

## James B. McCarter, Ph.D.

Research Associate Professor, Department of Forestry & Environmental Resources, College of Natural Resources, North Carolina State University

### Education:

University of Washington – Seattle, WA

- **Doctor of Philosophy** – Silviculture & Protection, December 2001  
Dissertation: *Landscape Management System (LMS): Background, methods, and computer tools for integrating forest inventory, GIS, growth and yield, visualization and analysis for sustaining multiple forest objectives*  
Committee: Dr. Chadwick D. Oliver, Dr. Bruce C. Larson, Dr. Douglas A. Maguire

Utah State University – Logan, UT

- **Master of Forestry** – Forest Management/Silviculture, April 1984  
Thesis: *Density Management of Lodgepole Pine*  
Committee: Dr. James N. Long, Dr. Theodore W. Daniel, Dr. H. Charles Romesburg
- **Bachelor of Science** – Forestry, June 1981

### Honors and Awards:

- Distinguished Service to Forestry Award, Appalachian Society of American Foresters, 2012
- Division Merit Award, Appalachian Society of American Foresters, North Carolina Division, 2010
- Certificate of Appreciation for Outstanding Service – Website Enhancement, Appalachian Society of American Foresters, 2008
- Certificate of Appreciation for Outstanding Service – Triangle Chapter Chair, Appalachian Society of American Foresters, 2008
- Exemplary Research Staff Service Award, College of Forest Resources, University of Washington, 2004

### Teaching Experience:

My approach to teaching is grounded in my belief that we are all students and therefore endowed with a daily opportunity for learning. I seek to provide an atmosphere conducive to learning through open communication and interaction whether in lecture or field trips, as teams or individuals. I believe that the instructor's role is to guide with experience, provide structure and challenge, while conveying an appropriate context for learning. I believe course content is a platform for further learning through synthesis of information. Asking students to consider complex questions continues to be an effective mode for learning. Students are most successful when combinations of applied and theoretical approaches are used in the teaching environment. I encourage students to question their, and my, assumptions, leading ultimately to self-discovery. Finally, I try to foster a positive environment in an effort to motivate students to want to learn.

### Undergraduate and Graduate Teaching:

Guest Lecturer, NC State University, 2002-2012:

- **Location is changing everything (Center for Earth Observation Discussion Series)**, February 20, 2014
- **Special Topics in Forestry (FOR 491/FOR 595)**, Fall 2014, Fall 2013, Fall 2012 & Fall 2011, Presentation on Quantitative Silviculture, Stocking Diagrams, and Density Management Diagrams
- **Sustainable Materials for Green Housing (WPS 201)**, Spring 2012 & Spring 2011, Lecture on Sustainable Forestry: Carbon cycling in forests and products with influences of disturbance and management **FOR 391**, Fall 2011, Lecture on Stocking and Stand Density
- **Environmental Impact Assessment (NR 484)**, Nov 10, 2011, Lecture on Life Cycle Inventory/Analysis and demonstrate calculation details of carbon impacts for production, processing, and transportation phases of biomass for energy
- **Forestry & Environmental Resources Departmental Seminar**, Nov 28, 2011, Carbon and biomass in forests.
- **Advanced Forest Management Planning (FOR 734)**, March 18, 2009, Provide instruction on the use of the Landscape Management System (LMS) for assessing alternative management approaches to forested landscapes. Students learned how to load the software, apply treatments, grow stands, and assess results using visualization and tabular outputs
- **Forestry & Environmental Resources Departmental Seminar**, Feb 23, 2009, Applications in landscape management on Mid-Forest Lodge, MI: management of a hunting property for wildlife, forestry, and carbon objectives
- **Forestry & Environmental Resources Departmental Seminar**, Oct 15, 2007, Carbon Assessment of Forest Landscapes: Tracking Forest and Product Carbon Under Alternative Management Scenarios
- **Forest Measurements, Modeling, and Inventory (FOR 374)**, Oct 20, 2006, Guest lecture and lab for Dr. Bullock on use of the Landscape Management System.
- **Forest Economics (FOR 319/FOR 595)**, Oct 3, 2006, Guest lecture for Dr. Cubbage on the Landscape Management System and "Economatic" tools
- **Forest Management (FOR 405)**, Oct 2002, Guest lecture on applications in landscape management and analysis

