Peter Daugherty

Private Forests Division Chief, Oregon Department of Forestry
2600 State St, Salem, OR 97310

Resume
August 2016

Education:

Ph.D. **Wildland Resource Science 1991.** Field of study**:** Forest Management and Economics. University of California, Berkeley. Dissertation: The Credibility of Forest Planning: Dynamic Inconsistency in Linear Programming Based Forest Planning. Dates Attended 1985-1991.

B.S. **Forestry 1984.** University of California, Berkeley. Dates Attended 1982-1984.

A.B. **Political Science / Dramatic Art 1976.** University of California, Berkeley. Dates Attended 1972-1976.

Academic experience

1998-2007. Associate Professor, School of Forestry, Northern Arizona University. Area of Teaching and Research: Forest Management and Ecological Economics.

2002-2003. Interim Chair, School of Forestry, Northern Arizona University.

1992-1998. Assistant Professor, School of Forestry, Northern Arizona University. Area of Teaching and Research: Forest Management and Ecological Economics.

1988-1989. Lecturer, School of Forestry, University of California, Berkeley. Area of Teaching: Forest Management.

Positions Held: Academic, professional, and research.

2011-pres. **Private Forests Division Chief, Oregon Department of Forestry**. 2600 State St, Salem, OR 97310.

The Private Forests Division Chief is responsible for the overall successful implementation of the department's Private Forests Division business, developing division policies and rules, developing budgets, developing and implementing procedures, goals, and objectives, monitoring effectiveness, and conducting program evaluation. Major duties include:

Directs analysis and development of technical and policy positions for the Oregon Forest Practices Act, landowner technical and financial assistance, Insect and Disease Program, Urban and Community Forests Program, and the Oregon Plan for Salmon and Watersheds. Develop operating policies and rules to implement decisions. Oversees through subordinate

supervisors and in liaison with the field organization the planning, delivery, evaluation and assessment of division services.

The person participates in the executive management of the Department of Forestry. This includes participation in the Executive Staff decision-making process, and representing the State Forester or Board of Forestry at various state or national meetings and legislative committees. Lead the division's strategic planning process, developing long-and short-range goals and plans.

Leads Agency-wide task groups and/or Board of Forestry sponsored initiatives from initiation through implementation.

Provides strategy recommendations to the Board of Forestry, State Forester, Deputy State Forester, legislators and other authorized policy makers.

Organizes, directs or participates on policy level task forces and working groups to develop state, regional and national policy recommendations.

Recommends legislation to the agency, Board of Forestry, and the legislature. Coordinates with Executive Staff, key constituents and legislators to provide testimony for hearings and Board members.

Provides policy leadership for preparation of the agency's Private Forest biennial budget.

Plans, assigns, and reviews work of the Private Forests Deputy Division Chief and two Program Directors. Approves or adjusts work assignments and schedules to maintain adequate staffing levels and respond to fluctuating workloads. Additionally ensures that appropriate procedures, central services and training for these programs are developed and implemented in cooperation with the Deputy State Forester.

Create a working environment, which encourages all employees to achieve their full potential. This includes addressing career development opportunities, developing individual learning plans and by reviewing employee training and career plans to determine appropriate developmental assignments.

Maintain a professional attitude and an inclusive work environment, free of intimidation, harassment and other forms of discrimination that enhances employee perception of ODF as their "employer of choice."

Responsible for achieving the Department's Affirmative Action goals through recruitment, selection and retention of protected class individuals. Promote and support the value the Department places on Equal Employment Opportunity (EEO), Affirmative Action (AA), Diversity and Working Guidelines through individual actions and interactions with employees, applicants, stakeholders, community partners, and landowners.

2010-2011 **Acting Private Forests Division Chief / Deputy Chief, Oregon Department of Forestry**. 2600 State St, Salem, OR 97310.

During the great recession when the Private Forests Division was reduced, I took on the duties of Acting Division Chief, while retaining duties of Deputy Chief (see above and below) for specific duties of each position. I spent three days per week with the Executive

Team and two days with Private Forests staff. I took over the leadership responsibilities for the Division, while maintaining operational responsibilities of managing the Salem staff.

