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EDUCATION

- Ph.D. (2001) Operations Research and Forest Management Science, Oregon State University,
Corvallis, OR
- Thesis title: Optimizing Spatial and Temporal Aspects of Land Management
Actions under Economic and Ecological Objectives
- Field areas: Finance; Management Science; Economics; Applied Statistics.
- M.S. (1998) Major: Operations Research, Oregon State University, Corvallis, OR
Minor: Applied Statistics.
- B.S. (1993) Major: Mathematics and Statistics, Miami University, Oxford, OH
Concentration: Finance.

PROFESSIONAL EXPERIENCE

- Principal (2014 – present):
Nalle Consulting LLC
Market and non-market valuation, analysis, and forecasting
- Research Economist (2011-2014)
USDA Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory
National wildland fire financial risk forecasting and budget allocation
- Consultant (2009-2010)
Economic Modeling Specialists International
Expert witness for Exelon Corporation; employment forecasting for Sheikha
Mozah bint Nasser Al Missned, Head of the Qatar Foundation; green jobs
development for the Pennsylvania Dept. of Labor and Industry; other.
- Affiliate Instructor (2009 – 2010, 2015-present)
University of Idaho: College of Natural Resources, College of Business and Economics
Faculty advisor, Rotchford T. Barker Capital Management and Trading Program
Instructor: Finance, Strategic Analysis, Case Studies in Finance, Advanced
Futures Trading, Natural Resource Economics
Student mentor in options and futures trading

Assistant Professor (2005 – 2009):

University of Idaho: Department of Forest Products

Courses taught: Economics for Natural Resource Managers (undergraduate)
Timber harvest scheduling (undergraduate/graduate)
College of Natural Resources Senior Capstone
Forecasting (undergraduate)
Advanced Trading I and II (undergraduate/graduate)
Advanced Forest Mensuration (undergraduate/graduate)

Faculty advisor, Rotchford T. Barker Capital Management and Trading Program

PhD advisees: Keith Coulter (USA), 2008-2009:

“Forecasting the state of the U.S. forest products industry”

Miguel Henry (Chile), 2006-2008:

“Ecosystem pricing”

Assistant Professor (2003 – 2005):

University of Nevada, Reno: Department of Resource Economics

Courses taught: Quantitative Methods in Resource Economics (graduate),
Decision Analysis (undergraduate)
Introduction to Statistics (undergraduate)
Independent Study (graduate).

Nominated for University of Nevada Teacher of the Year (2005).

University of Nevada, Reno Institutional Lead for U.S. EPA Tahoe Regional Planning Agency and Science and Monitoring Advisory Group member (2002-2005):

Coordinating research activities and involvement; advising TRPA Board of Executives on science issues; recommendation of projects and allocation of research funds.

Research Assistant Professor (2001 – 2003):

University of Nevada, Reno: Department of Resource Economics

Courses taught: Introduction to Statistical Methodology, Independent Study.

Red Star Fire Interdisciplinary Team Core Member, Tahoe N.F. (2001-2003):

Economic and policy analysis consultant; Red Star Fire Environmental Impact Statement; public education and outreach.

Graduate Research Assistant:

(1998 – 2001) Oregon State University: Department of Forest Resources.

(1998) Pacific Northwest Tree Improvement Cooperative, Corvallis, OR

(1997-1998) Intel Corporation, Aloha, OR

Principal and Lead Consultant (1998 – 2000):

Nalle Consulting, Inc., Corvallis, OR

Duties: Optimization, simulation, and statistical analysis and survey design for various forestry, range, economic, agricultural, forestry, fisheries, and human performance problems; tutorial services; business management.

Rights sold with profit.

Graduate Teaching Assistant (1995-1998, 2000-2001):

Oregon State University: Department of Forest Resources and Department of Statistics.

Graduate: Linear Programming; Nonlinear Programming; Stochastic Processes; Micro Economic Theory; Mathematical Statistics I and II.

Undergraduate: Forest Economics I and II; Introduction to Statistics; Statistics for Engineers; Regression Analysis.

Data Analyst (1994-1995):

Battelle Pacific Northwest Laboratory, Richland, WA

Duties: modeling physical and chemical properties of high-level nuclear waste containers.

SKILLS AND OTHER EXPERIENCE

Legal and Actuarial internships; computer programming (C, MATLAB, etc.); comfortable with operating systems (Windows, UNIX, LINUX) and software packages (AMPL, GAMS, LINDO, IMPLAN, ArcInfo, SAS, R, etc.); intermediate Spanish, beginning Russian.

PUBLICATIONS

(Peer-reviewed manuscripts)

Paveglio, T.B. , **Nalle, D.J.**, Edgeley, C. 2016. Measuring expected structure damage from wildland fire based on ownership attributes: a case study in Whitefish, Montana. *The International Journal of Wildland Fire*. In review.

