Beth A. Newingham

University of Idaho
Forest, Rangeland, and Fire Sciences
P.O. Box 441133, Moscow, ID, 83844 USA
(702) 994-4077; bethnewingham@gmail.com

Education:

Ph.D. in Organismal Biology and Ecology
University of Montana *May 2002*
Advisor: Dr. Ragan Callaway
Dissertation: *Insect herbivory and defoliation on* Centaurea *species: the roles of neighbors, allelopathy, and arbuscular mycorrhizae*
B.S. in Biological Sciences Minors: Chemistry and German
University of Nebraska-Lincoln *December 1994*

Research Interests:

Plant community ecology; plant-animal interactions; plant-microbe interactions; plant-insect interactions; plant ecophysiology; insect community ecology; soil ecology; aridlands ecology; ecosystem ecology; biogeochemistry; fire ecology; plant invasions; global change; restoration ecology.

Professional Experience:

***Assistant Professor*, University of Idaho,** *July 2008 to present*
Global change, fire ecology, invasive species, and restoration ecology of dryland ecosystems.

***Research Assistant Faculty*, University of Nevada-Las Vegas,** *July 2006 to July 2008*
Research on the effects of global change, invasive plants, and fire on plant and insect communities.

***Post Doctoral Scholar* for Dr. Stan Smith, University of Nevada-Las Vegas,** *February 2004 to June 2006*
Examining effects of global change on plant productivity, ecosystem carbon balance, insect communities, and plant-animal interactions in the Mojave Desert.

***Post Doctoral Research Associate* for Dr. Jayne Belnap, US Geological Survey, Biological Resources Division, Canyonlands Field Station,** *July 2002 to February 2004*
Investigated roles of soil chemistry and fire in *Bromus tectorum* invasion in southern Utah; developed protocols for inventory and monitoring invasive plants in the Northern Colorado Plateau Network Parks (National Park Service).

***Post Doctoral Research Associate* for Dr. Anna Sala, University of Montana,** *May 2002 to July 2002*
Determined physiological responses of *Pinus ponderosa* and *Larix occidentalis* to fire and thinning in Montana.

***Research Assistant/Post Doctoral Research Associate* for Dr. Ragan Callaway, University of Montana,** *Fall 2000 to July 2002*
Examined the effects of neighboring plants, allelopathy and arbuscular mycorrhizae on the response of the invasive plant, *Centaurea maculosa*, to herbivory.

***Visiting Scientist*, Universite Joseph Fourier, Grenoble, France**, *March 1999 to August 1999*
Research on the effects of herbivory on French and North American *Centaurea* species funded by NSF.

***Biological Field Technician,* University of New Mexico,** *September 1996 to November 1996*
Long-term data collection for plants and small mammals at the Sevilleta LTER (Long Term Ecological Research) site in New Mexico.

***Field Assistant* for Richard Alward, Colorado State University,** *May 1996 to September 1996*
Field research on native grassland vegetation responses to climate change and insect herbivory at the Shortgrass Steppe LTER site in northeastern Colorado.

***Field & Lab Technician* for Dr. Anthony Joern, University of Nebraska-Lincoln,** *May 1994 to October 1995*
Assisted in research on community and population ecology of grasshoppers at the Arapaho Sandhills Prairie in western Nebraska.

Teaching Experience:

Faculty member in the following degree programs:

Ecology and Conservation Biology, UI, *Fall 2008-present*
Rangeland Ecology and Management, UI, *Fall 2008-present*
Fire Ecology and Management, UI, *Fall 2008-present*
Environmental Science, UI, *Fall 2008-present*

Program director:

UNLV GS-0401 Education Program for Fire Managers, UNLV, *May 2006 to July 2008*
Responsible for developing biology program for fire managers, including curriculum development, hiring instructors and teaching assistants, instructor preparation, and student recruitment. Students were from the Bureau of Land Management, US Forest Service, US Fish and Wildlife Service, National Park Service and Bureau of Indian Affairs.