The challenging circumstances required decisions on the highest priority projects and core business functions to maintain. For example, while the monitoring staff was eliminated, we were able to maintain analysis of the Riparian Function and Stream Temperature data through a partnership with Oregon State University, College of Forestry. Because of the decrease to 30 stewardship foresters, we suspended the Operator of the Year program. We also maintained strategic planning and biennial budget preparation. When the legislature chose to restore a significant portion of our budget, we had a well-justified approach to rebuilding the program.

During this time, I completed core leadership functions of developing division policies and rules, developing budgets, developing and implementing procedures, goals, and objectives, monitoring effectiveness, and conducting program evaluation. I also led the division's strategic planning process, developing long-and short-range goals and plans.

2007-2010 **Deputy Chief, Private Forests Division, Oregon Department of Forestry**. 2600 State St, Salem, OR 97310.

The position plans, develops, directs, and coordinates the Department of Forestry's Private Forests Division. The Private Forests Division encourages economically efficient forest practices consistent with the sound management of soil, air, water, fish and wildlife resources; provides technical and financial assistance to non-federal forest landowners to improve the management on private forestlands; and minimizes the incidence and severity of forest insect and disease impacts on non-federal forestland throughout the state. The program directly regulates forest operations statewide on all non-federal forestland. The program has a statewide biennial budget of approximately $39 million and includes a statewide staff of approximately 107 full-time equivalents. Primary responsibilities include:

Develop administrative rules, policies and objectives, formulate long- and short-range plans and provide guidelines to implement the Oregon Forest Practices Act, Oregon Plan for Salmon and Watersheds, protection from insect and disease, and private landowner technical and financial assistance, statewide, as directed by the Legislature, Board of Forestry and State Forester.

Create an overall vision for the Private Forests Division and institutionalize that vision within the Department of Forestry through participation in the Leadership Team and other mechanisms. Work through the Executive Staff and Area Directors to ensure aligned program implementation in accordance with established rules, policies and objectives. Conduct program evaluation to ensure delivery of services.

Monitor and evaluate relevant legislative issues; prepare and present information and testimony for the Legislature.

Prepare the biennial budget for the section staff and coordinate budget preparation by all field units. Produce strategic (long-term) and tactical (short-term) plans, as necessary to implement the program vision and budget objectives. Prepare agenda items related to the

Forest Practices Act, Oregon Plan, protection from insect and disease, urban and community forestry, and private landowner technical and financial assistance for the Board of Forestry.

Supervise and direct the Private Forests Section personnel directly and through subordinate managers to meet the program's goals, mission and target dates. Typical tasks include: planning, assigning and reviewing staff work; adjusting work assignments and schedules to maintain adequate staff to respond to changing workloads; evaluating section work requirements and making budget and personnel adjustments; reviewing job applications, interviewing and recommending hiring; rewarding employees; counseling employees in work-related activities, professional growth and career development; assessing training needs of staff and arranging for adequate instruction; resolving personnel problems, complaints and grievances; and implementing discipline when appropriate.

2005-2006 **Forest Economist. The Campbell Group**, One SW Columbia Suite 1700 Portland, Oregon 97258.

The position is a member of the Resources Planning team at the Campbell Group. Primary responsibilities include: prepare supporting data for semiannual price forecast, prepare annual budget spreadsheet, maintain forest products price and mill databases, support acquisition effort with price and demand analyses. In addition, the economist prepares a range of economics-related publications including: quarterly macroeconomic report, monthly in-house and client newsletter, weekly on-line news digest, weekly lumber price updates, and research reports as requested. Economist also meets with clients or potential clients as needed.

2004-2005. **Research Forester. Environmental Analysis and Research Team of the Forest Inventory and Analysis Program**, located at the Forestry Sciences Laboratory, Pacific Northwest (PNW) Research Station, Portland, OR.

