

Karen Borza Arabas

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EDUCATION

- 1997 **Ph.D. Geography**, The Pennsylvania State University
Dissertation “Fire and Vegetation Dynamics in the Eastern Serpentine Barrens”
- 1991 **M.A. Environmental and Resource Policy**, George Washington University.
Master’s papers “Water in the Western United States: Physical and Institutional Sources of Controversy” and
“Water Transfers: Quenching California’s Thirst”
- 1984 **B.A. Environmental Science**, Wesleyan University.
Senior thesis “A Case of Groundwater Contamination: The Scientific and Political Implications”

PROFESSIONAL EXPERIENCE

- 2008-pres. **Willamette University**, Salem, Oregon
Professor, Department of Environmental and Earth Sciences.
Associate Director of Land Conservation and Research at Zena Forest
- 2002-2008 **Willamette University**, Salem, Oregon
Associate Professor, Department of Environmental and Earth Sciences.
Chair, Department of Environmental and Earth Sciences (2005 to 2008)
- 1996-2002 **Willamette University**, Salem, Oregon
Assistant Professor, Department of Environmental and Earth Sciences.
- 2001-pres. **Portland State University**, Portland, Oregon
Visiting Research Professor, Department of Geography and Tree Ring Laboratory
- 1991-1996 **Pennsylvania State University**, University Park, Pennsylvania
Instructor and Teaching Assistant, Department of Geography
- 1992-1993 **Pennsylvania State University**, University Park, Pennsylvania
Research assistant, Vegetation Dynamics Lab
- 1990-1991 **ICF Incorporated**, Washington, D.C.
Policy analyst supporting the Environmental Protection Agency’s Global Climate Change Division
- 1989-1990 **Center for Values and Social Policy**, Boulder, Colorado.
Research assistant, NSF global climate change grant.
- 1989-1990 **Center for Space and Geosciences Policy**, Boulder, Colorado
Research assistant, NASA global change and loss of biological diversity grant.
- 1989 **World Resources Institute**, Washington, D.C.
Research assistant, Climate and Policy Group.

FIELD RESEARCH

- 2009-pres. **Ecological Restoration Initiative at Zena Forest**, Polk County, Oregon.
Principal investigator for oak habitat restoration project on 340 acres in the Willamette Valley.
- 1998-pres. **Newberry Crater National Volcanic Monument**, Oregon.
"Forest Island Project": research examines forest succession and disturbance within the context of island biogeographic theory.
- 2000-2002 **Marion County Department of Public Works**, Salem, Oregon
Principal investigator for an oak release project at the County's Bonesteele Ecological Restoration Park. Designed thinning and prescribed burning experiment to release suppressed oaks into forest canopy.
- 1998-2000 **Marion County Department of Public Works**, Salem, Oregon.
Principal investigator for forest restoration research at the County's Bonesteele Ecological Restoration Park. Prepared web-based document describing forest history and dynamics, including recommendations for forest restoration. Member of the restoration workgroup.
- 1993-1996 **The Nature Conservancy**, Philadelphia, Pennsylvania.
Principal investigator for a project examining the effects of prescribed burning on the biological diversity of eastern serpentine barrens in southeastern Pennsylvania. Designed project, secured funding, conducted fieldwork, supervised research assistants, and analyzed data.
- 1987-1988 **Smithsonian Institution**, Washington, D.C.
Participated in field research at Arenal Volcano in Costa Rica. Established an eruption-monitoring program and excavated stratigraphic volcanic sequences to refine pre-historic eruption chronologies. Assisted Museum Curator with data analysis.

