

## Susan J. Prichard

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### EDUCATION

- Ph.D. 2003 University of Washington, Seattle, Division of Ecosystem Science, College of Forest Resources. Advisor: Dr. David L. Peterson. Committee members: Drs. James Agee, Linda Brubaker, Robert Gara and Charlie Halpern
- M.S. 1996 University of Washington, Seattle, Division of Ecosystem Science, College of Forest Resources. Advisor: Dr. David L. Peterson. Committee members: Drs. Linda Brubaker, Robert Harrison, and Darlene Zabowski
- B.S. 1992 The Evergreen State College, Olympia, Washington

### PROFESSIONAL EXPERIENCE

- 2003– *Research Scientist. School of Environmental and Forest Sciences, University of Washington, Seattle.*
- 1998–2003 *Research Assistant. College of Forest Resources, University of Washington, Seattle.*
- 2000 *Instructor—graduate-level forest ecology course. College of Forest Resources, University of Washington, Seattle.*
- 1996–1998 *Forest Ecologist. The Pacific Forest Trust, Boonville, California.*
- 1993–1996 *Research and Teaching Assistant. Cooperative Park Studies Unit, University of Washington, Seattle.*
- 1992 *Botany Technician. US Forest Service Olympia Forest Sciences Laboratory, Olympia, WA.*
- 1991 *Field Assistant. University of New Mexico, Albuquerque, NM*
- 1990 *Laboratory Technician. Whitney Marine Biology Laboratory, St Augustine, FL.*
- 1989 *Wilderness Rehabilitation Crew. Detroit Ranger District, Willamette National Forest.*

### REFEREED PUBLICATIONS

- Prichard, S.J.** and Stevens-Rumann, C. *In prep.* Wildland fire-on-fire interactions: management implications under a changing climate. *Forest Ecology and Management.*
- Kennedy, M.C. and **Prichard, S.J.** *In prep.* Residual spatial autocorrelation in large datasets: performance of spatially explicit regression for simulated and empirical data. *Ecological Modeling.*
- Ottmar, R.D., Hudak, A.T., **Prichard, S.J.**, Wright, C.S., Restaino, J.C., Kennedy, M.C., and Vihnanek, R.E. *In review.* Pre- and postfire surface fuel and cover datasets collected in the southeastern United States for model evaluation and development – RxCADRE 2008, 2011, and 2012. *International Journal of Wildland Fire.*

- Prichard, S.J.**, Karau, E., Ottmar, R.D., Wright, C., Cronan, J. and Keane, R. 2014. A comparison of the Consume and FOFEM fuel consumption models using field data collected in the southeastern United States. *Canadian Journal of Forest Research* 44: 784-795.
- French, H.F., McKenzie, D., Erickson, T., Koziol, B., Billmire, K., Endsley, A., Yager-Scheinerman, N.K, Jenkins, L, Miller, M.E., Ottmar, R.D., and **Prichard, S.J.** 2014. Modeling regional-scale wildland fire emissions with the Wildland Fire Emissions Inventory System Earth Interactions 18:1-26.
- Prichard, S.J.** and Kennedy, M.C. 2014. Predicting fire severity following an extreme wildfire event: effects of fuel treatment, landform, and weather. *Ecological Applications* 24:571-590.
- Prichard, S.J.** and Kennedy, M.C. 2012. Fuel treatment effects on postfire tree mortality and beetle attack in dry mixed conifer forests, Washington State, USA. *International Journal of Wildland Fire* 21: 1004-1013.
- Ottmar, R.D., **Prichard, S.J.** Parresol, B.R. 2012. Fuel treatment effectiveness in forests of the Upper Atlantic Coastal Plain – an evaluation at two spatial scales. *Forest Ecology and Management* 272: 17-28.
- Hollis, J.J., Matthews, S., Ottmar, R.D., **Prichard, S.J.**, Slijepcevic, A., Burrows, N.D., Ward, B., Tolhurst, K.G., Anderson, W.R., and Gould, J.S. 2010. Testing woody fuel consumption models for application in Australian southern eucalypt forest fires. *Forest Ecology and Management*. 260: 948-964.
- Prichard, S.J.**, Peterson, D.L. and Jacobson, K. 2010. Fuel treatments alter the effects of wildfire in dry mixed conifer forest, north-central Washington, USA. *Canadian Journal of Forest Research* 40:1615-1626.
- Prichard, S.J.**, Gedalof, Z., Oswald, W.W., and Peterson, D.L. 2009. Holocene fire and vegetation dynamics in a montane forest, North Cascade Range, Washington, USA. *Quaternary Research* 72:57-67.
- Ottmar, R.D., Sandberg, D.V., Riccardi, C.L., and Prichard, S.J. 2007. An overview of the Fuel Characteristic Classification System – quantifying, classifying, and creating fuelbeds for resource planning. *Canadian Journal of Forest Research* 40:2383-2393.
- Riccardi, C.L., **Prichard, S.J.**, Sandberg, D.V. and R.D. Ottmar. 2007. Calculating physical characteristics of wildland fuels in the Fuel Characteristic Classification System. *Canadian Journal of Forest Research* 37: 2413-2420.
- Wright, C.S., **Prichard, S.J.**, Vihnanek, R.E. and Ottmar, R.D. 2006. Predicting fuel consumption from prescribed burning trials in western forest and shrublands. Proceedings of the 3<sup>rd</sup> International Fire Ecology and Management Congress, San Diego, CA.
- Prichard, S.J.** and D.L. Peterson. 2000. Carbon distribution in subalpine forests and meadows of the Olympic Mountains, Washington. *Soil Science Society of America Journal*.
- Candelario Martinez, A., Reed, D.M., **Prichard, S.J.**, Doble, K.E., Lee, T.D., Lesser, W., Price, D.A., and Greenberg, M.J. 1993. SCP-related peptides from bivalve mollusks - identification, tissue distribution, and actions. *Biological Bulletin* 185 (3): 428-439.
- Candelario, A., **Prichard, S.J.**, Lesser, W., Doble, K.E., Price, D.A., and Greenberg, M.J. 1990. Neurohumoral modulation of the gut and feeding organs of a clam. *American Zoologist* 30(4):a66.

