utah Project: Utah Lake Restoration Program - \$278,000.

Todd Crowl, Department of Watershed Sciences. 2012. 2012-2014, National Science Foundation, Long-Term-Ecological-Research: Luquillo Experimental forest (\$90,000); Total NSF award – \$2.8 million.

Todd Crowl, Department of Watershed Sciences. 2012. 2012, National Science Foundation: NSF EPSCoR Drupal Content Management System Collaboration - \$180,000.