PUBLICATIONS

Peer-reviewed articles in refereed journals

- Stanton, S.M. and **K.B. Arabas**. 2009. Fuel and stand conditions in an isolated, unmanaged forest landscape in Central Oregon. *Annals of Forest Science* 66(2): 207.
- Arabas, K.B.**, B. Black, L. Lentile, J. Speer, and J. Sparks. 2008. Disturbance history of a mixed conifer stand in central Idaho. *Tree Ring Research* 64(2): 67-80.
- Pohl, K., K.S. Hadley, and **K.B. Arabas**. 2006. Decoupling tree-ring signatures of climate variation, fire, and insect outbreaks in central Oregon. *Tree Ring Research* 62(2): 37-50
- Arabas, K.B.**, K.S. Hadley, and E.R. Larson. 2006. Fire history of a naturally fragmented landscape in central Oregon. *Canadian Journal of Forest Research* 36(5): 1108-1120.
- Pohl, K.A., K.S. Hadley, and **K.B. Arabas**. 2002. A 545-year drought reconstruction from central Oregon, *Physical Geography*. 21(4): 302-320
- Arabas, K.B.** 2000. Spatial and temporal relationships among fire frequency, vegetation, and soil depth in an Eastern North American Serpentine Barren. *Journal of the Torrey Botanical Society*. 127(1): 51-65.
- Ruffner, C.M. and **K.B. Arabas**. 2000. Post-European impacts on a Central Pennsylvania woodlot. *Castanea* 65(1): 9-20.

Manuscripts in preparation for refereed journals

K.B. Arabas, K. Lewis, L. Lentile, B. Amos, B. Black, J. Speer. Impact of thinning and burning on a mixed conifer stand in Ponderosa State Park, Central Idaho. To be submitted to *Northwest Science*.

K.S. Hadley and **K.B. Arabas**. Forest structure, disturbance, and succession on forest isolates (kipukas), Central Oregon, USA. To be submitted to *Journal of Biogeography*.

Books and Book Chapters

Arabas, K.B. and J. Bowersox (eds.). 2004. *Forest Futures: Science, Politics and Policy for the Next Century*. Lanham, MD: Rowman and Littlefield.

Arabas, K.B. and J. Bowersox. 2004. Introduction: Natural and human history of Pacific Northwest forests. In *Forest Futures: Science, Politics and Policy for the Next Century*. K.B Arabas and J. Bowersox (eds.) Pp. xxiii-xlii Lanham, MD: Rowman and Littlefield.

Bowersox, J. and **K.B. Arabas**. 2004. Conclusion: Forests past and forests future – connecting science politics and policy. In *Forest Futures: Science, Politics and Policy for the Next Century*. K.B Arabas and J. Bowersox (eds.) Pp. 280-291. Lanham, MD: Rowman and Littlefield.

Borza, K.L. and D. Jamieson. 1991. “Global change and biodiversity loss: some impediments to response.” In *Earth Observations and Global Change Decision Making, Vol II*. I. W. Ginsberg and J.A. Angelo, Jr. (eds). Malabar, FL: Krieger.

Book Reviews

Arabas, K.B. 2005. “Foundations of Biogeography: Classic Papers with Commentaries” *Environmental History* 10(2).

Borza, K.L., and D. Jamieson. 1990. “Global warming: are we entering the greenhouse century?” *Colorado Journal of International Environmental Law and Policy*. 1(1):205-210.

Reports

Arabas, K.B. 2000. *Forest Restoration at Bonesteele Ecological Park, Marion County, Oregon*. Report for Marion County Department of Public Works, Parks Department. Available on-line at <http://www.co.marion.or.us/PW/Parks/NHPP/bonesteele/>

Borza, K.L., and D. Jamieson. 1990. “Global change and biodiversity loss: difficulties valuing long-term ecological consequences.” Working paper. The Center for Space and Geosciences Policy. University of Colorado, Boulder.

Pedagogical Materials

Arabas, K.B. 2000. Believe It? Evaluating Web Information, in *Class Activities and Assessment Guide to accompany Environmental Science: A Global Concern*. A.W. McConney (ed). San Francisco: McGraw Hill.

Arabas, K.B. 2000. Got It? Gathering and Interpreting Web Information, in *Class Activities and Assessment Guide to accompany Environmental Science: A Global Concern*. A.W. McConney (ed). San Francisco: McGraw-Hill.