Research Team Assignment: The scientist is a Research Forester in the Environmental Analysis and Research Team of the Forest Inventory and Analysis Program, located at the Forestry Sciences Laboratory, Pacific Northwest (PNW) Research Station, Portland, OR. The Environmental Analysis and Research team carries out policy relevant, issue-driven, hypothesis-based research related to forest inventory data and techniques research that enhances the efficiency of the inventory and expands our analytic potential. The team addresses four issues in the Program Charter – Inventory and monitoring technology development, assessment of Pacific Coast forest and range health for baseline and trends, assessment of the effects of human use and natural disturbances on future population and distribution of plants and animals in Pacific Coast ecosystems, and enhancing our understanding of alternatives for future supply of a variety of goods and services from Pacific Coast states forests and rangelands, in response to changing social, economic, and natural forces. The scientist will work with the FIA BioSum Optimization and Automation research sub-team.

Personal Research Assignment: As a member of the Environmental Analysis and Research team in the Forest Inventory and Analysis Program, the scientist plans and conducts research that focuses on various aspects of the economics and policy implications of vegetation

treatments aimed at reducing fire risk or moving stands onto a trajectory that better meets management objectives. The focus of the sub-team and of the scientist's research assignment is to provide public and private land managers with the scientific information and analysis tools needed to make decisions about the efficiency of various practices to meet selected land management goals. The scientist's expertise in economic theory and operations research related to forestland management and fire will provide leadership in studies involving evaluation of alternative stand and landscape trajectories.

Research-related assignments: Because of the broad scope of the assignments, the incumbent will need to build a network of collaborators among analysts in various land management agencies. The incumbent will need to provide research assistance to various agency teams as they move to implement elements of the Healthy Forests Restoration Act involving vegetation management and changes approaches to land management planning. The incumbent will also need to identify new techniques and information, emphasize methods and institutions for transferring technologies and skills, and serve as a catalyst for discussing the evolving needs of communities and land managers.

Research-related skills required: Successful completion of research assignments requires knowledge in microeconomic theory, political economy, risk analysis, fire science, social sciences, forest management, and econometrics. Many of the problems require ingenuity in developing and adapting interdisciplinary approaches and cannot be solved using standard methods. The researcher must use ingenuity in adapting biological, physical, and social science theory to the research. The scientist must converse both verbally and in the literature with specialists in many fields and, therefore, relies heavily on team efforts to provide the needed expertise. It is, however, essential that the scientist possesses the ability to synthesize information from a wide range of sources and based on this synthesis make meaningful recommendations to customers and clients.

Formidable challenges are posed by the policy context within which studies of fire treatments exist. For example the relation between policy analysis and political decision-making is not well understood either generally or specifically in the case of forestry. Furthermore decisions about risk reduction treatments are inherently contentious because the implicitly involve tradeoffs involving human life and property. The role of empirical and analytical methods (or even a scientific approach) is not universally accepted by those dealing with theoretical issues in policy analysis. The incumbent will have to deal with the contentious character of scientific policy prescriptions and the need to develop methods that are consistent with the public's existing values and political processes.

1998-2006 **Associate Professor. School of Forestry, Northern Arizona University**, 200 East Pine Knoll Drive, Flagstaff, AZ 86011.

The rank of associate professor is a tenure-eligible or tenured position. To be eligible for the rank of associate professor, the faculty member must accomplish at least the following:

a. A record of teaching that shows substantial evidence of effectiveness in teaching, advisement, and other teaching-related responsibilities;
b. A record of scholarly activity that shows a sustained pattern of scholarly activity or other creative endeavors related to the faculty member's discipline;

c. A record of service that shows a pattern of sustained service to the profession and the university community, and the potential to assume a leadership role within the faculty as one moves toward the rank of professor; and
d. A doctorate or other terminal degree in the discipline of the faculty member. Special certification or scholarly or creative and/or professional achievements might justify appointment, reappointment, or promotion without the doctorate or terminal degree.

Specific duties
Assignment (%): Teaching 50, Research 40, Service 10, Other 00

1. Expectations for teaching advising, and mentoring students. Teaching responsibility include forest management, forest planning, and ecological economics. At 50 percent, my teaching load target is 12 credit hours per year. In the 2004-2005 academic year, I have the following teaching responsibility:

   FOR500 Ecosystem Science and Management Principles - graduate, 3 credit hours, Fall 2004

   FOR 323-326W Forest Management I-IV - undergraduate professional program, 5 credit hours, Spring, 2005

   FOR 633 Ecological Economics - graduate 3 credit hours, Spring, 2005

   These courses, plus four credit hours for two graduate students equal 12 hours per year.