**NON-REFEREED PUBLICATIONS**

- Prichard, S.J., Andreu, A.G., Ottmar, R.D. and Eberhardt, E.** *In prep.* Fuel Characteristic Classification System field sampling and fuelbed development guide.
- Prichard, S.J.,** Kennedy, M.C., and Ottmar, R.D. *In review.* Forest floor properties of common forest types in the Atlantic Coastal Plain, South Carolina. Research Paper, US Forest Service Pacific Northwest Research Station.
- Prichard, S.J.** and Ottmar, R.D. 2013. State of fire behavior models and their application to ecosystem and smoke management issues. SERDP/ESTCP Smoke Symposium Report. [https://www.serdp-estcp.org/content/download/28268/278889/version/1/file/Smoke\\_Symposium\\_Report\\_Feb242014.pdf](https://www.serdp-estcp.org/content/download/28268/278889/version/1/file/Smoke_Symposium_Report_Feb242014.pdf)
- Prichard, S.J.,** Sandberg, D.V., Ottmar, R.D., Andreu, A., Eagle, P., and Swedin, K. 2013. Fuel Characteristic Classification System version 3.0: technical documentation. PNW-GTR-887. US Forest Service Pacific Northwest Research Station, Portland, OR.
- Prichard, S.J.** 2007. Consume user's guide. [http://www.fs.fed.us/pnw/fera/research/smoke/consume/consume30\\_users\\_guide.pdf](http://www.fs.fed.us/pnw/fera/research/smoke/consume/consume30_users_guide.pdf)
- Wright, C.S. and **Prichard, S.J.** 2006. Biomass consumption during prescribed fires in big sagebrush ecosystems. In: Andrews, P.L., Butler, B.W. (eds). Fuels Management—how to measure success: Conference Proceedings 28-30 March 2006. Portland, OR. Proceedings Rocky Mountain Research Station RMRS-41. Fort Collins, CO.
- Prichard, S.J.,** Wright, C.S., Vihnanek, R.E., and Ottmar, R.D. 2008. Predicting forest floor and woody fuel consumption from prescribed burns in ponderosa pine forests. Proceedings of the Fire Behavior and Fuels Conference, Nov. 13-17, San Diego, CA.
- McKenzie, D., **Prichard, S.J.,** Hessel, A.E. and Peterson, D.L. 2004. Empirical/statistical approaches to modelling wildland fire in the Pacific Northwest, USA. Chapter 23 in L. Buse and A. Perera, eds. Emulating Natural Forest Landscape Disturbances: concepts and applications. Columbia University Press, New York, NY.
- Prichard, S.J.** 2003. Spatial and temporal dynamics of fire and vegetation change in Thunder Creek Watershed, North Cascades National Park, Washington. Ph.D. Dissertation, University of Washington, Seattle.
- D.L. Peterson, **Prichard, S.J.,** and McKenzie, D. 2000. Disturbance in mountain forests. *In* Price, M.F. and N. Butt. (eds.) Forests in Sustainable Mountain Development: a State of Knowledge Report for 2000. CABI Publishing, UK.
- Prichard, S.J.** 1996. Carbon storage in subalpine forests and meadows of the Olympic Mountains. M.S. Thesis, University of Washington, Seattle.
- Prichard, S.J.,** White, M., and Wayburn, L. 1996. Modeling carbon storage in redwood forests under different management scenarios. *In* LeBlanc, J. (ed.) Proceedings of the conference on coast redwood forest ecology and management, June 1996, Humboldt State University, Arcata, CA.