Rubba, P., R. Wiesenmayer, J. Rye, M. McLaren, K. Sillman, K. Yorks, D. Yukish, T. Ditty, V. Morphew, C. Bradford, D. Dorough, and **K. Arabas** (eds). 1995. *Global Atmospheric Change: Enhanced Greenhouse Effect, Ozone Layer Depletion and Ground Level Ozone Pollution*. A Teachers' Guide to a Science-Technology-Society Issue Investigation and Action Unit for Middle and High School Science Courses. Pennsylvania State University, University Park.

GRANTS

- 2010 Oregon Watershed Enhancement Board, Watershed Restoration Grant, *Zena Forest Oak Habitat Restoration* (\$167,810)
- 2008 Willamette University, William and Flora Hewlett Grant for Curriculum Development, *Agriculture in the Willamette Valley* (\$9000)
- 2007 Willamette University, William and Flora Hewlett Grant for Curriculum Development, *Plant Watch Protocol Development for Plant Phenology on Campus to Enrich Curriculum for Non-Majors and Across Majors* (\$4,150)
- 2005 Willamette University, William and Flora Hewlett Grant for Curriculum Development, *Sustainability Retreat* (\$10,500).
- 2004 Willamette University, William and Flora Hewlett Grant for Curriculum Development, *Forest Ecology and Policy Seminar* (\$3,900).
- 2003 Association of American Geographers Research Grant, *A Question of Scale: Living with Fire on the Natural and Political Landscape* with Joe Bowersox, Willamette University (\$1,000).
- 2003 Willamette University, Atkinson Faculty Development Award, *Effects of Prescribed Fire on Serpentine Barrens Forests* (\$2,500)
- 2002 Willamette University, Atkinson Faculty Development Award, *Fire History of the Lava Cast Forest, Central Oregon* (\$2,500)
- 2002 Willamette University, William and Flora Hewlett Grant for Curriculum Development, *Forest Ecology and Policy Seminar* (\$2,300).
- 2000 Willamette University, Atkinson Faculty Development Award, *Forest Succession and Fire Disturbance on Kipuka Forest Islands in Central Oregon* (\$2,500)
- 1998-2001 Willamette University Student-Faculty Collaborative Research Program, sponsored by the Murdock and Mary Stuart Rogers Foundations, *Continuing Research at the Lava Cast Forest, Oregon* (\$60,500)
- 1999 Willamette University, Atkinson Faculty Development Award, *Ecological Restoration Plan for Bonesteele Prairie, Marion County, OR.* (\$2,000)
- 1994 National Science Foundation Dissertation Improvement Grant, *Maintaining Diversity in a Serpentine Ecosystem: The Role of Multiple Stable States and Stochastic Change* (\$10,000).
- 1994 Biogeography Specialty Group Graduate Student Research Grant, (\$500)

AWARDS

- 2006 Nominated for the Salem Audubon Society's Green Educator Award
- 2005 Charles Redd Center Award for Best Paper on the Politics of the American West, from the Western Political Science Association
- 2003 Nominated for the Statesman Journal's Athena Award

- 1996 Biogeography Specialty Group Outstanding Graduate Student Research Presentation
- 1994 Science Award for Outstanding Service to Conservation, The Pennsylvania Field Office of the Nature Conservancy

FELLOWSHIPS

- 1991-1992 Earth Systems Science Center Fellowship, Pennsylvania State University.
- 1990-1991 University Fellow, George Washington University.
- 1987 Klingenstein Fellowship for summer study in Costa Rica, Earthwatch.

PRESENTATIONS

Placed-Based Undergraduate Research Experiences at Willamette University's Zena Forest and Farm, panel to be moderated at the Annual Meeting of the Association of American Geographers, Seattle, WA, April 2011. With Joe Bowersox, Katie Rigsby, Kelsey Copes-Gerbitz, and Tyler Hoecker, Willamette University

Impacts of a Thinning and Burning Treatment on A Mixed Conifer Stand in Ponderosa State Park, Central Idaho, to be presented at the Annual Meeting of the Association of American Geographers, Las Vegas, NV. March 2009. Co-author with Kathy Lewis, University of Northern British Columbia; Leigh Lentile, Dept. of Forest Resources, University of Idaho; Blake Amos, School of Renewable Natural Resources, Louisiana State University; and Bryan Black, Hatfield Marine Science Center, Oregon State University. Noncompetitively selected paper.