2. Expectations for research or scholarly activities.

   I will continue research on economic value of ecological restoration in the wildland-urban interface. I will continue to develop a general research program in forest management, forest planning, and ecological economics. Based on a 40 percent research allocation, expectation for 2004-2005 are: 1.5 publications (blind refereed and archival or equivalent); 1.5 national or regional presentations; 25,000 dollars in grants and contracts; and 1.5 graduate students.

3. Expectations for service to the University, School, profession and community.

   Based on a 10 percent service level, expectation for 2004-2005 are:

   Serve on one School of Forestry committee; serve on at least one University committee or special assignment; advise graduate and undergraduate students; and serve, in a professional capacity, non-university constituents by giving professional advice, presenting programs, or providing requested reviews and evaluations.

   I served as the coordinator of Graduate Studies for the School of Forestry from 1999-2001 (20% time). During this administrative appointment, I chaired the committee that reviewed and revised the policies and guidelines for graduate studies in the School of Forestry. I developed long- and short-range program goals and plans for the graduate program. Prepared budgets for managing the graduate program. I also implemented a web-based distribution of policies and forms to increase the efficiency of operating the graduate program.

2002-2003 **School Chair (interim). School of Forestry, Northern Arizona University**, 200 East Pine Knoll Drive, Flagstaff, AZ 86011.

The department chair is the academic and administrative leader of the university's basic organizational unit -- the academic department -- except in non-departmentalized units in which the dean or director serves in this role while area coordinators may perform some of these functions.

Department chairs encourage and evaluate faculty productivity, recommend persons for support and recognition, and lead the faculty of their departments in integrating research with instruction. I was responsible for the supervision of 23 faculty members and 8 staff. I was responsible for developing Statement of Expectations and overseeing the peer-review process used to evaluate faculty productivity. I was also responsible for reviewing and revising staff job descriptions and conducting performance reviews. I coordinated School curricula, prepare class schedules, evaluate academic standards, assign academic advisors, and keep advisors informed. I proposed new candidates for hiring and evaluated faculty performance in teaching, advising, research, and professional service. During my appointment, I was responsible for hiring one new faculty member and one staff member.

I prepared department budget requests for student wages, operational capital, and library acquisitions; proposed additions to the faculty of the department; administered department budgets; recommended library acquisitions; recommended faculty travel; proposed scheduled usage of classrooms and laboratories; and coordinated office assignments. I worked with faculty to review and develop general School policies, including workload policies and budget allocation policies.

I managed the School's $1.8 million Educational Budget. I also administered the School's Federal McIntire-Stennis and matching Bureau of Forestry Research Programs. This research program has an annual budget of approximately $400,000. I oversaw the internal competitive grant program funded by this program. I ensured that School policy met Federal guidelines.

Department chairs participate in college-level policy matters through regular meetings of department chairs with the Dean. They work with deans to provide opportunities for professional growth and development for the faculty. During my term, I led the School’s transition from a Department within a College, to a stand-alone School of Forestry, with a Dean. The change increased the stature and autonomy of the School. During this transition, I also managed the Schools reaccreditation by the Society of American Foresters.:

1991-1998 **Assistant Professor. School of Forestry, Northern Arizona University**, 200 East Pine Knoll Drive, Flagstaff, AZ 86011.

1989-1991 **Postgraduate Researcher: Forest Management.** Design of forest planning system for Hoopa Tribal Council. University of California, Berkeley, Department of Forestry and Resource Management.

1985-1988 **Junior Specialist: Forest Management.** University of California, Berkeley, Department of Forestry and Resource Management.

1984-1985 **Postgraduate Researcher: Forest Biometrics.** University of California, Berkeley, Department of Forestry and Resource Management.

1983-1984 **Laboratory Assistant**: Forest Biometrics. University of California, Berkeley, Department of Forestry and Resource Management.

Publications:

Book chapters

Daugherty, P. J., and G. B. Snider. 2003. Chapter 4. Ecological and Market Economics. In: Friederici, P. G. (Ed.). Ecological Restoration of Southwestern Ponderosa Pine Forest. Society for Ecological Restoration International, Island Press. Washington, D.C.