Nalle, D.J., Hand, M.S. 2016. Optimal budget allocation among heterogeneous spatial loss functions: an application in wildland fire. In review.

Thompson, M.P., Hand, M.S., Gilbertson-Day, J.W., Vaillant, N.M., **Nalle, D.J.** 2013. Hazardous fuel treatments, suppression cost impacts, and risk mitigation. Proceedings of the fourth international symposium on fire economics, planning, and policy: climate change and wildfires. Gen. Tech. Rep. PSW-GTR-245.

Epanchin-Niell, R., **Nalle, D.J.**, Englin, J. 2009. Investing in rangeland restoration in the Arid West, USA: Countering the effects of an invasive weed on the long-term fire cycle. *Journal of Environmental Management* 91(2):370-379.

Shook, S.R., Plesha, N., and **Nalle, D.J.** 2009. Does cointegration of North American species of softwood lumber prices imply nearly perfectly substitutable products? *Canadian Journal of Forest Research* 39(3):553-565.

Shook, S.R., Soria, J.A., and **Nalle, D.J.** 2007. Examination of North American softwood lumber species substitution using discrete choice preferences and disaggregated markets. *Canadian Journal of Forest Research* 37(12):2521-2540.

Nalle, D.J. 2005. A comparison of fixed-site and non-fixed-site approaches for species protection. 2nd Special issue of *Environmental Modeling and Assessment* 10(3):229-238.

Nalle, D.J., Arthur, J.L., and Montgomery, C.A. 2005. Economic impacts of adjacency and green-up constraints for harvest scheduling. *Journal of Forest Economics* 10(4):189-205.

Bower, A.D., Adams, W.T., Birkes, D., and **Nalle, D.J.** 2005. Response of annual growth ring components to soil moisture deficit in young, plantation grown Douglas-fir in coastal British Columbia. *Canadian Journal of Forest Research* 35(10): 2491-2499.

Nalle, D.J., Montgomery, C.A., Arthur, J.L., Schumaker, N.H., and Polasky, S. 2004. Modeling joint production of wildlife and timber. *Journal of Environmental Economics and Management* 48(3):997-1017.

Nalle, D.J., Schumaker, N.H., Montgomery, C.A., Arthur, J.L., and Polasky, S. 2004. Estimating extinction risk with spatial and temporal measures. *Computers, Environment, and Urban Systems*, in review.

Slawta, J.N., Wilcox, A.R., McCubbin, J.A., **Nalle, D.J.**, Fox, S.D., and Anderson, G. 2003. Health behaviors, body composition, and coronary heart disease risk in women with multiple sclerosis. *Archives of Physical Medicine and Rehabilitation* 84(12):1823-1830.

Nalle, D.J., Arthur, J.L., and Sessions, J. 2002. Designing compact and contiguous reserve networks with a hybrid heuristic approach. *Forest Science* 48(1):59-68.

Nalle, D.J., Arthur, J.L., Montgomery, C.A., and Sessions, J. 2002. Economic and spatial impacts on an existing reserve network on future augmentation. Special issue of *Environmental Modeling and Assessment* 7(2):99-105.

Calkin, D., Montgomery, C.A., Schumaker, N.H., Polasky, S., Arthur, J.L., and **Nalle, D.J.** 2002. Developing a production possibility set of wildlife species persistence and timber harvest value using simulated annealing. *Canadian Journal of Forest Research* 32: 1329-1342.

Slawta, J.N., McCubbin, J.A., Wilcox, A.R., Fox, S.D., **Nalle, D.J.** and Anderson, C.L. 2002. Coronary heart disease risk between active and inactive women with multiple sclerosis. *Medicine and Science in Sports and Exercise* 34(6):905-912.

Arthur, J.L. and **Nalle, D.J.** 1997. Clarification on the use of linear programming and GIS for land-use modeling. *International Journal of Geographical Information Science*, Vol. 11(4):397-402.

(Peer-reviewed proceedings papers)

Nalle, D.J. and Arthur, J.L. 2004. Transportation costs and biodiversity: an application in forestry. Fifth Triennial Symposium on Transportation Analysis. Le Gosier, Guadeloupe, French West Indies.

Niell, R., **Nalle, D.J.**, and Englin, J. 2004. Modeling economic and ecological benefits of post-fire revegetation in the Great Basin: an application of Markov processes. Proceedings of Annual Meeting of the American Agricultural Economics Association.

Montgomery, C.A., Calkin, D., Schumaker, N.H., Polasky, S., Arthur, J.L., and **Nalle, D.J.** 2000. Modeling the compatibility of biological and economic objectives on a forested landscape. Proceedings of the 2000 International Institute of Fisheries Economics and Trade Conference, Corvallis, OR.