Disturbance History of a Mixed Conifer Stand in Central Oregon, presented at the Annual Meeting of the Association of American Geographers, Chicago, IL. March 2006. Co-author with Bryan Black, Hatfield Marine Science Center, Oregon State University; Jim Speer, Dept. of Geography, Geology, and Anthropology, Indiana State University; Blake Amos, School of Renewable Natural Resources, Louisiana State University; Posy Busby, Harvard Forest, Harvard University; Jennifer Karps, Dept. of Geography, Portland State University; Leigh Lentile, Dept. of Forest Resources, University of Idaho; Kathy Lewis, Forestry, University of Northern British Columbia; Jodi Sparks, Dept. of Geography, Geology, and Anthropology, Indiana State University. Noncompetitively selected paper.

Integrative Dendrochronology. Panel organizer and chair at the Annual Meeting of the Association of American Geographers, Chicago, IL. March 2006.

Employment as a Biogeographer: Prospects, Insights, and Advice. Invited panel participant at the Annual Meeting of the Association of American Geographers, Chicago, IL. March 2006.

Scale on the Natural and Political Landscapes: Ecosystem Management and the Healthy Forest Restoration Act, presented at the Ecological Society of America's Annual Meeting, Portland Oregon, August 2004. Co-author with Dr. Joe Bowersox of Willamette University. Competitively selected paper.

The Forest Islands Project: Fire History and Climate Reconstruction at the Lava Cast Forest, Oregon, invited seminar presented at the Geography Seminar Series, Oregon State University, Corvallis, OR, June 2004

Lava Cast Forest: Fire and Climate History from the Forest Islands, invited talk presented at the Salem Geological Society, Salem, OR, May 2004.

People, Fire and Scale: Obstacles to Ecosystem Management, presented at the Western Political Science Association Annual Meeting, Portland, OR. March 2004. Co-author with Dr. Joe Bowersox of Willamette University. Competitively selected paper.

Fire History of the Lava Cast Forest, Central Oregon, presented at the 2nd International Wildland Fire Ecology and Fire Management Congress, Orlando, FL. November 2003. Co-author with Evan R. Larson and Dr. Keith Hadley of Portland State University. Noncompetitively selected paper.

A Question of Scale: Living with Fire on the Landscape, presented at the Association of Pacific Coast Geographers meeting, Portland, OR. September 2003. Co-author with Dr. Joe Bowersox of Willamette University. Noncompetitively selected paper.

Forest Structure and Succession Across a Naturally Fragmented Landscape, presented at the Annual Meeting of the Association of American Geographers, Los Angeles, CA. March 2002. Co-author with Dr. Keith Hadley of Portland State University. Noncompetitively selected paper.

Fire History of Lava Cast Forest, presented at the Annual Meeting of the Association of American Geographers, Los Angeles, CA. March 2002. Co-author with Evan R. Larson, Willamette University. Noncompetitively selected paper.

A Tree-Ring Reconstruction of Climatic Variation, Wildland Fire, and Insect Outbreak in Central Oregon, presented at the Annual Meeting of the Association of American Geographers, Los Angeles, CA. March 2002. Co-author with Kelly A. Pohl and Dr. Keith Hadley of Portland State University. Noncompetitively selected paper.

Forest History of Bonesteel Ecological Park, Marion County, Oregon, presented at the Annual Meeting of the Oregon Academy of Sciences, Portland, OR. February 2001. Noncompetitively selected paper.

Post-fire stand development and fuel loading on forest kipuka in central Oregon, presented at the Annual Meeting of the Association of American Geographers, Pittsburgh, PA. April 2000. Co-author with Dr. Keith Hadley of Portland State University, and Adrea Lovejoy, BrynMawr College. Noncompetitively selected paper.