Instructor:

Undergraduate courses
REM 357 Ecological Monitoring and Analysis, UI, *Fall 2009, 2010, 2011, 2012*
REM 440 Wildland Restoration Ecology, UI, *Spring 2010, 2011, 2012, 2013*
BIOL 423 Ecosystem Management, UNLV, *March 2008*
BIOL 441 Field Ecology, UNLV, *April 2006, November 2006, October 2007*
BIOL 444 Plant Ecology, UNLV, *February 2006, September 2006, September 2007*
BIOL 341 Principles of Ecology, UNLV, *September 2005*
Graduate courses
Climate Change Indicators, UI, *Spring 2012*
Interdisciplinary Climate Change, UI, *Spring 2012*
Exploring Biogeosciences, UI, *Spring 2011*
Trends in Ecology: Global Change, UI, *Spring 2011*

Guest lecturer:

Current Literature in Forest Ecology/Tree Physiology seminar, UI, *Fall 2010*
Integrated Pest Management/Pesticide Application, Bureau of Land Management, *April 2007*
Ecological Plant Physiology, UNLV, *Spring 2005*

Teaching assistant:

As graduate student
Rocky Mountain Flora Lab, UM, *Spring 2000*
Insect Biology Lab, UM, *Fall 1998 & 1999*
General Botany Lab, UM, *Spring 1998*
Human Anatomy & Physiology Lab, UM, *Fall 1997*
As undergraduate student
Introductory Biology, UNL, *Spring 1995*
Principles of Ecology Lab, UNL, *Fall 1994*

Fire Experience:

Wildland Firefighter Type 2 qualified
Resource Advisor qualified
Red Card certified (2006-2011)

Training:
S-130/190 – Firefighter Training/Introduction to Wildland Fire Behavior
L-180 – Human Factors on the Fireline
South Canyon Staff Ride, Glenwood Springs, Colorado, *May 2007*
Fire Incident Resource Advisor Training, Lake Mead NRA, *March 2008*
Experience:
Firefighter Type 2 on Type IV engine, Idaho Falls District, *Summer 2007*
Interagency Resource Representative, Region 5, South Ops, *September 2006*

Students Advised/Mentored:

Undergraduates advised:

Annually advise ~12 students from Ecology and Conservation Biology, Rangeland Ecology and Management, Fire Ecology and Management, and Forest Resources programs, UI

Undergraduates mentored:

Previous to UI: Gregoire Boquien, Adam Collins, Cara Evangelista, Christian Richey, Jessica Briggs (funded by NSF-Research Experiences for Undergraduates), Moiz Dawood

UI undergraduate theses: 2010 (Stefani Patten); 2011 (Shawn Taylor, Brian Howard, Christina Sullivan); 2012 (Heather Watson)

Major professor:

Benjamin Wissinger - M.S. Natural Resources 2009 – 2012.
Elise Suronen – M.S. Natural Resources 2010 – 2012.
Alex Suazo – Ph.D. Natural Resources 2011 – present.
Chris Bowman-Prideaux – Ph.D. Natural Resources 2012 – present.

Graduate student committees:

Heidi Schmalz – M.S. Environmental Science 2009 – 2011.
Matt Bruce – M.S. Conservation Social Science 2010 – 2012.
Vincent Jansen – M.S. Environmental Science 2011 – present.

Languages: English, French, German

International Travel: Nine European countries, Republic of Georgia, Azerbaijan, Botswana, Zimbabwe

Honors/Scholarships:

Teaching and Learning Center Fellow, UNLV, *2007*
Outstanding Undergraduate Achievement recognized by Graduate Women in Science, *1994*
Hughes Biotechnology Research Institute Scholarship, *1993*

Professional Service:

Manuscript Reviewer for Biological Invasions, Ecology, Ecological Applications, Global Change Biology, Journal of Vegetation Science, Plant and Soil, Plant Ecology, Trees: Structure and Function, and Southwestern Naturalist

Grant Proposal Reviewer for National Science Foundation

Committees/Representatives:

Rangeland Center, UI*, 2011 – present*
College of Natural Resources Awards Committee, UI, *Spring 2010 – present*
Faculty Representative for 'Get Rooted' with the UI Sustainability Center, *Fall 2010 - present*
Forest, Rangeland, and Fire Sciences Tenure and Promotion Committee, *Fall 2012*
Geospatial Fire Faculty Search Committee, UI, *Fall 2011/Spring 2012*
College of Natural Resources Committee on Research Professors, UI, *Fall 2010*
College of Natural Resources Graduate Task Force, UI, *Spring 2009*
University of Idaho Request for Innovation, UI, *Spring 2009*
Fire Faculty Search Committee, UI, *Fall 2008*
College of Natural Resources Space Committee, UI, *Fall 2008 – present*
Faculty Search Committee, UM, *Spring 2001*
Graduate Student Representative for Organismal Biology and Ecology/Graduate Student Organization, UM, *Spring 2000, Fall 2001*
Graduate Student Representative for Organismal Biology and Ecology faculty meetings, UM, *Fall 1999*

