

DANIEL JARVIS

Clark University

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EDUCATION

Clark University, Worcester, MA 01610

Ph.D., Geography, Degree conferred: August 2015

Clark University, Worcester, MA 01610

Master of Arts, Geography, Degree conferred: January 2011

University of Colorado, Boulder, CO 80309

Bachelor of Arts, Triple Major, Geography, Ecology and Evolutionary Biology, Environmental Studies, Degree conferred: May 2008

PROFESSIONAL HISTORY

Vermont Technical College, Randolph, VT

Instructor, 2014 – Present

- Introduction to GIS

A short course that introduces fundamental concepts and their practice in GIS. Specifically designed to be immediately applicable to the professional setting, with applications in multiple private and public arenas.

Vermont Agency of Transportation, Montpelier, VT

GIS Consultant, 2014 – Present

- Consult the Survey and Right of Way departments on the use and exploration of new and emerging GIS technologies, and the management of GIS databases and workflows.

Community College of Vermont, Environmental Science Program, Winooski, VT

Instructor, spring 2014

- Introduction to Environmental Science. 2014

This course is a multidisciplinary study of the interrelationship between living things and their environment. The fundamentals of biology, chemistry, geology, and energy flow are studied so that current environmental issues can be understood and discussed from a scientific perspective. Emphasis is placed on maintaining and restoring sustainable ecosystems

- Special Topics: Geospatial Technology. 2014

This course provides an introduction to the fundamentals of theory and practice in geospatial technology, including the use of Geographic Information Systems (GIS), Global Positioning Systems (GPS), cartography, remote sensing, and spatial analysis to examine social and environmental problems.

Clark University, School of Geography, Worcester, MA

Teaching Assistant, 2008 – 2013

- Weather and Climate. 2011, 2013
Understanding controls of weather: insolation, evaporation, wind, and topography; the climates that result; and how they influence human activities. Students are also introduced to fundamentals of scientific inquiry and knowledge with exposure to observational methods, data analysis, and forecasting. Fulfills the Science Perspective
- Intermediate Quantitative Methods. 2012
An in-depth survey of bivariate and multivariate regression, discriminant analysis, factor analysis, log-linear models and analysis of spatial and temporal data
- Earth System Science. 2012
An introduction to the structure and function of the earth system, with a focus on the biosphere. Topics include the connections of land, water, and atmosphere, and how these systems create and sustain climates and biomes and provide ecosystem services
- Forest Ecology. 2008, 2009, 2011
A survey of the foundations in forest ecology, including both autecology and community ecology concepts, with an emphasis on forest dynamics and the ecological implications of forest management

Clark University, School of Geography, Worcester, MA

Research Assistant, 2009 – 2015

- Forest disturbance ecology research quantifying forest disturbance regimes in the Southern Rocky Mountains. This work has included assessing the individual and interactive roles that disturbances such as wildfire, bark beetles, and wind storms play in determining forest structure, composition, regeneration, and susceptibility to future disturbances.

National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA) (Contact is Robert Johnston of the Marsh Institute at Clark University),

Spatial Analyst for Single-project Collaboration, 2012 – 2015

- This project involves a spatial analysis of patterns in willingness to pay for changes in species status (endangered vs. threatened) for a variety of marine species as determined by stated preference choice surveys.

University of Colorado at Boulder, School of Geography, Boulder, CO

Research Assistant, 2005 – 2008

- Using disturbance ecology and dendroecology methods to research the roles of forest fire, wind storms, and bark beetle outbreaks on the disturbance regimes of Colorado forests. Primary focuses included: Reconstructing mixed severity fire regimes in the mix-conifer forest type; Reconstructing historic spruce beetle outbreak

CURRENT RESEARCH AREAS AND INTERESTS

- Forest Ecology, Dendroecology, Disturbance Ecology, Remote Sensing of Forest Ecosystems, GIScience, Spatial analysis in a GIS environment
- The relative and interacting roles that human impact, management, and natural forest processes and disturbances play in shaping past, present, and future forest pattern, processes, and disturbance susceptibility, and the roles climate change and climatic variability may play in attenuating or enhancing individual and interactive influences.

PUBLICATIONS

Jarvis, D., Kulakowski, D. Long-term history and synchrony of mountain pine beetle outbreaks in lodgepole pine forests. *Journal of Biogeography* 42(6): 1029-1039.

Johnston, R., **Jarvis, D.**, Wallmo, K., Lew, D. *Submitted*. Spatial Heterogeneity in Willingness to Pay for Improvements to Threatened and Endangered Marine Species: Regional Hot Spots and Relationships to Species Distribution. *Land Economics*. 91(4): 739-761.

Kulakowski, D., **Jarvis, D.** 2013. Low severity fires increase susceptibility of lodgepole pine to mountain pine beetle outbreaks in Colorado. *Forest Ecology and Management*. 289: 544-550

Kulakowski, D., Matthews, C., **Jarvis, D.**, Veblen, T.T. 2013. Compounded disturbances in subalpine forests in western Colorado favor future dominance by quaking aspen (*Populus tremuloides*). *Journal of Vegetation Science*. 24: 168-176

Vanderhoof, M., Williams, CA, Shuai, Y, **Jarvis, D.**, Kulakowski, D, Masek, J (2013). "Albedo-induced radiative forcing from mountain pine beetle outbreaks in forests, south-central Rocky Mountains: magnitude, persistence, and relation to outbreak severity." *BioGeosciences Discuss* 10(7): 11935-11968.

