

James A Lutz

Work: (206) 616-3827, Cell: (425) 495-5332

Web site: <http://faculty.washington.edu/jlutz>

Email: jlutz@uw.edu

EDUCATION

University of Washington

Seattle, WA

- PhD, Ecosystem Analysis, College of Forest Resources, 2008. Committee Chair; Jerry Franklin.
- MS, Ecosystem Analysis, College of Forest Resources, 2005. Committee Chair; Charlie Halpern.

Massachusetts Institute of Technology

Cambridge, MA

- MS/MBA, Sloan School of Management, 1985. Committee Chair; John Hauser.
- MS with industrial internship, Department of Electrical Engineering & Computer Science, 1985. Committee Chairs; Jon Allen and Burnie West (Schlumberger).
- BS, Electrical Engineering, 1985.

Awards

2011 – DISCCRS VI Scholar (Dissertations Initiative for the Advancement of Climate-Change Research); 2011 – School of Forest Resources Award for research funding; 2010 – School of Forest Resources Award for Outreach and Public Relations; 2007 – School of Forest Resources Faculty Teaching Award (Hon. Mention as non-faculty). Honor Societies: Xi Sigma Pi (Forestry), Eta Kappa Nu (Electrical Engineering), Sigma Xi (Science), UW Top Scholar Fellowship, NSF IGERT Fellowship, ARCS Fellowship, Byron and Alice Lockwood Fellowship, National Merit Scholarship.

Skills

Course work in fire, community, and landscape ecology, forest pathology, entomology, systematics, climatology, remote sensing, management of protected areas, wildland recreation and amenity management, transboundary ecological issues, restoration ecology, plant propagation, and wildlife conservation. Software: ArcGIS, ENVI, Matlab, Microsoft Office, Modtran, PC-ORD, R, S-Plus, SPSS, Trimble, and VB. Surveying experience with Trimble GPS, Haglöf hypsometer, and Nikon and Leica Total stations. Extensive international experience in project planning, management, and budgeting. More than 10 years' experience programming in C, C++, Perl, SQL on Unix/Linux.

PUBLICATIONS

Lutz JA, Martin KA, Lundquist JD (In press) Using fiber-optic distributed temperature sensing to measure ground surface temperature in thinned and unthinned forests. *Northwest Science*.

Kane VR, Gersonde R, **Lutz JA**, Bakker JD, McGaughey RJ, Franklin JF (2011) Forest structural variation at stand scales. *Canadian Journal of Forest Research* 41:2276-2291.

Lutz JA, Key CH, Kolden CA, Kane JT, van Wagendonk JW (2011) Fire frequency, area burned, and severity: A quantitative approach to defining a normal fire year. *Fire Ecology* 7(2):51-65.

Tarnay LW, **Lutz JA** (2011) Sustainable fire: preserving carbon stocks and protecting air quality as the Sierra Nevada warms. *Park Science* 28(1):48-55.

Littell JS, Oneil EE, McKenzie D, Hicke JA, **Lutz JA**, Norheim RA, Elsner MM (2010) Forest ecosystems, disturbance, and climatic change in Washington State, USA. *Climatic Change* 102:129-158.

Kane VR, Bakker JD, McGaughey RJ, **Lutz JA**, Gersonde R, Franklin JF (2010) Examining conifer canopy structural complexity across forest ages and zones with LiDAR data. *Canadian Journal of Forest Research* 40:761-773.

Kane VR, McGaughey R, Bakker JD, Gersonde R, **Lutz JA**, Franklin JF (2010) Comparisons between field- and LiDAR-based measures of stand structural complexity. *Canadian Journal of Forest Research* 40:774-787.

Lutz JA, van Wagendonk JW, Franklin JF (2010) Climatic water deficit, tree species ranges, and climate change in Yosemite National Park. *Journal of Biogeography* 37:936-950.

Lutz JA, van Wagendonk JW, Thode AE, Miller JD, Franklin JF (2009) Climate, lightning ignitions, and fire severity in Yosemite National Park, California, USA. *International Journal of Wildland Fire* 18:765-774.

Sprugel DG, Rascher KG, Gersonde R, Dovčiak M, **Lutz JA**, Halpern CB (2009) Use of stand maps and a light model to predict consequences of ecological thinning. *Ecological Modelling* 220:3565-3575.