Refereed Articles

Barbour, R. J., J. Fried, P.J. Daugherty, G. Christensen, R. Fight. 2008. Potential biomass and logs from fire-hazard-reduction treatments in Southwest Oregon and Northern California. Forest Policy and Economics 10(6) 400–407.

Daugherty, P.J. and J.S. Fried. 2007. Jointly Optimizing Selection of Fuel Treatments And Siting Of Forest Biomass-Based Energy Production Facilities For Landscape-Scale Fire Hazard Reduction. INFOR, Vol. 45 (1) 17–30.

Adcharaporn Pagdee, Yeon-Su Kim and P.J. Daugherty. 2007. A response to Bradshaw's commentary paper: On definitions of "success" and contingencies affecting success in Community Forestry. Society and Natural Resources 20:8, 759-760

Snider, G.B., P.J. Daugherty, and D.B. Wood. 2006. The Irrationality of Continued Fire Suppression: An avoided-cost analysis of fire hazard reduction treatments vs. no treatment. Journal of Forestry, Vol 104:8, December 2006, pp. 431-437.

Pagdee, A., Y. Kim, and P.J. Daugherty. 2006. What Makes Community Forest Management Successful: A Meta-Study from Community Forests throughout the World. Society and Natural Resources volume 19(1).

Fight, R. D., G. L. Pinjuv, and P. J. Daugherty. 2004. Small-Diameter Wood Processing in the Southwestern United States; an Economic Case Study and Decision Analysis Tool. Forest Prod. J. 54(5):85-89.

Kolb, T. E., P. J. Daugherty, and L. E. DeWald. 2001. Paving the way from school to work: Core education for forestry graduate students at Northern Arizona University. Journal of Forestry 99(9):10-15.

D. Larson, D. Neary, P.J. Daugherty, C. Edminster. 2000. Harvesting Costs for Potential Bioenergy Fuels in a Fire Risk Reduction Program. NZ Journal of Forestry Science 30(1/2):114-129.

Church R. and P.J. Daugherty. 1999. Considering intergenerational equity in linear programming-based forest planning models with MAXMIN objective functions. For. Sci. 45(3):366-373.

Davis, L.S., F. Schurr, R. Church, J.K. Gilless, and P.J. Daugherty. 1990. The Spreadsheet Connection for Forest Planning Analysis that Everyone Can Understand and Trust. Western Journal of Applied Forestry. 5(3):90-93.

Daugherty, P.J., and J.K. Gilless. CACTOS/CRYPTOS Stand Evaluator, Version 1.0 User's Manual. 1990. Agricultural Experiment Station. University of California. Division of Agriculture and Natural Resources. Bulletin 1930. 107 p.

Peered-reviewed conference proceedings

Pinjuv, G., P.J. Daugherty and B.E. Fox. 2001. Cost-effectiveness analysis of ponderosa pine ecosystem restoration in Flagstaff Arizona's wildland-urban interface. In: Vance, R.K., C.B. Edminster, W.W. Covington, and J.A. Blake (Eds.). Ponderosa Pine Ecosystems Restoration and Conservation: Steps Toward Stewardship. USDA Rocky Mountain Research Station Conference Proceedings RMRS-P-22.

Fink, G.T. and P.J. Daugherty. 1999. How economics silences your thunder: the influence of economics over natural science in policy. In: Kendy, E. (eds.). Science into Policy: Water in the Public Realm. American Water Resources Association. Herndon, VA. TPS-99-2 302 pp.

Snider, G.B, P.J. Daugherty, and A.L. Medina. 1998. An ecological economic approach for analyzing the cost and benefits of riparian restoration projects. In Hydrology and Water Resources in Arizona and the Southwest, Proc. 1997 Meet. Hydrologic Sect. Arizona-Nevada Academy of Science. Vol. 27.

Symposium Proceedings

Kolb, T. E., L. E. DeWald, and P. J. Daugherty. 2000. Core education for forestry graduate students at Northern Arizona University. Abstract on p. 80. In: Proceedings of the Third Biennial Conference on University Education in Natural Resources. Full 13 page paper available at http://www.snr.missouri.edu/meetings/uenr/kolb.pdf.