Forest Dynamics at Bonesteel Ecological Restoration Park, Marion County, OR, invited talk for the Oregon Native Plant Society, Salem, OR. March 2000.

Forest Structure and Succession on Kipuka Forest Islands in Central Oregon, presented at the Annual Meeting of the Association of American Geographers, Honolulu, HI. March 1999. Co-author with Dr. Keith Hadley of Portland State University. Noncompetitively selected paper.

A Non-Equilibrium Approach to Island Biogeography: Merging Geographical Ecology and Vegetation Dynamics, presented at the Association of Pacific Coast Geographers, Flagstaff, AZ. October 1998. Co-author with Dr. Keith Hadley of Portland State University. Noncompetitively selected paper.

Juggling Management and Research Objectives in Ecological Restoration: Lessons from an Eastern Serpentine Barrens, invited talk for the Department of Geography, University of Oregon. October 1997.

Effects of Fire and Anthropogenic Disturbance on Eastern Serpentine Barrens Forests, presented at the Annual Meeting of the Association of American Geographers, Fort Worth, TX. March 1997. Noncompetitively selected paper.

Using Prescribed Fire as a Management Tool in the Eastern Serpentine Barrens, presented at the Annual Meeting of the Association of American Geographers, Charlotte, N.C. March 1996. Noncompetitively selected paper.

MANUSCRIPT and PROPOSAL REVIEWS

Arctic, Antarctic and Alpine Research
Canadian Journal of Forest Research
Forest Ecology and Management
Natural Areas Journal
Northwest Science
Physical Geography
Tree Ring Research

John Wiley and Sons
National Geographic Society
National Park Service
National Science Foundation

SERVICE

Willamette University

2009-2011 Chair, Writing Program Advisory Committee, College of Liberal Arts
2008-pres Member, Zena Forest Steering Committee
2007-2009 Member, Writing Program Advisory Committee, College of Liberal Arts
2005-2008 Chair, Department of Environmental and Earth Sciences
2006 Search Chair, Environmental and Earth Sciences
2005-2007 Member, Sustainability Council, Willamette University
2004-2006 Member, Budget Committee, College of Liberal Arts
2004 Search Chair, Environmental and Earth Sciences
2002-2003 Chair, Department of Environmental and Earth Sciences
2000-2002 Chair, International Education Committee
2001-2002 Member, Hatfield Scholarship Selection Committee
2000 Keynote Speaker, Saeculum Vocat
1999-2000 Member, International Education Committee
1997-1999 Member, Undergraduate Grants and Awards Committee.
1998-1999 Chair, Department of Earth Science

Portland State University, Department of Geography

2001-2007 Outside committee member for Ph.D. candidate Sharon Stanton
1998-2003 Outside committee member for Ph.D. candidate Deborah Tolman
1999-2001 Outside committee member for M.S. candidate Kelly Pohl

Biogeography Specialty Group of the Association of American Geographers

2005, 2009 Student Grant Competition, reviewer
2002-2004 Board Member

Oregon Academy of Sciences

2000-2002 Section Co-Chair for Geography
1999 Program Chair for 1999 Annual Meeting

City of Salem, Oregon

2002-2004 Commissioner, Salem Environmental Commission
2002 Member, Citizen's Advisory Committee on Salem's Tree Preservation Ordinance

Friends of the Straub Environmental Learning Center, Salem, Oregon

2009-2011 Vice President, Board of Directors
2008-2011 Member, Board of Directors
2004-2008 Member, Education Committee

Salem-Keizer School District, Salem, Oregon

2010-pres Board Member, Howard Street Charter School Board of Governors
2005-pres Classroom Volunteer, McKinley Elementary School
2006, 2007 Science Fair Mentor, Leslie Middle School
2005-2006 Outreach Program, Houck Middle School

PROFESSIONAL AFFILIATIONS

Association of American Geographers (AAG)
AAG Biogeography Specialty Group
International Biogeography Society

Project Kaleidoscope, 21st Century Faculty member

CONFERENCES ORGANIZED

Is Nature Calling? New Perspectives on Living with and Working for Nature. Willamette University, February 11, 2005, in conjunction with Willamette's Public Policy Center and the Dempsey Foundation

Forest Futures: Science Politics and Policy for the Next Century, Willamette University, September 25, 2002, in conjunction with Willamette's Public Policy Center and the Dempsey Foundation.