Outreach:

Murphy Complex Fire tour with Sage and Sharp-tailed Grouse workshop, Twin Falls, ID, *2010*
"Murphy Complex and More" tour with BLM, Twin Falls, ID, *2009*

Dust mitigation tour with UT BLM on the Milford Flat Fire, Fillmore, UT, *2009*
Recruitment of agency employees into REM 440 Wildland Restoration Ecology, *2009*
Idaho Wildland Fire conference, *2008*
BLM Healthy Lands Initiative field tour, *2008*
BLM Sagebrush Identification workshop, *2008*
Boise State University Mycology field trip, *2008*
Rangeland and Riparian Habitat Assessment field trip, *2008*
Murphy Complex Fire tour, Twin Falls, ID, *2008*

Memberships:

Ecological Society of America
American Geophysical Union
Society for Ecological Restoration
Society for Rangeland Management
Association for Fire Ecology
Idaho Chapter of The Wildlife Society

Professional Development:

Teaching/Advising

NSF EPSCoR Climate Education Conference, Las Vegas, NV, *2010*
Undergraduate Advising Symposium, UI, *2009*
Teaching and Learning Center workshops (11 attended), UNLV, *2006-2007*
Learning & Teaching Styles; Teaching Adult & Non-Traditional Students; Is There Life Besides Multiple Choice Quizzes? — Testing Options; Grades - To Curve or Not to Curve?; Research Assignment Design; Writing Assignments Across the Disciplines; Plagiarism: Deterring It; Time Management for Faculty; Teaching/Faculty Portfolios; Teaching with PowerPoint — Beyond the Basics; Web Page Publishing

Scholarship

Scholarly Writing Retreat, Lewis and Clark College, *2012*
NSF Advancing Towards Professorship in Biology, Ecology and Earth System Sciences, *2012*
NSF PAID Grant Women Faculty Workshop, *2011*
Developing a Successful Native Plant Program, Ontario, OR, *2009*
Biological Soil Crusts: Ecology and Management, BLM, Las Vegas, NV, *2006*
Restoration of Sagebrush Ecosystems, BLM, Phoenix, AZ, *2005*

Oral and Poster Presentations (* denotes graduate student ;** denotes undergraduate student):

Bruce, M.C., B.A. Newingham, C.C. Harris, and E.E Krumpe. 2013. Opinions towards using volunteers in ecological restoration: A survey of federal land managers. Society for Ecological Restoration World Conference. Madison, WI.

Klos, K.*, J .Abatzoglou, J. Blades*, M. Clark*, C. Currie*, M. Dodd*, S. Eigenbrode, T. Hall, A. Haruch*, J. Hicke, P. Higuera, J. Holbrook*, V. Jansen*, K. Kemp*, A. Lamar*, A. Lankford*, T. Link, T. Magney*, A. Meddens*, L. Mitchell*, B. Moore*, P. Morgan, B. Newingham, R. Niemeyer*, B. Soderquist*, A. Suazo*, C. Teston, K. Vierling, V. Walden, and C. Walsh*. 2012. Indicators of Climate Change in Idaho: The intersection of biophysical change with social perception across a diverse landscape. Pacific Northwest Climate Conference, Boise, Idaho.

Bauer, E.A.**, A.A. Suazo*, and B.A. Newingham. 2012. Removal of natives seeds after wildfire in sagebrush habitat. 5th International Fire Ecology and Management Congress, Portland, OR.

Suronen, E.F. * and B.A. Newingham. 2012. Evaluating thinning and prescribed fire as habitat restoration for an endemic threatened species. Annual Meeting of the Ecological Society of America, Portland, OR.

Newingham, B.A., R.S. Nowak, C.H. Vanier, and S.D. Smith. 2012. Standing crop of aboveground and belowground biomass are not significantly different after ten years of elevated CO_2 in the Mojave Desert. Terrestrial Ecosystem Science Department of Energy meeting. Washington, DC.

Fay, P., W. Polley, J. Morgan, D. LeCain, B. Newingham, R. Nowak, and S. Smith. 2012. Atmospheric CO_2 effects on productivity: Feedbacks from soil moisture and species change in mesic, semi-arid, and arid systems. European Geoscience Union General Assembly, Vienna, Austria.