**GRANTS AND FELLOWSHIPS**

- 2015: JFSP Project 15-1-01-1 "Mapping fuels for regional smoke management and emissions inventories" Nancy French (PI), Michael Billmire (coPI), Maureen Kennedy (coPI), Sim Larkin (coPI), Don McKenzie (coPI) and Susan Prichard (coPI) (\$435k, pending)

- 2015: Western Wildland Environmental Threat Assessment Center “Integrated study of post-fire burn severity, vegetation recovery and forest insect activity following the 2014 Carlton Complex fires” David W Peterson (PI), Connie Mehmel (co-PI), Darci Dickinson (co-PI) and Susan Prichard (co-PI) (\$225k)
- 2014: JFSP Project 14-1-02-30 “Evaluation of past-fire burn mosaics on subsequent wildfire behavior, severity, and fire management strategies” Prichard (PI), Robert Gray (co-PI), Paul Hessburg (co-PI), Richy Harrod (co-PI), Penny Morgan (co-PI) and Camille Stevens-Rumann (co-PI) (\$402k)
- 2009: JFSP Project 09-1-01-09 “Landscape analysis of fuel treatment longevity and effectiveness in the 2006 Tripod Complex fires” Prichard (PI), David L. Peterson (co-PI) (\$150k)
- 2007: JFSP Project 07-1-2-13 “Do fuel treatments reduce fire severity? Evaluating treatment effectiveness in the 2006 Tripod Complex fires” Prichard (PI), David L. Peterson (co-PI) (\$357k)
- 2001: Canon National Parks Science Fellowship. (\$75k)
- 1991: National Science Foundation Research Experiences for Undergraduates, Summer Research Fellowship, Sevilleta LTER, University of New Mexico
- 1990: National Science Foundation Research Experiences for Undergraduates, Summer Research Fellowship, Whitney Laboratories, Florida.

#### **RECENT PROJECTS (CONTRACTS AND PROJECT MANAGEMENT)**

- 2014: US Forest Service Contract. “Evaluation of smoke and fuels management tradeoffs in the Lake Tahoe Basin” (co-PI, PI: Jonathon Long)
- 2014: Army Corp of Engineers Contract. “Prescribed fire emissions modeling and planning tool development for military installations of the southeastern US” (co-PI, PI: Roger Ottmar)
- 2013: Improving agricultural and wildland fire source emissions products and access to information for atmospheric science and smoke modeling applications. Phase 1 for NASA-ROSES A.35 Earth Science Applications: Wildland Fires. Feasibility Grant Number: NNX12AQ89G (co-PI; PI: Nancy French)
- 2011: Development of the Fuel and Fire Tools Application. (Project manager, American Recovery and Reinvestment Act)
- 2010-present: Fire Emission Production Simulator (project manager for the development, documentation, maintenance and support).
- 2009: Savannah River Landscape Fire Hazard contract, Southern Research Station (co-PI with Roger Ottmar and project manager)
- 2008: Vegetation mapping for the Middle Methow reach of the Methow River Basin, Bureau of Reclamation (PI)
- 2007: Building FCCS fuelbeds for the Savannah River Site (co-PI, PI: Roger Ottmar)
- 2006: Modification and validation of fuel consumption models for shrub and forested lands in the southwest, Pacific Northwest, Rockies, Midwest, Southeast and Alaska. JFSP Project 98-1-9-06. (co-PI, PI: Roger Ottmar)
- 2003–present: Project manager for the Fuel Characteristics Classification System (development, documentation, maintenance and support).
- 2005–present: Project manager for Consume (development, documentation, maintenance and support).