Arthur, J.L. and **Nalle, D.J.** 2000. Quadratic zero-one problems with generalized lower bound constraints. Proceedings of the International Workshop on the Quadratic Assignment Problem and Extensions, Kasetsart University, Thailand.

Arthur, J.L., Montgomery, C.A., Calkin, D., **Nalle, D.J.**, Polasky, S., Schumaker, N. 1999. Balancing economics and conservation in forest land management. Proceedings of the Fifth International Conference of the Decision Sciences Institute, Athens, Greece.

(Book chapters and other)

Shonkwiler, S. and **Nalle, D.J.** Testing for random utility maximization. Exploring Frontiers in Applied Economics, Essays in Honor of Stanley R. Johnson. Berkeley Electronic Press, 2006.

Nalle, D.J. “Optimization in nature reserve site selection”, in Systems Analysis in Forestry, eds. T. Barrett and G. Amacher, Society of American Foresters, Bethesda, MD 2003.

(Non-technical)

Nalle, D. and O’Laughlin, J. 2007. “Can U.S. forest owners profit from carbon markets?”. Western Forester 52(2).

O’Laughlin, J. and **Nalle, D.** 2007. “Carbon and forest management: markets, wildfires, and air quality”. Western Forester 52(2).

“Red star restoration project: FEIS”, K. Jones: Interdisciplinary Team Leader, Tahoe National Forest, November 2002, http://www.r5.fs.fed.us/tahoe/management/star_restoration/red_star_feis/start_here.htm.

Adams, W.T., Anekonda, T., Bauer, A., and **Nalle, D.J.** 2000. Genetic heritability of response to drought in coastal Douglas-fir. Pacific Northwest Tree Improvement Cooperative Annual Report.

Nalle, D.J. and Arthur, J.L. 1999. Developing heuristic algorithms for combinatorial problems in resource management. Dept. of Statistics Technical Paper, Oregon State University, Corvallis, OR.

NATIONAL AND INTERNATIONAL PRESENTATIONS

Nalle, D.J. 2007. Carbon: the new commodity. INFORMS International Meeting. San Juan, Puerto Rico.

Nalle, D.J. 2007. Optimizing a carbon portfolio. INFORMS Annual Meeting. Seattle, WA.

Nalle, D.J. 2005. Spatial bundling strategies. INFORMS Annual Meeting, San Francisco, CA.

Nalle, D.J. 2005. Land use, conservation, and dynamic network analysis. INFORMS Computing Society Conference, Annapolis, MD.

Niell, R., **Nalle, D.J.**, and Englin, J. 2005. Modeling economic and ecological benefits of post-fire revegetation in the Great Basin: an application of Markov processes. Annual Meeting of the American Agricultural Economics Association, Denver, CO.

Nalle, D.J. 2004. Changes in systemic variable costs of timber harvest under certification-type restrictions. INFORMS Annual Meeting, Denver, CO.

Nalle, D.J. and Arthur, J.L. 2004. Transportation costs and biodiversity: an application in forestry. Fifth Triennial Symposium on Transportation Analysis. Le Gosier, Guadeloupe, French West Indies.

Nalle, D.J. 2003. Generalizations of optimization for species protection. SAF Symposium on Systems Analysis in Forest Resources, Stevenson, WA.

Arthur, J.L. and **Nalle, D.J.** 2003. Optimization of conservation planning methods. EURO/INFORMS Joint International Meeting, Istanbul, Turkey.

Nalle, D.J. 2003. Fixed- and non-fixed-site methods for species protection: comparisons for understanding and dialogue. USDA W-1133 Annual Meeting, Las Vegas, NV.

Shonkwiler, S. and **Nalle, D.J.** 2003. Testing for random utility maximization. Exploring Frontiers in Applied Economics, a Symposium in Honor of Stanley R. Johnson, Ames, IA.

Nalle, D.J., and Arthur, J.L. 2002. Predicting the efficacy of harvest practice restrictions on species populations. INFORMS Annual Meeting, San Jose, CA.

Nalle, D.J., Montgomery, C.A., Arthur, J.L., Polasky, S. 2002. Finding efficient management strategies for timber production and species conservation. Western Forest Economists Annual Meeting, Mt. Hood, OR.

Nalle, D.J., Arthur, J.L., Montgomery, C.A., Polasky, S. 2002. Economic impacts of adjacency and green-up constraints for harvest scheduling. Invited presentation at Symposium on Systems Analysis in Forestry, sponsored by IFORS and IUFRO, Punta de Tralca, Chile.

Polasky, S., Montgomery, C.A., Arthur, J.L., **Nalle, D.J.**, and Schumaker, N. 2002. Land management with ecological and economic objectives. Economic Analysis and Land Use Policy: Proceedings of the U.S. Environmental Protection Agency's Office of Economy and Environment and National Center for Environmental Research and Quality Assurance.