Sullivan, C.A.**, E.S. Suronen*, and B.A. Newingham. 2012. Northern Idaho ground squirrel microhabitat preference in response to prescribed burns. Idaho Chapter of the Wildlife Society. Boise, ID.

Limberger, A.J.**, C.A. Sullivan**, E.S. Suronen*, and B.A. Newingham. 2012. Small-scale habitat use by the north Idaho ground squirrel, *Urocitellus brunneus brunneus*. Idaho Chapter of the Wildlife Society. Boise, ID.

Suronen, E.F. * and B.A. Newingham. 2012. Northern Idaho ground squirrel habitat restoration: Insights into treatment effects. Idaho Chapter of the Wildlife Society. Boise, ID.

Ganguli, A.C., B.A. Newingham, and N.L. Shaw. 2012. Wildfire, weeds, and seeds: Improving rangeland rehabilitation efforts in the Great Basin. NDSU Environmental and Conservation Sciences Greebag Seminar Series, Fargo, ND.

Ganguli, A.C. ,B.A. Newingham., and B. Orr. 2012. Innovations in teaching using technology. Society for Range Management Annual Meeting, Spokane, WA.

Ganguli, A.C. and B.A. Newingham. 2012. Seed drilling effects on soil infiltration properties in the sagebrush steppe after wildfire. Society for Range Management Annual Meeting, Spokane, WA.

Newingham, B.A. and A.C. Ganguli. 2012. Evaluating post-fire seeding techniques on soil erosion in the Great Basin. Society for Range Management Annual Meeting, Spokane, WA.

Sullivan, C.A.**, E.S. Suronen, and B.A. Newingham. 2012. Microhabitat use by northern Idaho ground squirrels in response to prescribed fire. Society for Range Management Annual Meeting, Spokane, WA.

Suronen, E.F. * and B.A. Newingham. 2012. Evaluating prescribed fire effects on wildlife habitat used as a restoration tool. Society for Range Management Annual Meeting, Spokane, WA.

Taylor, S.D.** and B.A. Newingham. 2012. Influences of soil and spatial properties on *Bromus tectorum* distribution after fire. Society for Range Management Annual Meeting, Spokane, WA.

Wissinger, B.D. * and B.A. Newingham. 2012. Atmospheric nitrogen deposition affects harvester ants in the Colorado Desert, California. Society for Range Management Annual Meeting, Spokane, WA.

Howard, B.K.** and B.A. Newingham. 2012. Plant community responses to fire along an elevational gradient in a central Idaho wilderness. Society for Range Management Annual Meeting, Spokane, WA.

Evans, R.D., A. Koyama, D. Sonderegger, D. Charlet, B.A. Newingham, L. Fenstermaker, K. Ogle, S.D Smith, and R. Nowak. 2011. Whole-ecosystem exposure to elevated carbon dioxide increases total ecosystem carbon and nitrogen in the Mojave Desert. American Geophysical Union Fall Meeting, San Francisco, CA.

Newingham, B.A., C.H. Vanier, T.N. Charlet, S.F. Zitzer, and S.D Smith. 2011. Aboveground production does not increase after ten years of elevated CO_2 in the Mojave Desert. American Geophysical Union Fall Meeting, San Francisco, CA.

Wissinger, B.D. *, M.D. Bell*, and B.A. Newingham. 2011. Nitrogen and carbon dynamics across trophic levels along an atmospheric nitrogen deposition gradient. American Geophysical Union Fall Meeting, San Francisco, CA.

Kavanagh, K., A. Davis, P. Gessler, H. Hess, Z. Holden, T. Link, B. Newingham, A. Smith and P. Robinson. 2011. Development of a smart 3-D wireless sensor network for terrain-climate research in remote mountainous environments. American Geophysical Union Fall Meeting, San Francisco, CA.

Suronen, E.F. * and B.A. Newingham. 2011. Restoring a threatened species' habitat in ponderosa pine forests by thinning and burning. Society of American Foresters, Honolulu, Hawaii.

Newingham, B.A. and A.C. Ganguli. 2011. Comparing the effects of post-fire seeding techniques on soil erosion in a dryland ecosystem. Association for Fire Ecology Interior West Conferences. Snowbird, UT.

Newingham, B.A. and A.C. Ganguli. 2011. Soil responses to restoration seeding techniques. Intermountain Native Plant Summit. Boise, ID. *Invited speaker*.