Littell JS, Oneil EE, McKenzie D, Hicke JA, **Lutz JA**, Norheim RA, Elsner MM (2009) Forest ecosystems, disturbance, and climatic change in Washington State, USA. Chapter 7 in Climate Impacts Group (eds.) *The Washington Climate Change Impacts Assessment*.

Lutz JA, van Wagtenonk JW, Franklin JF (2009) Twentieth-century decline of large-diameter trees in Yosemite National Park, California, USA. *Forest Ecology and Management* 257:2304-2315.

Roberts S, van Wagtenonk JW, Kelt DA, Miles AK, **Lutz JA** (2008) Modeling the effects of fire severity and spatial complexity on small mammals in Yosemite National Park, California. *Fire Ecology* 4(2):83-104.

Kane VR, Gillespie AR, McGaughey R, **Lutz JA**, Ceder K, Franklin JF (2008) Interpretation and topographic correction of conifer forest canopy self-shadowing using spectral mixture analysis. *Remote Sensing of Environment* 112:3820-3832.

Lutz JA, Freund JA, Hagmann RK, Kane VR, Larson AJ, Franklin JF (2008) Mid-career graduate students in ecology. *Frontiers in Ecology and the Environment* 6:392-393.

Larson AJ, **Lutz JA**, Gersonde RF, Franklin JF, Hietpas FF (2008) Productivity influences the rate of forest structural development. *Ecological Applications* 18:899-910.

van Wagtenonk JW, **Lutz JA** (2007) Fire regime attributes of wildland fires in Yosemite National Park, USA. *Fire Ecology* 3(2):34-52.

Lutz JA, Halpern CB (2006) Tree mortality during early forest development: a long-term study of rates, causes, and consequences. *Ecological Monographs* 76:257-275.

H Index = 8 as of 1/1/2012

SUBMITTED

Lutz JA, Larson AJ, Swanson ME, Freund JA. Ecological importance of large-diameter trees in a temperate mixed-conifer forest.

Fisher EV, Mackay KRM, Cusack DF, DeSantis LRG, Hartzell-Nichols L, **Lutz JA**, Melbourne-Thomas J, Meyer R, Riveros-Iregui DA, Sorte CJB, Taylor JR, White SA. Pre-tenure interdisciplinary research: career risk or worthy challenge?

IN PREP.

Chisholm R, Muller-Landau H, Bourg N, Butt N, Cardenas D, Chang L, Chiang J, Condit R, Dattaraja HS, Dunmei L, Duque A, Fletcher C, Haifeng L, Harrison R, Howe R, Hubbell S, Juyu L, Kenfack D, Kiratiprayoon S, Larson AJ, **Lutz JA**, Ma K, McMahon S, McShea W, Meegaskumbura M, Mohd RS, Morecroft M, Oliveira A, Parker G, Pulla S, Rahman KA, Romero H, Ruwan PMSA, Schurman J, Su S, Sukumar R, Suresh HS, Thompson J, Thomas S, Valencia R, Vicentini A, Weiguo S, Wolf A, Yap S, Yadvinder M, Ye W, Yuan Z, Yue B, Zimmerman J. Relationships between species richness and ecosystem function across a global network of forest plots

Kolden CA, **Lutz JA**, Key CH, Kane JT, van Wagtenonk JW. The significant role and proportion of unburned area within fire perimeters.

Lutz JA, Halpern CB. Understory dynamics and canopy closure: life history, limiting factors, and changes in richness and abundance. To be submitted to *Ecology*.

Key CH, Benson NC, **Lutz JA**. Continental, regional, and individual fire analysis using continuous distributions of dNBR and RdNBR.

Kane VR, **Lutz JA**, Roberts S, Smith G, McGaughey RJ, Kane JT, Brooks M. Fire and the restructuring of forests in Yosemite National Park.

Lutz JA, Stephenson NL, Hannah L. Modeling and interpreting the effects of climate change in mountainous terrain: The effects of scaling. To be submitted to *Conservation Biology*.

Lutz JA, Kolden CA, Key CH, Gillespie AR. Using spectral mixture analysis to improve interpretations of fire severity in rocky landscapes. To be submitted to *Remote Sensing of Environment*.

Burke, R, McMahon S, Swanson ME, **Lutz JA**. Fuel loading and heterogeneity in the Yosemite Forest Dynamics Plot.

Larson AJ, Franklin JF, **Lutz JA**. Does tree mortality increase with site potential for primary production?