Church, R., and P.J. Daugherty. 1997. Towards intergenerational equity in LP based long term forest planning models. In Proceedings of the Seventh Symposium on Systems Analysis in Forest Resources. Travis City, MI. USDA Forest Service. North Central Research Station general Technical Report. NC-205.

Daugherty, P.J. 1997. Goals for ecosystem management: the need for specificity. In Proceedings of the 1996 Society of American Foresters Convention. Albuquerque, NM, November 9-13, 1996.

Research Reports

Snider, G.B., D.B. Wood, and P.J. Daugherty. 2003. Analysis of costs and benefits of restoration-based hazardous fuel reduction treatments vs. no treatment. Progress report # 1. Bureau of Land Management and Ecological Restoration Institute Research Project. 14 p.

Church, R. and P.J. Daugherty. 1998. Progress report # 2 analysis and testing of spectrum analytical software. Cooperative Research Project - CA-28-C4-817. 6 p.

Daugherty, P.J. 1996. Progress report # 1 on the analysis and testing of spectrum analytical software. Cooperative Research Project - CA-28-C4-817. 37 p.

Daugherty, P.J. and R. Church. 1996. Economic analysis of the A-1 mountain project as a pilot project for grand canyon trust forest forever foundation. 21p.

Daugherty, P.J. 1996. Report on crown study permanent plot establishment. Final Report for the Crown Study Challenge Cost-Share Agreement CCSA No. 03/04/95/D-17/324. 24 p.

Daugherty, P.J. 1996. Conceptual model of a wildlife habitat analysis system. A Southwest University Forest Research Consortium Report. Accepted by the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station.
40 p.

Daugherty, P.J. and S.W. Andariese. 1995. Spatial analysis conceptual model. A Southwest University Forest Research Consortium Report. Accepted by the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station. 21 p.

Dewhurst, S.M. and P.J. Daugherty. 1995. Database management conceptual model. A Southwest University Forest Research Consortium Report. Accepted by the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station. 20 p.

Daugherty, P.J. 1995. Economic efficiency and alternative evaluation conceptual model. A Southwest University Forest Research Consortium Report. Accepted by the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station. 40 p.

Daugherty, P.J., ed. 1994. Appropriate technology to evaluate public forest land management implementation in the southwest: a conceptual decision support system for ecosystem analysis. A Southwest University Forest Research Consortium Report. Accepted by the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station. 112 p.

Daugherty, P.J., ed. 1994. Problem assessment part II: a status of science review for appropriate technology to evaluate public forest land management implementation in the southwest. A Southwest University Forest Research Consortium Report. Accepted by the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station. 100 p.

Daugherty, P.J., ed. 1993. Problem assessment part I: an evaluation of USDA forest service written guides for public forest land management implementation in the southwest. A Southwest University Forest Research Consortium Report. Accepted by the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station. 160 p.

Presentations:

Invited presentations

Daugherty, P.J. 2007. Invited testimony at hearing, "Wildfire Preparedness: An Ounce of Prevention is Worth a Pound of Cure." The Subcommittee on National Parks, Forests,

and Public Lands of the Committee on Natural Resources, U.S. House of Representatives, Washington, D.C. 20515, June 19, 2007.

Fried, J.F. and P.J. Daugherty (jointly presented). 2004. Optimization of Fuel Treatment Selection and Processing Facility Siting for Fuel Hazard Reduction. Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting Denver 10/24-10/27/2004. Forestry Applications Cluster. Denver CO.

Daugherty, P.J. 1997. Ecological economic aspects of rangeland water development. Presented at the 1997 Symposium on Environmental, Economic and Legal Issues Related to Rangeland Water Development. Center for the Study of Law, Science and Technology, Arizona State University. November 13-15, 1997.

Daugherty, P.J. 1996. Goals for ecosystem management: the need for specificity. Presented at the 1996 Society Of American Foresters National Convention. Albuquerque, NM, November 9-13, 1996.

Daugherty, P.J. 1993. Quantifying Terrestrial Vertebrate Diversity for Forest Management Planning. Presented at the Oct. 31 - Nov. 3, 1993, ORSA/TIMS Joint National Meeting. Phoenix, AZ.