Wissinger, B., * M.D. Bell, * and B.A. Newingham. 2011. Harvester ant responses to atmospheric nitrogen deposition in southern California deserts. Ecological Society of America Annual Meeting. Austin, TX.

Suronen, E.F. * and B.A. Newingham. 2011. The effects of prescribed thinning and burning on Northern Idaho Ground Squirrel habitat. Idaho Chapter of the Wildlife Society. Idaho Falls, ID.

Newingham, B.A., T.N. Charlet, S.F. Zitzer and S.D. Smith. 2010. Are deserts different? Perennial plant responses to ten years of elevated CO_2 in the Mojave Desert. Ecological Society of America Annual Meeting. Pittsburgh, PA.

Newingham, B.A., C.H. Vanier, T.N. Charlet, and S.D. Smith. 2010. Global change effects on Mojave Desert perennial plants: summer monsoons, nitrogen deposition, and soil disturbance. USGS Workshop on: Natural Resource Needs Related to Climate Change In the Great Basin and Mojave Desert: Research, Adaptation, Mitigation. Las Vegas, NV.

Wissinger, B., * A.C. Ganguli, and B.A. Newingham. 2010. Plant nutrient availability following wildfire and restoration practices in a sagebrush community in northwestern Utah. Ecological Society of America Annual Meeting. Pittsburgh, PA.

Newingham, B.A., C.H. Vanier, T.N. Charlet, and S.D. Smith. 2009. Global change effects on annual growth and resulting herbivory on a Mojave Desert shrub, *Larrea tridentata*. Annual Meeting of the Ecological Society of America, Alburquerque, NM.

Fenstermaker, L.F. , B.A. Newingham, S.D. Smith and T.N. Charlet. 2009. Spectral assessment of Mojave global change treatment effects. Annual Meeting of the Ecological Society of America, Alburquerque, NM.*

Newingham, B.A., A.C. Ganguli, and N.L. Shaw. 2009. Comparing the effects of fire and restoration drilling on soil properties in the Great Basin. Great Basin Native Plant Selection and Increase Project meeting. Boise, ID.

Fenstermaker, L.F. , J.A. Arnone, G. Wohlfahrt, S.D. Smith, B.A. Newingham, and R.L. Jasoni. 2009. Carbon sequestration and climate change in the Mojave Desert. Climate Change and the California Desert Conference. Joshua Tree, CA.

Newingham, B.A. and S.D. Smith. 2007. Thunderstorms, SUVs and ATVs: what do they mean for Mojave Desert perennials? Annual Meeting of the Ecological Society of America, San Jose, CA.

Newingham, B.A., T.N. Charlet, D.C. Housman and S.D. Smith. 2006. Response of aboveground net primary production to elevated CO_2 in a Mojave Desert ecosystem. Annual Meeting of the Ecological Society of America, Memphis, TN.

Briggs J.R.**, Jin V.L., Newingham B., Evans R.D. 2006. Effects of elevated atmospheric CO2 on trophic interactions in an intact Mojave Desert ecosystem. 2nd Annual Palouse Behavior, Ecology & Evolution Research Symposium and Washington State University's College of Sciences Undergraduate Research Poster Competition. Pullman, Washington.

Newingham, B.A., A. deSoyza and S.D. Smith. 2005. Linking changes in insect abundance with plant productivity in response to increased precipitation, nitrogen deposition and CO_2 in the Mojave Desert. Annual Meeting of the Ecological Society of America, Montreal, Quebec.

Newingham, B.A., A. deSoyza and S.D. Smith. 2004. Effects of elevated CO_2, enhanced summer rainfall, and nitrogen on productivity of the perennial grass, *Pleuraphis rigida*. Mojave Desert Science Symposium, Redlands, CA.

Newingham, B.A., R.L. Sanford Jr., and J. Belnap. 2004. Burning soil alters soil chemistry and subsequently affects the invasive annual grass, *Bromus tectorum*. Annual Meeting of the Ecological Society of America, Portland, OR.

Smith, S.D., N. Sikula, T. Charlet, B.A. Newingham and D.H. Barker. 2004. Effects of simulated global change scenarios on growth and productivity in the evergreen *Larrea tridentata.* Annual Meeting of the Ecological Society of America, Portland, OR.