Roberts S, van Wagtendonk JW, Miles AK, Kelt DA, **Lutz JA**. Effects of fire severity on California spotted owl reproduction.

NON-REFEREED PUBLICATIONS

Kane VR, **Lutz JA** (2012) Fire and the restructuring of forests in Yosemite National Park. Final report to Yosemite National Park.

Lutz JA (2011) Scaling of climate change scenarios: Yosemite case study. Final report to The Nature Conservancy.

Knox JM, **Lutz JA** (2010) Return to the Yosemite Forest Dynamics Plot. *California Surveyor*, 162:10-12.

Moore R, **Lutz JA** (2009) Establishing the Yosemite Forest Dynamics Plot. *California Surveyor*, 159:14-17.

Lutz JA (2009) The water balance of the Okanogan River Watershed. Basin analysis prepared for the Okanogan Conservation District, Washington.

PRESENTATIONS

Lutz JA. DISCCRS VI Symposium (Introduction, Research Overview, Poster) Colorado Springs, October 22 – 29, 2011.

Lutz JA. Fire frequency, area burned, and severity: a quantitative approach to defining a normal fire year (Invited) Institute of Botany of the Chinese Academy of Sciences. Beijing, July 28, 2011.

Lutz JA. Climate, fire, and Implications of 2011 Snowpack in Yosemite. Yosemite National Park Fire and Aviation Management briefing. April 13, 2011.

Lutz JA. Yosemite Forest Dynamics Plot: 2010 (Invited) National Park Service regional on-line program. November 10, 2010.

Lutz JA. Yosemite Forest Dynamics Plot: 2010 (Invited Poster and Presentation) AAAS Pacific Division 91st Annual Meeting. Ashland, Oregon, June 16, 2010.

Lutz JA. Fire and the Yosemite Forest Dynamics Plot (Invited) Yosemite Fire Science Symposium. Yosemite National Park. April 27, 2010.

Lutz JA. Using Landsat and LiDAR to quantify post-fire structural forest changes. (Invited) Yosemite Fire Science Symposium. Yosemite National Park. April 28, 2010.

Lutz JA. Climate, fire, and Yosemite's big trees (Invited) National Parks Conservation Association Fresno forum, September 25, 2009.

Lutz JA. Climate, fire, and vegetation change in Yosemite National Park (Invited) Yosemite Forum, Yosemite National Park. June 9, 2009.

Lutz JA. Climate matters: Washington forests in the 21st century (Invited) Denman Lecture Series—The Future of Forestry in the Pacific Northwest. May 14, 2009. ([Televised](#)).

Lutz JA, van Wagtendonk JW, Franklin JF. Twentieth-century decline of large-diameter trees in Yosemite National Park, California, USA ([Presentation](#)). CEREC, Bishop, CA, November 5—8, 2008.

Lutz JA, van Wagtendonk JW, Thode AE, Miller JD, Franklin, JF. Climate, lightning ignitions, and fire severity in Yosemite National Park, California, USA ([Presentation](#)). CEREC, Bishop, CA, November 5—8, 2008.

Lutz JA, van Wagtendonk JW, Franklin JF. Describing forests in Yosemite National Park with annual actual evapotranspiration and deficit: improving spatial resolution of gridded climate models with soil and topographic data ([Poster](#)). CEREC, Bishop, CA, November 5–8, 2008.

Lutz JA. [Graduate student address](#). College of Forest Resources commencement. June 13, 2008.

DISSERTATION **Lutz JA** (2008) *Climate, fire, and vegetation change in Yosemite National Park*. Dissertation. University of Washington, College of Forest Resources. Seattle, Washington.

THESES **Lutz JA** (2005) *The contribution of mortality to early coniferous forest development*. Master's Thesis. University of Washington, College of Forest Resources. Seattle, Washington.

Lutz JA (1985b) *Rule-based design management*. Master's Thesis. Massachusetts Institute of Technology, Department of Electrical Engineering and Computer Science. Cambridge, Massachusetts.

Lutz JA (1985a) *Competitive strategy in the electronics computer aided engineering industry*. Master's Thesis. Massachusetts Institute of Technology, Sloan School of Management. Cambridge, Massachusetts.

SERVICE Associate Editor: *Fire Ecology*.