Greener Institutions for a Changing Climate, Willamette University, September 26, 2001, in conjunction with Willamette's Public Policy Center and the Dempsey Foundation.

UNDERGRADUATE STUDENT RESEARCH PROJECTS ADVISED

2008 **Hannah Wells**, Science Collaborative Research Program, Willamette University. *Forest Cover Change Over Time in Monmouth Township, Oregon* (presented as a poster at the Murdock Undergraduate Research Conference, Tacoma, WA, November 2008 and at the Annual Meeting of the Association of American Geographers, Las Vegas, NV).

Maria Savoca, Science Collaborative Research Program, Willamette University. *Riparian Forest Change in Monmouth Township, 1935-2005.* (presented as a poster at the Murdock Undergraduate Research Conference, Tacoma, WA, November 2008).

Arley Oddo, Science Collaborative Research Program, Willamette University. *Forest Fragmentation Over Time in Monmouth Township, Oregon* (presented as a poster at the Murdock Undergraduate Research Conference, Tacoma, WA, November 2008 and at the Annual Meeting of the Association of American Geographers, Las Vegas, NV, March 2009).

Eric Autrey, Science Collaborative Research Program, Willamette University. *Edaphic and Topographic Effects on Forest Patterns In Monmouth Township Oregon* (presented as a poster at the Murdock Undergraduate Research Conference, Tacoma, WA, November 2008 and at the Annual Meeting of the Association of American Geographers, Las Vegas, NV, March 2009).

2005 **Darrell McGie**, Carson Grant Recipient, Willamette University. *Hydrogen From Wastewater: Oregon's Alternative Energy?*

2001 **Evan Larson**, Science Collaborative Research Program, Willamette University. *Fire history of the contiguous forest at Newberry Crater National Volcanic Monument, OR.* (presented as a poster at the Murdock Undergraduate Research Conference, Spokane, WA, September 2001).

Meg Christensen, Science Collaborative Research Program, Willamette University. *Fir expansion on a forest island kipuka at Newberry Crater National Volcanic Monument, OR* (presented as a poster at the Murdock Undergraduate Research Conference, Spokane, WA, September 2001).

Janice Belknap, Science Collaborative Research Program, Willamette University. *Record of pandora moth infestations on forest island kipuka at Newberry Crater National Volcanic Monument, OR* (presented as a poster at the Murdock Undergraduate Research Conference, Spokane, WA, September 2001).

1999 **Greg Stiles**, Carson Grant Recipient, Willamette University. *A Comparison of United States & German Waste Management*.

Cynthia D. Jones, Science Collaborative Research Program, Willamette University, *Vegetation Dynamics of Bonesteele Park, Marion County, OR*. (presented at the Annual Meeting of the Association of American Geographers, Pittsburgh, PA. April 2000, and as a poster at the Murdock Undergraduate Research Conference, Nampa, ID, November 1999).

Adrea Lovejoy, Science Collaborative Research Program, Bryn Mawn College. *Post Fire Stand Development and Fuel Loading on Forest Kipuka in Central Oregon*. (presented at Annual Meeting of the Association of American Geographers, Pittsburgh, PA. April 2000)

Peter B. Jenkins, Science Collaborative Research Program, Willamette University. *Using a Geographic Information System (ArcView) to Assess the Biogeographical Characteristics of Kipuka Forest Islands in Central Oregon* (presented as a poster at the Murdock Undergraduate Research Conference, Nampa, ID, November 1999).

Sara Coffey, Science Collaborative Research Program, Willamette University. *Fuel Load in a Fragmented Habitat, Bonesteele Park, Marion County OR*, (presented as a poster at the Murdock Undergraduate Research Conference, Nampa, ID, November 1999).