Newingham, B.A., J.M. Vivanco, H. BassiriRad, W. Good, and R.M. Callaway. 2003. Root herbivory affects nitrogen uptake and secondary chemical production in the invasive plant, *Centaurea maculosa*. Annual Meeting of the Ecological Society of America, Savannah, GA.

Newingham, B.A. 2002. Soil fungi affect the compensatory response of *Centaurea maculosa* to shoot and root herbivory. Annual Meeting of the Ecological Society of America, Tucson, AZ.

Newingham, B.A. 2001. Effects of defoliation on the invasive species, *Centaurea maculosa*: neighbors, allelopathy, compensatory growth and mycorrhizae. Annual Meeting of the Ecological Society of America, Madison, WI.

Newingham, B.A., C.A. Zabinski, and R.M. Callaway. 2001. Are biological controls effective against knapweed?: Neighboring plant determines compensatory response of *Centaurea maculosa*. International Knapweed Symposium, Coeur d'Alene, ID.

Newingham, B.A., C.A. Zabinski, R. Michalet, and R.M. Callaway. 2000. Mycorrhizae determine compensatory responses of American and French *Centaurea maculosa* after clipping. Annual Meeting of the Ecological Society of America, Snowbird, UT.

Newingham, B.A. and R.M. Callaway. 1999. Insect herbivory may not reduce growth of *Centaurea maculosa* nor reduce its competitive effects on neighbors. International Organization for Biological Control Symposium (Evaluating Indirect Ecological Effects of Biological Control), Montpellier, France.

Newingham, B.A. and R.M. Callaway. 1999. Are insect biocontrols effective?: Insect herbivory does not affect the competitive ability of an invasive plant, spotted knapweed. Annual Meeting of the Ecological Society of America, Spokane, WA.

Newingham, B.A. 1999. The effects of insect herbivores on *Centaurea maculosa's* competitive ability. Universite Joseph Fourier, Grenoble, France.

Newingham, B.A. 1998. Effects of insect herbivores on *Centaurea maculosa's* competitive ability with native plants. Philanthropic Educational Organization, Missoula, MT.

Grants:

Wulfhorst, J.D., K.T. Vierling, B.A. Newingham, and T.E. Link. *pending*. Understanding dynamic processes of the social-ecological sagebrush-steppe system. NSF Coupled Natural and Human Systems. $250,000.

Newingham, B.A. 2012. Plant-soil-water dynamics in response to fire and climate change in a semi-arid ecosystem. UI EPSCoR REU program. $5,000.

Smith, A.M.S., B.A. Newingham, E.K. Strand, T.E. Hall, J.A. Hicke, and P. Morgan. 2011-2014. Quantifying the characteristics and investigating the biogeoscientific and societal impacts of extreme wildland fires in the United States northern Rockies region. National Aeronautics and Space Administration. $1.2 million.

Newingham, B.A. 2011. Implications of fire and climate change on the ecohydrology of a semi-arid ecosystem. UI EPSCoR REU program. $5,000.

Newingham, B.A. 2010-2012. Examining the effects of thinning and prescribed fire on northern Idaho ground squirrel habitat. Idaho Fish and Game. $51,757.

Newingham, B.A. 2010-2013. Prescribed fire effects on key habitat characteristics of the northern Idaho ground squirrel. State Wildlife Grant. $65,978.

Kavanagh, K.L., H.A. Hess, T.E. Link, B.A. Newingham, A.M. Smith, P.E. Gessler, Z.A. Holden, A.S. Davis. 2010-2013. MRI R2 Consortium: Development of a smart 3-D wireless sensor network for terrain-climate research in remote mountainous environments. NSF Major Research Instrumentation. $563,326.

Bosque-Pérez, N.A., Eigenbrode, S.D., Waits, L., Wulfhorst, J.D., Morgan, P., Force, J. (Newingham, B.A., participant). 2009-2014. Evaluating resilience of ecological and social systems in changing landscapes: a doctoral research and education program in Idaho and Costa Rica. NSF Integrative Graduate Education and Research (IGERT). $3.2 million.

Newingham, B.A. 2009. Travel to Ecological Society of America Annual Meeting. University of Idaho Travel Grant. $900.

Newingham, B.A. 2008-2013. Effects of two restoration seeding drills on soil chemical and physical properties after wildland fire. US Forest Service. $89,716.

Newingham, B.A.. 2006-2007. Vegetation monitoring on the Loop Fire in Red Rock National Conservation Area, Nevada. Bureau of Land Management. $16,000.

