Wendy Peterman

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Wendy Peterman is a forest ecologist and soil scientist. Her main focus is the improvement of soils data and its effective incorporation into forest growth models and vegetation simulation models to make them more representative of on the ground environmental conditions. She has developed soil vulnerability indices and conducted forest mortality research with funding from the California, North Pacific and Southern Rockies Landscape Conservation Cooperatives. She has developed sensitive soils modules for the BLM REA's for both the Colorado Plateau and Sonoran Desert ecoregions. In the past, she developed landtype association maps for resource management in three national forests and conducted water resource conservation studies for the country of Cyprus.

EDUCATION

2014 – PhD, Forest Engineering, Oregon State University

2010 – M.S., Soil Science, Oregon State University

2008 – Post Bacc., Environmental Science, Applied Ecology & Resource Management, Oregon State University

EMPLOYMENT HISTORY

2010 – present, Ecologist/Soil Scientist, Conservation Biology Institute, Corvallis, OR

2009 – 2010, Graduate Research Assistant/Soil Scientist, Nollerlabs, Oregon State University, Corvallis, OR

2006 – 2008, Lab Assistant/GIS Technician, Nollerlabs, Oregon State University, Corvallis, OR

SELECT PROJECT EXPERIENCE

Soil Vulnerability - Southern Rockies LCC/DOI Reclamation Developing tools to project the effects of climate change on soil water conditions to inform appropriate strategies to mitigate climate impacts. The overall goal of this project is (1) to develop a spatially-explicit soil vulnerability index that can be used to forecast the short-term response of plants to current drought conditions and test a vegetation model hindcast of plant response to drought; (2) to compare and contrast the current vulnerability index with projections of vegetation dieback under future climate change scenarios and provide some warning about areas that are still currently protected by current plant cover but where future vegetation shifts may increase soil

vulnerability, thus enabling preliminary estimates of the future location of vegetation dieback and potential aeolian dust sources.

Soil Vulnerability – North Pacific LCC/USFWS Developing a soil vulnerability index and map indicating where forest cover is affected by climate change. This map contributes to a greater understanding of potential changes in soil moisture and temperature regimes under future climate conditions. This information can be used to improve vegetation models across the landscape. This study compares the results of different modeling approaches to the soil vulnerability map, synthesizes the state of knowledge and uncertainty, and introduces management implications for action.

Rapid Ecological Assessment: Soil Sensitivity for the Colorado Plateau and Sonoran Desert Ecoregions – BLM Produced conceptual models, process models and GIS analysis to create maps of soil sensitivity. Data were extracted from SSURGO and STATSGO spatial and tabular data and analyzed to highlight areas susceptible to disturbance and/or difficult to restore. "Sensitive" soils exceeded thresholds in one or more of the following characteristics: wind erodibility, water erodibility, calcium carbonates, gypsum, sodium absorption ratio, low available water capacity, gypsum, shallow depth or pH. For the Colorado Plateau, a general model of areas most likely to contribute to the Dust on Snow effect was also created.

Data Basin – Wilburforce, Kresge, Ivey, IDB, IABIN, BLM Responsible for populating Consbio's online tool databasin.org with GIS data representing environmental data of interest to the conservation community.

PROFESSIONAL REGISTRATIONS AND PERMITS

Society of American Foresters

American Geophysical Union

Soil Science Society of America

PUBLICATIONS

Peterman, W.L. Using soil data to enhance modeling of forest responses to climate change. 2014. Doctoral dissertation, Oregon State University, Forest Engineering.

Peterman, W.L., R.H. Waring, T. Seager, W. Pollock. 2012. Soil properties affect pinyon-junper response to drought. Ecohydrology.

Peterman, W.L., D.M. Bachelet. Forest dynamics in response to climate change: a soils perspective, in Issues in Environmental Science and Technology: Soils and Food Security, ed Ron Hester, Royal Academny of Chemistry. 2012. Elsevier

Peterman, W.L., 2010. Predictive mapping of landtype association maps in three Oregon national forests. Masters thesis, Oregon State University. http://ir.library.oregonstate.edu/xmlui/handle/1957/16399

Peterman, W.L., 2009. Hypsometric analysis and geotectonics of the Troodos Mountain range, Cyprus. Comprehensive geological report to the government of Cyprus. Landscape Pedology and Digital Soil Mappings Labs, Oregon State University.

Peterman, W.L, Noller, J.S., 2009. Dhiarizos River: Estimating discharge in the Pleistocene era. Comprehensive geological report to the government of Cyprus. Landscape Pedology and Digital Soil Mappings Labs, Oregon State University.

Noller, J.S., Malone, M.R., Slevin, S., Peterman, W.L., Hash, S.J., 2009. Landtype associations of eastern Cascades slopes and foothills in Oregon: Fremont-Winema National Forest. Landscape Pedology and Digital Soil Mappings Labs, Oregon State University. Prepared under Cooperative agreement with the Pacific Northwest, Region Six, Portland, OR, USDA, Forest Service.

Peterman, W.L., Noller, J.S. 2008. Preliminary assessment of drainage density of watersheds of Cyprus. Comprehensive hydrological report to the Geological Survey of Cyprus. Landscape Pedology and Digital Soil Mappings Labs, Oregon State University.

SELECT PRESENTATIONS

Using soil data to enhance modeling of forest responses to climate change. Oregon State University, PhD dissertation presentation, June 4, 2014.

Combining Soils and Climate - spatially understanding potential drought impacts. Northwest Soil Council annual meeting, February, 21, 2014.

Soil vulnerability to future climate change. Webinar for the Southern Rockies Landscape Conservation Cooperative, March 20, 2013.

Using soils to predict changes in forest cover in response to climate change. Webinar for the North Pacific Landscape Conservation Cooperative stakeholders, July 16,2012.

Forecasting pinyon pine vulnerability to climate change using available soil characteristics. Society of American Foresters, National Meeting on Forests and Climate Change, May, 2011.