Montgomery, C.A., **Nalle, D.J.**, Arthur, J.L., Polasky, S., and Schumaker, N. 2002. Land Management with Ecological and Economic Objectives: Developing a Production Possibility Set of Wildlife Species Persistence and Timber Harvest Value. ASSA Annual meeting, Atlanta, GA.

Nalle, D.J., Montgomery, C.A., Arthur, J.L., Polasky, S., and Schumaker, N. 2001. Finding efficient combinations of economic and ecological landscape uses. Invited presentation at INFORMS General Meeting, Miami Beach, FL.

Nalle, D.J., Arthur, J.L., Montgomery, C.A., and Sessions, J. 2001. The effect of existing reserves on optimal reserve design. Invited presentation at INFORMS General Meeting, Miami Beach, FL.

Nalle, D.J., Arthur, J.L., Montgomery, C.A., and Sessions, J. 2000. Designing compact and contiguous reserve networks under a budget constraint. SAF Symposium on Systems Analysis in Forest Resources, Snowmass Village, CO.

Nalle, D.J. and Arthur, J.L. 2000. Comparison of heuristic algorithms in sustainable land management. Invited presentation at INFORMS General Meeting, Salt Lake City, UT.

Nalle, D.J., Montgomery, C.A., Arthur, J.L., Schumaker, N.H., Polasky, S., Calkin, D. 2000. Maximal species survival as a function of timber harvest volume. INFORMS General Meeting, Salt Lake City, UT.

Nalle, D.J. and Arthur, J.L. 1998. Extensions of a decomposition-type genetic algorithm for multiple objective design. INFORMS General Meeting, Seattle, WA.

Nalle, D.J. and Arthur, J.L. 1997. A genetic algorithm with decomposition. SIAM 45th Anniversary Meeting, Palo Alto, CA.

REFeree ACTIVITY

American Journal of Agricultural Economics
Computational Statistics and Data Analysis
Computers and Operations Research
Environmental Modeling and Assessment
European Journal of Operations Research
Forest Products Journal
Forest Science
Interfaces
International Journal of Wildland Fire
International Transactions in Operations Research
Journal of Environmental Economics and Management
Journal of Environmental Management
McGraw-Hill (economics textbooks reviewer)
Operations Research
Southern Nevada Public Land Management Act proposal coordinator and reviewer (2004-2005, 2008-2009)

GRANT ACTIVITY

\$285,447	Co-PI: "Evaluating spatiotemporal tradeoffs under alternative fuel management and suppression policies: measuring returns on investment", (2013-2016). Joint Fire Science Program.
\$74,000	PI: "Estimating softwood lumber and panel price relationships and distortions from imperfect spot price information", (2008-2010). USDA Wood Utilization Research
\$209,370	PI: "Human, physical, and natural capital investment in Patagonia: a predictive approach under the sustainability criterion", (2007-2009). National Science Foundation.
\$118,500	PI: "Simultaneous optimization of public captured benefits and firm lease revenue from large land holdings: welfare effects and policy implications", (2006-2008). USDA McIntire-Stennis Program.
\$52,693	Co-PI: "Supplier reaction to news: effect of information disclosure on lumber future prices, wholesale prices, and production response", (2006-2008). USDA Wood Utilization Research.
\$11,295,717 (\$590,593)	Sub-PI: "A regional experiment to evaluate effects of fire and fire surrogate treatments in the sagebrush biome", (2005-2009). Invited submission by Joint Fire Science Program.
\$143,120	Co-PI: "Interactions between ungulate species and rangeland in Nevada", (2004-2006). Arid Rangeland Initiative.
\$74,000	Co-PI: "Valuing catastrophic wildfire risk reduction activities", (2004-2005). USDA.

PROFESSIONAL SERVICE

Institute for Operations Research and Management Science

- INFORMS International Puerto Rico (2007) Program Committee Co-chair and Contributed Sessions Chair
- Foresty Cluster organizing committee member (2002, 2004)

Society of American Foresters

- Symposium on Systems Analysis in Forest Resources (2003): program committee member
- Officer of E4 working group in Management Science and Operations Research

17th Triennial Conference of the International Federation of Operations Research Societies (2005)

- Cluster on Renewable and Natural Resources organizing committee co-chair

OUTREACH

2007: Invited presentation to Idaho State legislators on state carbon policy.

2004: Lake Tahoe Summit, by Invitation of U.S. Senator Harry Reid.

2003-2006: Technical advisory board to KOLO-TV News-channel 8 and the Lake Tahoe Environment Education Coalition weekly initiative for public education to improve environmental and socioeconomic conditions at Lake Tahoe. “The Lake Tahoe Report” television segments received the Gold Award from the Association of Natural Resource Extension Professionals.

2003: Determination of poker odds and special payouts for John Acshuaga’s Nuggett Casino, Reno, NV.