Manuscript and proposal reviewer: *Canadian Journal of Forest Research, Ecological Applications, Ecology, Fire Ecology, Forest Ecology and Management, Geophysical Research Letters, Global Ecology and Biogeography, International Journal of Wildland Fire, Journal of Ecology, US National Park Service, New Forests, Northwest Science, Plant Ecology, Remote Sensing of Environment, Restoration Ecology, US Geologic Survey*.

Grant review: 2010 School of Forest Resources Equipment Grants (chair), 2009 Kearney Foundation Grants, 2009 CTFS Research Grants Panel.

Committees: PhD: Mark Raleigh (Civil Engineering); MS: Kendall Becker (Forest Ecology)

Organized session: ESA 2012, Global comparisons in forest dynamics – results from permanent plots

Regular guest lecturer at University of Washington in landscape ecology, fire ecology, remote sensing, and forest management. Arranged BBC television, radio, and web coverage of YFDP and WFDP, broadcast internationally.

EMPLOYMENT **University of Washington College of the Environment** *Research Scientist* **Seattle, WA**
2/11 to Present

Investigate long-term vegetation change in western coniferous forests including climate-fire relationships (Landsat), spatial and structural patterns of fire in Yosemite National Park (LiDAR/Landsat), multi-decadal trends in carbon sequestration in the presence of fire in Sequoia Kings Canyon and Yosemite National Parks, relationships between canopy structure and snow accumulation and retention. Supervise undergraduate senior projects and theses. Grants received as PI or Co-PI: 05/2009 to 12/2011: \$1,090,857 (UW portion, cash basis).

Principal Investigator, Yosemite Forest Dynamics Plot. Developed project plan, secured funding, applied for and received permissions from Yosemite National Park, and organized three largely volunteer (undergraduate students, graduate students, ecologists and citizens) research pulses to complete tree mapping in 25.6 ha (35,000 tagged stems). Teach associated field class "Ecology of the Sierra Nevada". Manage field staff, work-study students and undergraduate research. Project web site: <http://www.yfdp.org> Co-Investigators: Andrew Larson, University of Montana; Mark Swanson, Washington State University.

Principal Investigator, Wind River Forest Dynamics Plot. Developed project plan, secured funding, applied for and received permissions from Gifford Pinchot National Forest, and coordinated plot establishment with other research at this NEON-affiliated, Smithsonian-affiliated, 25.6 ha permanent plot (35,000 tagged stems). Project web site: <http://www.wfdp.org> Co-Investigator: Andrew Larson.

EMPLOYMENT

- 8/08 to 2/11 *Research Associate:* Analyze relationships between understory and overstory during canopy closure in *Pseudotsuga–Tsuga* forests, effects of scaling on species envelope models and climate change.
- 7/03 to 8/08 *Pre-doctoral Instructor:* Graduate Forest Community Ecology (<http://cfr501.jamesalutz.com>).
Teaching Assistant: Ecosystem Management in the Sierra Nevada, Wildland Recreation and Amenity Management, Society and Sustainable Environments.
Curriculum Development: Assisted development of core classes in ecological and social aspects of forestry (including content, lectures, field exercises, and web delivery).
Research Assistant: Analyzed permanent sample plot overstory data from the canopy closure phase of forest development in a *Pseudotsuga–Tsuga* forest. Field work at H. J. Andrews Experimental Forest and Cedar River Watershed. Led field crews of paid staff, volunteers and interns.
- 2/01 to 7/03 **HSBC Investment Bank** *Managing Director and Global Head of Securities IT* London, England
Responsible for HSBC's equity related systems world-wide (cash, derivatives, research, corporate finance, customer relationship management, revenue analysis, risk, middleware, global order routing, and web delivery). Supported IT development for 8000 person organization. Managed international development teams. Concentrated on automating order flow, quantitative trading, and decreasing development times. Mentored staff in quantitative techniques, project management, and quality improvement. Reported to Investment Banking CEO and HSBC Group IT Manager. Annual budget: 100MM. Direct headcount: 289.
- 1/99 to 2/01 **Hidden Light Consulting** *Principal* Bellevue, WA
Provided capital markets consulting. Specialized in exchange systems, straight through processing and process automation. Customers: HSBC Japan, Sanwa Securities Japan, Templeton Japan.
- 12/96 to 12/98 **HSBC Securities Japan** *Head of Front Office Systems* Tokyo, Japan
Responsible for all trading systems; reported to Head of Trading. Implemented system using HP-UX and Sun servers, Windows NT clients, Sybase, TIBCO, Cisco, Netscape, and Trimble GPS. Responsible for arbitrage decision support calculations, volume-weighted average price (VWAP) crossing automation, and automated link to back office. Developed statistical VWAP trading model. Implemented mostly paperless trading. Budgeted and reported project progress to HK and UK headquarters. Developed intranet for documentation and training. All systems designed with extensive auditing capabilities. In-house team of five and vendor staff of 12 used Visual Basic, Visual C++, Perl, HP Softbench, Purify and Quantify, Linux, Apache and GNU. Systems implemented on "no single point of failure" philosophy.
- 12/93 to 12/96
6/95 to 12/96 **Lehman Brothers** *Vice President Trading Services* Tokyo, Japan
Responsible for Japanese index arbitrage technology. Improved transaction throughput and mean time to repair (MTTR) through bottleneck analysis and queue simulation. Developed Ministry of Finance required tracking for restricted stock tracking. Managed development of Osaka Stock Exchange futures system and Baikai display. Very familiar with trading techniques for stocks, warrants, convertible bonds, futures and options on the Tokyo and Osaka stock exchanges (TSE and OSE). Developed profitable statistical arbitrage model for TSE First Section stocks. Used BARRA (risk modeling), FAME (historical analysis) and parallel analytics running on 20+ Sun workstations. Advised bankers and clients on trading technologies and extended character set (CJK) software. Extensive n+1 system redundancy.
- 12/93 to 6/95 Managed market data and distribution systems in Japan, Hong Kong and Singapore (10MM budget). Saved 2MM per year while user count increased 25%. Project completed in 18 months, under budget – cash costs were met as due through cash savings. Re-negotiated contracts; cut vendors 20%. Developed calculators (rate contribution, real time ratio calculation, Black-Sholes implied volatilities). Implemented Singapore system in new facility; Hong Kong system during restack.