**INVITED PRESENTATIONS**

- Prichard, S.J. and Smith, G. 2013. When wildfires become fuel treatments: examples of the interactions of past wildfires with subsequent wildfires. Large Wildland Fires: Social, Political and Ecological Effects. May 19-23, 2014, University of Montana, Missoula, MT. Conference
- Prichard, S.J. 2013. Fuel treatment effectiveness in the Tripod Fire, Washington State. 2013 Western Wildfire Conference, Kelowna, BC. (Plenary)
- Prichard, S.J. 2011. Tripod study findings to the Okanogan-Wenatchee Leadership Team Meeting, Mazama, WA.
- Prichard, S.J., Kennedy, M.C., and Norheim, R. 2012. Fire severity following the 2006 Tripod Complex fires: effect of fuel treatment, landform, and weather. ForestSAT 2012: A Conference Promoting Science-Based Applications of Remote Sensing and Other Spatial Data in Forested Systems. Sept 11-14, 2012. Corvallis, OR.
- Prichard, S.J., and Peterson, D.L. 2004. Successional pathways and disturbance in a montane forest: interactions of fire, species dynamics, and environmental gradients. Mixed severity fire regimes: ecology and management. Spokane, WA. (Plenary)

**RECENT CONFERENCE PRESENTATIONS**

- Prichard, S.J., Karau, E.C., Ottmar, R.D., Keane, R.E., Cronan, J.B., and Wright, C.S. 2013. Validation of the Consume and FOFEM fuel consumption models in eastern US forests. 4<sup>th</sup> Fire Behavior and Fuels Conference, International Association of Wildland Fire, Raleigh Convention Center, NC.
- Prichard, S.J. and Kennedy, M.C. 2011. Landscape analysis of fuel treatment and wildfire severity in north-central Washington State. Interior West Fire Ecology Conference, Snowbird, UT.
- Prichard, S.J. and Peterson, D.L. 2012. Fire severity following the 2006 Tripod Complex fires: effects of fuel treatment, landform, and weather. Washington Prescribed Fire Conference February 2012, Wenatchee, WA.
- Prichard, S.J., Parresol, B.R., and Norheim, R.A. 2009. Landscape analysis of surface and crown fire potentials in southeastern US forest types. 4<sup>th</sup> International Fire Ecology and Management Congress, Savannah, GA.
- Prichard, S.J. and Peterson, D.L. 2010. Evaluating fuel treatment effectiveness in the 2006 Tripod Complex fires, Washington State, USA. 6<sup>th</sup> International Conference on Forest Fire Research, November 15-18, Coimbra, Portugal.
- Prichard, S.J., and Peterson, D.L. 2008. Evaluating treatment effectiveness in the 2006 Tripod Complex fires. Pacific Coast Fire Conference December 1-4, San Diego, CA.
- Prichard, S.J. and Peterson, D.L. 2004. Holocene fire and vegetation dynamics in a montane forest, North Cascade Range, Washington, USA. Ecological Society of America Meeting, Portland, OR.
- Prichard, S.J. 2003. Forest succession following fire along an elevation gradient, North Cascades National Park, WA. Ecological Society of America Meeting, Madison, WI.
- Prichard, S.J. 2000. Soil carbon distribution in subalpine ecosystems of the Olympic Mountains, Washington. University of Washington Conference on Carbon, Seattle, WA.