Newingham, B.A. 2000. Testing the effectiveness of a root-boring biocontrol (*Cyphocleonus achetes*) in controlling spotted knapweed in the field. Mt. Sentinel Weed Management Committee. $900.

Newingham, B.A. PEO Scholars Award. 1999. Philanthropic Educational Organization. $7,000.

Newingham, B.A., and E.V. Carey. 1998. Effectiveness of sheep grazing for leafy spurge control on Mt. Sentinel. McClay-Leffingwell Leafy Spurge Research Fund. $2,500.

Newingham, B.A., and E.V. Carey. 1998. Assessing the effectiveness of allelopathy as a leafy spurge biological control. McClay-Leffingwell Leafy Spurge Research Fund. $3,300.

Newingham, B.A. 1998. Effects of insect herbivory on spotted knapweed's competitive ability. Mt. Sentinel Weed Management Committee. $750.

Peer-reviewed & Refereed Publications: (* denotes graduate student; ** denotes undergraduate)

*Bruce, M.C., B.A. Newingham, C.C. Harris, and E.E Krumpe. *in revision*. Opinions towards using volunteers in ecological restoration: A survey of federal land managers. Restoration Ecology.

*Suronen, E.F. and B.A. Newingham. *in revision*. Restoring habitat for the northern Idaho ground squirrel (*Urocitellus brunneus*): Effects of prescribed burning on dwindling habitat. Forest Ecology and Management.

*Schmalz, H.J., R.V. Taylor, T.N. Johnson, P.L. Kennedy, S.J. DeBano, BA. Newingham, and P.A. McDaniel. *in press*. Stocking rate and edaphic habitat types influence indicators of soil stability and hydrologic function. Rangeland Ecology and Management.

Newingham, B.A., C.H. Vanier, T.N. Charlet, K. Ogle, S.D. Smith, and R.S. Nowak. 2013. No cumulative effect of ten years of elevated [CO_2] on perennial plant biomass components in the Mojave Desert. Global Change Biology. DOI: 10.1111/gcb.12177.

*Suronen, E.F. and B.A. Newingham. 2013. A starting point: An ecosystem of reference for habitat restoration of the northern Idaho ground squirrel, *Urocitellus brunneus*. Northwestern Naturalist. 94:TBD.

Newingham, B.A., C. H. Vanier, T.N. Charlet and S.D. Smith. 2012. Effects of enhanced summer monsoons, nitrogen deposition and soil disturbance on *Larrea tridentata* productivity and resulting herbivory in the Mojave Desert. Journal of Arid Environments. 87:19-28. ◆*featured on Earthemphasis.com*

Newingham, B.A., A.C. Ganguli, and B.J. Orr. 2012. Building a Teaching Technology Toolbox for Rangeland Ecology. Rangelands. 34:26-33.

Smith, S.D., T.N. Charlet, L.F. Fenstermaker and B.A. Newingham. 2009. Effects of Global Change on the Mojave Desert Ecosystem. In: The Mojave Desert: Ecosystem Processes and Sustainability. Eds: Webb, R.H., J.M. André, L.F. Fenstermaker, J.S. Heaton, D.L. Hughson, E.V. McDonald, and D.M. Miller. University of Arizona Press.

Newingham, B.A., H. Bassirirad and R.M. Callaway. 2007. Allocating nitrogen away from an herbivore: a novel compensatory response to root herbivory. Oecologia 153: 913-920.

Newingham, B.A., P. Vidiella and J. Belnap. 2007. Microhabitat effects of canopy, litter and herbivory on emergence and success of *Bromus tectorum*. Journal of Arid Environments 70: 389-402.

Newingham, B.A. and R.M. Callaway. 2006. Shoot herbivory on the invasive plant, *Centaurea maculosa*, does not reduce its competitive effects on conspecifics and natives. Oikos 114: 397-406.

Barker, D.H., C. Vanier, E. Naumburg, T. Charlet, K.M. Nielsen, B.A. Newingham and S.D. Smith. 2006. Enhanced monsoon precipitation and N deposition affect leaf traits and photosynthesis differently in spring and summer in the desert shrub *Larrea tridentata*. New Phytologist 169: 799-808.

Newingham, B.A. and J. Belnap. 2006. Direct effects of salt amendments on emergence and growth of the invasive plant, *Bromus tectorum*, and native, *Hilaria jamesii*, in the field. Plant and Soil 280: 29-40.