- 7/92 to 12/93 **Teknekron Software Systems** *Client Technical Services Regional Manager Asia* **Tokyo, Japan**
 Managed projects for CSFB, J.P. Morgan, and NAB throughout Asia. Responsible for 800K direct revenues and 5MM indirect revenues. Involved in consulting, sales, proposal generation, customer management and product specification. Negotiated contracts, license agreements, pricing policies, collections and channel management. Established distributors in Australia, HK and Singapore.
- 6/88 to 7/92 **Micrognosis** *Manager Trading Room Technology* **New York, NY**
 6/91 to 7/92
 Projects in dealing room design, cost optimization, trading network design, and network throughput optimization. Familiar with derivative and portfolio pricing, distributed computation, and market data services.
- 1/89 to 6/91 *Manager Trading Room Technology* **Tokyo, Japan**
 Manager for 15MM Mitsubishi Bank project. Supervised software sales, development, integration and acceptance. System "cut over" on schedule (70% new components). Handled software product line Japanization. Repackaged products for Japanese market, increasing profit. Made presentations to the financial community – audiences up to 1500 people. Technical liaison with distributor. Advised CEO on channel strategy. Consulted clients on risk management system integration.
- 6/88 to 1/89 *Product Manager* **Campbell, CA**
 Marketing Manager for trading software. Presented products to sales force and distributors. Set pricing and discount structures (profit responsibility). Developed product and sales documentation.
- 1982-1988 **Schlumberger Technologies** *Project Leader* **San Jose, CA**
 12/86 to 6/88
 Developed object oriented graphical programming environment for Automatic Test Equipment (ATE). Supervised four engineers and capital budget of 360K. Developed sales presentations and software demonstrations.
- 9/85 to 12/86 *Senior Product Marketing Engineer*
 Analyzed ATE market growth rates, competition, finances, sales strategies, products and pricing. Managed X.25 network project. Recruited at MIT, RPI and Cornell.
- 1982-1985 *Associate Engineer and Summer Intern* (Summer '82, Summer '83, 7/84-1/85)
 Developed extensible, rule based Computer Aided Engineering (CAE) software. Designed, built, programmed and characterized high accuracy (± 10 pS) timing circuits and test fixtures.
- BACKGROUND** Language skills: intermediate Japanese; college French. Hobbies: mountain sports, photography, primitive skills. Extensive experience rock climbing and backcountry skiing. High School: Friends School of Baltimore. Married with two daughters, 19 and 17. FCC radio licenses: GROL/Radar, GMDSS Operator/Maintainer, Amateur (KD7GJN). Wilderness First Responder. Keen outdoorsman.