Kulakowski, D., **Jarvis, D.**, Veblen, T.T., Smith, J. 2012. Stand-replacing fires reduce susceptibility of lodgepole pine to mountain pine beetle outbreaks in Colorado. *Journal of Biogeography*. 39(11): 2052-2060

Kulakowski, D., **Jarvis, D.** 2011. The influence of mountain pine beetle outbreaks and drought on severe wildfires in northwestern Colorado and southern Wyoming: A look at the past century. *Forest Ecology and Management*. 262(9):1686-1696.

Hart, S.J., Eisenhart, K.S., **Jarvis, D.**, Kulakowski, D., Veblen, T.T. *In press*. Drought induces spruce beetle (*Dendroctonus rufipennis*) outbreaks across northwestern Colorado. *Ecology*.

PUBLICATIONS IN PREP

Gill, N.S., **Jarvis, D.**, Veblen, T.T., Pickett, S.T.A., Kulakowski, D. *In prep*. Is initial post-disturbance regeneration indicative of longer-term trajectories?. *Ecology*.

Jarvis, D., Rogan, J., Kulakowski, D., *In prep*. Fuel consequences and biophysical variables associated with substand synchrony of mountain pine outbreak in Northern Colorado.

Jarvis, D., Kulakowski, D., Gill, N.S., Rogan, J., Williams, C. *In prep.* Long-lasting influences of mountain pine beetle outbreak on fire hazard in central Colorado.

OTHER PUBLICATIONS

Kulakowski, D., Veblen, T.T., **Jarvis, D.** 2009. Initial Forest Regeneration Following Compounded Disturbances in Western Colorado. George Perkins Marsh Institute. Working Paper No. 2009-09. December 2009.

<http://www.clarku.edu/departments/marsh/news/WP2009-09.pdf>

INVITED LECTURES

November 15 2014. Academic career trajectories for undergraduates. Course: Field Method for Environmental Science. Community College of Vermont, Winooski, VT.

March 3 2013. Global climate classification using the Koppen-Geiger scheme. Course: Weather and Climate, Department of Geography, Clark University, Worcester, MA.

November 30 2012. Using the Getis-Ord G_i^* statistic and Minimum Spanning Trees to characterize spatial trends in WTP for marine animal species Endangered Species list classification shifts. Course: Intermediate Quantitative Methods, Department of Geography, Clark University, Worcester, MA

December 7 2011. Applied GIS methods in the study of Mountain Pine Beetle disturbance regimes. Course: Introduction to GIS, Department of Geography, Clark University, Worcester, MA

November 30 2011. Bark Beetle Dendrochronology case study in forest ecology. Course: Forest Ecology, Department of Geography, Clark University, Worcester, MA

November 7 2011. Introduction to the Science of Dendrochronology. Course: Forest Ecology, Department of Geography, Clark University, Worcester, MA

February 2 2011. Global controls on temperature distribution. Course: Weather and Climate, Department of Geography, Clark University, Worcester, MA.

December 2 2009. The use of remote sensing, GIS, and Dendrochronological methods in forest ecology, a case study. Course: Forest Ecology, Department of Geography, Clark University, Worcester, MA

November 30 2009. Principles of scientific writing and scientific presentation. Course: Forest Ecology, Department of Geography, Clark University, Worcester, MA

September 23 2009. Water ecology in forest ecosystems. Course: Forest Ecology, Department of Geography, Clark University, Worcester, MA

April 17 2009. Presentation of research performed in the Earth System Science (ESS) lab in the Clark University Geography Department. Course: GISDE Professional Seminar, Department of Geography, Clark University, Worcester, MA

September 17 2008. Solar Radiation and Temperature in forest ecosystems.

Course: Forest Ecology, Department of Geography, Clark University, Worcester, MA

January 2008: Introduction to Dendrochronological cross-dating using the computer program COFECHA.

COMPUTER PROGRAMS

GIS

- ESRI ArcGIS, IDRISI, ERDAS, Quantum GIS

Ecology

- Dendro Program Library, TSAP Win, CDendro/CooRecorder, Fragstats

Statistics

- Stata, SigmaPlot, SigmaStat, SPSS, S-Plus, GWR, GeoDa, R

Data Processing

- Microsoft office, Adobe Creative Suite

PRESS

Featured faculty member at the Community College of Vermont

<http://cevwinooski.blogspot.com/2013/11/new-faculty-member.html>

Featured research Interview for the Graduate School of Geography at Clark University
Newsletter, Winter 2010 edition.

<http://www.clarku.edu/departments/geography/pdfs/Undergraduate/Winter2010.pdf>

Spruce beetle outbreaks linked to drought

<http://www.colorado.edu/news/releases/2013/10/10/massive-spruce-beetle-outbreak-colorado-tied-drought-according-new-cu-study>

<http://kunc.org/post/researchers-tie-spruce-beetle-outbreak-drought>

REFERENCE CONTACTS

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Chris Williams, PhD.
Associate Professor
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