**TECHNICAL WORKSHOPS AND ECOLOGY CLASSES (INSTRUCTOR)**

July 2015	After the fire—weekend fire ecology field course, North Cascades Institute, WA
Feb 2015	Guest lecture—2014 Carlton Complex Fires: post-fire vegetation recovery. Methow Conservancy Course, Twisp, WA
Jan 2015	Rx410: Smoke management techniques, Redmond Training Center, US Forest Service, Redmond, OR (2007 to 2015)
Nov 2014	Workshop on fuel and fire tools. BIA Western Fuels Workshop, Portland, OR
Sept 2014	Guest lecture—fire ecology and management presentation, University of Idaho, Moscow, ID
May 2014	School of Environmental and Forest Science’s Spring Comes to the Cascades, Methow Field Trip, Mazama, WA (Spring 2013 and 2014)
Mar 2014	Prescribed vs. Wildfire Smoke Management Tradeoffs. EPA Smoke Management Meeting, Portland, OR
Mar 2013	Northeastern Oregon Regional Fuels Workshop, LaGrande, OR
Nov 2012	Fuel management tools for quantifying fire behavior and effects, Northern California Prescribed Fire Council Meeting, South Lake Tahoe, CA
Nov 2012	Guest lecture—Fire Ecology, UW-SEFS
July 2012	Northwest Naturalist Retreat—Fire Ecology. Weekend field course July 27-30, North Cascades Institute, WA
May 2012	Technical Fire Management module on fire and fuels management, Washington Institute, Bothell WA (May 2007 to 2012)
Jan 2012	Guest lecture—“Get to know your neighbors: major bark beetles and defoliators of Mazama” North Cascades Basecamp winter 2012-2013 ecology talks
Nov 2011	Southwest Regional Fuels Workshop, Interior West Fire Ecology Conference, Snowbird, UT
Aug 2011	Southeast Regional fuels Workshop. Ichauway, GA
Jan 2011	Guest lecture—“Introduction to Forest Ecology” Methow Conservancy Conservation Course, Twisp, WA
Nov 2010	Fire and fuels research tools workshop. 6 <sup>th</sup> International Conference on Forest Fire Research
Aug 2010	Northwest Naturalists Weekend. Weekend fire ecology course. North Cascades Institute, Diablo, WA
Apr 2010	Fuels Workshop - short course. Nat’l Wildland Fire Coordinating Group, Portland, OR
Apr 2010	Landscape Analysis of Surface and Crown Fire Potential in Southeastern US Forest Types. Region 8 presentation, Atlanta, GA
Nov 2009	Fire and fuel tools workshop. 4 <sup>th</sup> Int’l Congress on Fire Ecology and Management, Savannah, GA
Sept 2009	Fuel Treatment Effects Monitoring Workshop. Missoula Fire Sciences Laboratory, Missoula, MT
Apr 2009	PNW Regional Fuels Workshop. Bend, OR
Apr 2009	FCCS presentation to the National Interagency Fire Center. Boise, ID
Mar 2009	BIA Northwest and Rocky Mountains Fire and Fuels Meeting. Missoula, MT
Mar 2009	Okanogan-Wenatchee National Forest Fuels Workshop. Wenatchee, WA
Dec 2008	Southwest Regional Fuels Workshop. Pacific Coast Fire Conference, San Diego, CA

Aug 2008	Pacific Northwest Forest Ecology. North Cascades Institute weekend field course. Diablo, WA
May 2008	Southeast Regional Fuels Workshop. Orlando, FL
Apr 2008	Northern Idaho Regional Fuels Short Course. University of Idaho, Moscow, ID
Mar 2008	Fort Gordon Regional Fuels Workshop. Augusta, GA
Feb 2008	Northern Rockies Regional Fuels Workshop. Missoula, MT
Jan 2008	Okanogan-Wenatchee National Forest Fuels Workshop. Wenatchee, WA
July 2007	North Cascades Institute forest ecology weekend field course. Diablo, WA
Apr 2007	Northern Idaho Fuels Workshop. University of Idaho, Moscow, ID
Apr 2007	Southwest Regional Fuels Workshop, Albuquerque, NM
Mar 2007	Southeastern Regional Fuels Workshop – short course, 2 <sup>nd</sup> Fire Behavior and Fuels Conference, Destin, FL.
Mar 2007	Southern California Regional Fuels Workshop, San Luis Obispo, CA
Nov 2006	Northeastern Regional Fuels Workshop, OH
Aug 2006	Alaska Regional Fuels Workshop (FCCS, Consume), Fairbanks, AK
July 2006	Roots of Biodiversity North Cascades Institute forest ecology course (July 28-30), Diablo, WA
May 2006	PNW Regional Fuels Workshop, Bend, OR
Feb 2006	Hawaii Regional Fuels Workshop, Hilo, HI
Jan 2006	Southeast Regional Fuels Workshop, Joseph Jones Center, Ichauway, GA

#### **PROFESSIONAL AND PUBLIC SERVICE**

Member of the Technical Advisory Group of the Interagency Fuel Treatment Decision Support System (2014–present)

Member of review panel for Joint Fire Science Program proposals (2011, 2012, 2014 and 2015)

Advisor for the NASA Ames Research Center’s DEVELOP internship programs

- 2008: Burn severity assessment in the Okanogan-Wenatchee National Forest using NASA satellite missions
- 2009: Fuel treatments and carbon flux during a wildfire (Okanogan-Wenatchee NF)
- 2010: A geospatial assessment of mountain pine beetle infestations and their effect on forest health, Okanogan-Wenatchee National Forest

Ms Thesis Graduate Committee Member (Andi Stebelton), School of Natural Resources, University of Idaho, Moscow, ID

#### **PROFESSIONAL ORGANIZATIONS**

Association for Fire Ecology

International Association of Wildland Fire