Newingham, B.A., **G. Boquien, P. Choler, and R.M. Callaway. 2005. Effects of *Festuca paniculata* on the compensatory growth response of *Centaurea uniflora* in the field. Plant Ecology 176: 237-244.

Thelen, G.C., J.M. Vivanco, B.A. Newingham, W. Good, H.P. Bais, P. Landres, A. Caesar and R.M. Callaway. 2005. Biocontrol herbivory stimulates allelopathic exudation by an invasive plant and the suppression of natives. Ecology Letters 8: 209-217.

Callaway, R.M., R.W. Brooker, P. Choler, Z. Kikvidze, C.J. Lortie, R. Michalet, L. Paolini, F.I. Pugnaire, B.A. Newingham, B.J. Cook, E.T. Aschehoug, C. Armas. 2002. Positive interactions among alpine plants increases with stress: a global experiment. Nature 417: 844-848.

Callaway, R.M., B.A. Newingham, C.A. Zabinski and B.E. Mahall. 2001. Compensatory growth and competitive ability of an invasive weed are enhanced by soil fungi and native neighbors. Ecology Letters 4: 429-433.

In review:

Newingham, B.A., C.H. Vanier, L.J. Kelly, T.N. Charlet, and S.D. Smith. *in review*. Do desert plant communities benefit from ten years of elevated CO_2? Ecology.

Sparks, A.M*, W.T. Tinkham*, A.M.S. Smith, L. Boschetti, B.A. Newingham, and K.O. Lannom. *in review*. Preliminary assessment of the Monitoring Trends in Burn Severity burned area accuracy for three shrub-steppe fires. International Journal of Wildland Fire.

In preparation:

Newingham, B.A., C.H. Vanier, and S.D. Smith. in prep. A C_4 grass and C_3 drought-deciduous shrub respond differently to summer monsoons but not nitrogen deposition or soil disturbance in the Mojave Desert. Global Change Biology.

Evans, R.D., A. Koyama, D. Sonderegger, T.N. Charlet, B.A. Newingham, L.F. Fenstermaker, B. Harlow, K. Ogle, S.D. Smith, and R.S. Nowak. in prep. Whole-ecosystem exposure to elevated CO_2 increases total ecosystem C in the Mojave Desert? Nature.

Lannom, K., Smith, A.M.S., B.A. Newingham, *W.T. Tinkham, P. Morgan, E.K. Strand, T.B. Paveglio, and T.E. Hall. in prep. Defining extreme wildland fires using geospatial data. International Journal of Wildland Fire.

Vanier, C.H., Newingham, B.A., and S.D. Smith. in prep. Carbon dioxide enrichment does not alter mass:volume allometry of desert perennials. Ecological Archives.

Klos, K.*, J .Abatzoglou, J. Blades*, M. Clark*, C. Currie*, M. Dodd*, S. Eigenbrode, T. Hall, A. Haruch*, J. Hicke, P. Higuera, J. Holbrook*, V. Jansen*, K. Kemp*, A. Lamar*, A. Lankford*, T. Link, T. Magney*, A. Meddens*, L. Mitchell*, B. Moore*, P. Morgan, B. Newingham, R. Niemeyer*, B. Soderquist*, A. Suazo*, C. Teston, K. Vierling, V. Walden, and C. Walsh*. in prep. Indicators of climate change in Idaho: An assessment framework for perceived and realized change. Weather, Climate and Society.

Kelly, L.J. and B.A. Newingham. in prep. Effects of fire, ecological site, and historical seed drilling on wind erosion in the Great Basin. Aeolian Research.

Smith, A.M.S, K. Lannom, W.T. Tinkham*, P. Morgan, B.A. Newingham, and T. Hall. in prep. What is an extreme wildfire? Perspectives from remote sensing, ecology, and the social sciences. Frontiers in Ecology and the Environment.

Newingham, B.A., C.H. Vanier, and S.D. Smith. in prep. Elevated CO_2 does not affect growth of three functional groups in the Mojave Desert. Oecologia.

Newingham, B.A., P. Vidiella and J. Belnap. in prep. Effects of rodent caching on biomass and seed production of the invasive weed *Bromus tectorum* L. Journal of Arid Environments.

*Wissinger, B.D., J.M. Marshall, S. D. Eigenbrode, and B.A. Newingham. in prep. Perennial shrub and harvester ant responses to environmental gradients in southern California deserts. Ecosphere.