Presentations

Snider, G.B. (presenter) and P.J. Daugherty. 2005. The irrationality of continued fire suppression: a partial economic analysis of restoration-based hazardous fuel reduction. Treatment versus no treatment. Ecological Restoration of Southwest Ponderosa Pine and Pinyon-Juniper Ecosystems, a joint meeting of the Southwest and Intermountain Sections of the Society of American Foresters in St. George, UT, May 11-13, 2005.

Kolb, T. E. (presenter), L. E. DeWald, and P. J. Daugherty. 2000. Core education for forestry graduate students at Northern Arizona University. Third Biennial Conference on University Education in Natural Resources. University of Missouri-Columbia. Columbia MO. March 25-28 2000.

D. Larson, D. Neary (presenter), P.J. Daugherty, C. Edminster. 1999. Harvesting Costs for Potential Bioenergy Fuels in a Fire Risk Reduction Program, 2nd Annual Workshop of IEA Bioenergy Task 18 'Conventional Forestry Systems for Bioenergy', Charleston, S.C., Sept. 19-25.

Daugherty, P.J., B.E. Fox, D.P. Angelides, J. Lemieux. 1998. Educational partnerships. Second Biennial Conference on University Education in Natural Resources. Utah State University. Logan UT. March 7-10, 1998.

Church, R., (presenter) and P.J. Daugherty. 1997. Towards intergenerational equity in LP based long term forest planning models. Presented at the 1997 Symposium on Systems Analysis in Forest Resources.

Daugherty, P.J. 1993. In Search of a Metric: Quantifying Terrestrial Vertebrate Diversity for Forest Management Planning. Presented at the 1993 Symposium on Systems Analysis in Forest Resources, Valdivia, Chile.

Daugherty, P.J. 1991. Dynamic Inconsistency in Forest Planning. Presented at the 1991 Symposium on Systems Analysis in Forest Resources, Charleston, South Carolina.

Teaching:

University courses taught

FOR 323-326W Forest Management I –IV (13). Develops techniques and skills needed to manage complex forested ecosystems for the generation of goods and services. Examines role of human needs and values in the management of forested ecosystems. Evaluates interactions between and among competing and complementary uses of forested ecosystems within a human context. This course fulfills NAU's junior-level writing requirement. *Part of teaching-teaching team. Responsible for 4.0 credit hours.*

FOR 413-414C Forest Ecosystem Assessment I-II (6). Develops principles and foundations of the techniques and practices required to characterize forest conditions. Applies techniques and practices required to characterize forest conditions. 4 hrs. Lecture, 2 hr. lab. This course fulfills NAU's senior capstone requirement in conjunction with FOR423-424C. *Part of teaching-teaching team. Developed and implemented course under revised integrated curriculum.*

FOR 423-424C Forest Ecosystem Planning I-II (6). Develops understanding of tools, techniques, and approaches for developing short- and long-term landscape-level forest management plans. Applies planning tools for the development of landscape-level forest management plans. 4 hrs. Lecture, 2 hr. lab. This course fulfills NAU's senior capstone requirement in conjunction with FOR413-414C. *Developed and implemented course under revised integrated curriculum.*

FOR 498 Senior Seminar (1-3). Integrates theory and practice, with emphasis on historical, contemporary, and future issues.

FOR 500 Ecosystem Science and Management Science Principles (3). This course is designed to introduce students to philosophical, social, cultural, political, and ecological concepts and principles of ecosystem science and management (ESM). General systems overview of biophysical, social, and political factors associated with forestry. Emphasizes wildlife, recreation, and other non-commodity resources.

FOR 503 Management Science Modeling for Multi-Resource Management (3). Linear and nonlinear mathematical programming models and their application to forestry in a multi-resource management context.

FOR 593 Natural Resource Economics (3). Application of advanced methods in analyzing multi-resource forest economics problems.

FOR 633 Ecological Economics (3). Theory of ecological economics, which is the union of ecology and economics, and its application to natural resource management. Addresses both micro and macro aspects of ecological economics.

FOR 690 Research Methods (3). Scientific method; investigative procedures; formulation of hypotheses; problem selection and analysis; preparation of a research working plan.

University lectures

FOR 222 Environmental Conservation (3). Environmental quality problems in natural and human-made environments.

FOR 240 Introduction to Conservation Biology (3). Explores the practical issues related to people and society in maintaining the earth's biological diversity. Discusses the social environment and how to implement successful conservation of biodiversity.

FOR 250 Arizona Forests and Wildlife (3). Overview of fundamental ecology and management of major forest types and wildlife of Arizona. Relationship of Arizona's forests and wildlife to North America.

FOR 255 International Wildlife Issues (3). Current issues in wildlife conservation and management, using case studies from around the world. Topics include regulation of global wildlife, threats to biodiversity, and issues of sustainable management and protection.

FOR 525 Geographic Information Systems (4). Use of GIS in natural resources; input, storage, structure, errors, analysis and modeling of spatial data.

FOR 580 Ecological Restoration Principles (3). Concepts and theories of ecological science related to restoring natural structures and processes of ecosystems. Coconvenes with FOR 380. Presented the ecological economics associated with ecological restoration.

FOR 693 Teaching Practicum (2). Examination and discussion of effective teaching methods. Teaching experience.

Teaching Awards

2002 Honorable Mention. Teaching Scholar Award. Northern Arizona University

2002 Teacher of the Year. School of Forestry. Xi Sigma Pi Forestry Honor Fraternity, Alpha Pi Chapter, Northern Arizona University

1997 Teacher of the Year. School of Forestry. Xi Sigma Pi Forestry Honor Fraternity, Alpha Pi Chapter, Northern Arizona University.

Other Professional Activities, Special Honors, Recognition:

2012-Pres. Serve on National Association of State Foresters (NASF), Forest Resource Management Committee. Addresses issues related to private and public forest lands management, including landowner assistance programs, taxes, water resources, and related federal programs and legislation.

2014 Served as Program Chair for the Joint-Plenary session for the 2014 National Society of American Foresters / Canadian Institute of Forestry/l'Institut forestier du Canada Convention / 4th World Congress of the International Union of Forest Research Organizations.

2010 Oregon Society of American Foresters Tough Tree Award: To be presented whenever appropriate to one or more members of the Oregon Society of American

Foresters who have demonstrated sustained, excellent professional performance in an extremely adverse work climate. Some examples of extremely adverse conditions include risk to the individual's life, property, health, or career; intense pressure and criticism by the news media; intense pressure from hostile special interest groups, or continuous exposure to elements which threaten the safety of the public

2004 Best Paper in the Forestry Sponsored Sessions Award. Jeremy Fried and P. J. Daugherty for their talk entitled "Optimization of fuel treatment selection and processing facility siting for fuel hazard reduction." Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting Denver 10/24-10/27/2004. Forestry Applications Cluster. Denver CO.

2001 Instructor for the State of Arizona Game and Fish Department annual Department School.

1994-2006. Member, steering committee, and instructor for the Institute for Ecosystem Management for Continuing Education in Ecosystem Management (IEM-CEEM). The Institute has developed and offers a continuing education program for the Central and Southern Rookies and the Great Basin. The course is being offered to USDA Forest Service, Bureau of Indian Affairs, and other natural resource agencies professional employees. My responsibilities involve the development and teaching of the economics and management portions of the course.

1997 Chair, XVI Biennie Reunion Asociacion Mexicana de Profesionales Forestales and the Society of American Foresters. September 17-21, 1997. Flagstaff, AZ.

1997 Participant, Workshop for setting a research agenda for the wildland urban interface. Sponsored by the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station.

1996 Session Chair, Systems Analysis Cluster. Society of American Foresters National Convention. Albuquerque, NM, November 9-13, 1996.

Membership and Offices Held In Professional Organizations:

2000 Chair, Southwestern Section. The Society of American Foresters.

1999 Chair-elect, Southwestern Section. The Society of American Foresters.

1997 Chair, Peaks Chapter, Society of American Foresters

1996 Chair-Elect, Peaks Chapter of the Society of American Foresters.

1982-Pres. Member, Society of American Foresters

2000-Pres. Member, United States Society of Ecological Economics

1994-Pres. Member, International Society of Ecological Economics