Instructor, NC State University, 2015-2013, 2011 & 2009:

- **Forest Measurements, Modeling, and Inventory (FOR 374)**, Fall 2014, Instruct full semester course to junior students in forest inventory sampling, measurement techniques, and modeling.
- **Independent Study – Spatial Statistics with R (GIS 595)**, Fall 2014, Co-instruct independent study class for MGIST student looking for additional experience with spatial statistics and additional analytical tools.
- **Advanced Geospatial Analytics (GIS 520)**, Spring 2015, Summer 2014 (Only Instructor), Spring 2014, Fall 2013, Co-instruct course to graduate level students covering geocoding, AutoCAD file use, cardinality, linear referencing, beginning spatial statistics, use of raster data for site selection, weighted overlays, and beginning image classification.
- **Geospatial Data Structures and Web Services (GIS 550)**, Spring 2015, Fall 2014, Spring 2014, Fall 2013, Instruct course to graduate level students on spatial database models and web deployment of geospatial information, including: database

- design and development, database and GIS server installation and management, ArcGIS for Server service publishing, web mapping application development, and Open Source GIS for database and mapping.
- **Forest Analysis in R (FOR 595/NR 595)** – Directed Study, Spring 2011, Instruct graduate students and faculty in the use of R for forestry data analysis.
  - **Forest System Mapping and Mensuration (FOR 172)**, Fall 2009, Instruct full semester course to sophomore level students on mapping and mensuration
  - **Forest Measurements, Modeling, and Inventory (FOR 374)**, Fall 2009, Instruct full semester course to junior students in forest inventory sampling, measurement techniques, and modeling
  - **Forest Measurements (FOR 502)**, Fall 2009, Instruct partial semester course to non-forestry major graduate students in field and office measurement techniques

Guest Lecturer:

- **Virginia Tech, Blacksburg, VA**, March 16, 2007, Presentation of visualization technologies and the Landscape Management System to Dr. H. Burkhart, faculty and students.
- **Yale University, F&ES 50011b**, Feb 5<sup>th</sup>, 2007, Guest Lecture – Presentation on technology in forestry: the Landscape Management System, visualization, and applications in LIDAR.
- **University of Florida, Plant City**, December 21<sup>st</sup>, 2006, Guest lecture on visualization technologies, LIDAR, and landscape management for Dr. Michael Andreu and students.

Lecturer, University of Washington, 2003-2005:

- **Forest Stand Dynamics (FM424/FM503)**, Winter 2003, Lecturer – A lecture and fieldtrip based grad/undergrad course intended to provide in-depth exposure to the important concepts, literature, and research methods involved in the study of tree growth and forest stand development. <http://mccarterforestry.com/teaching/FM424-StandDynamics/>
- **Current Topics in Silviculture (FM 522)**, Winter 2003, Lecturer – Graduate course covering study of current issues, information, and literature in Silviculture and forest protection.
- **Forests and Society (CFR 101)**, Winter 2003, 2004, 2005, Guest Lecture on Silviculture and Forest Stand Dynamics to non-forestry majors.
- **Silviculture (FM 323)**, Spring 2004, Guest lab lecture on using the Landscape Management System
- **Forest Management and Economics II (FM 461)**, Winter 2003, Winter 2004, Guest lecture on using the Landscape Management System

**Professional Training Delivered:**

- **Forestry GIS Workshop**, November 19, 2014, Wayne Community College, Goldsboro, NC – Day long, hands on GIS training for forestry consultants and landowners using Open Source GIS (QGIS)
- **Forestry Issues Teleconference – Forestry GIS**, May 12, 2014 – Demonstrate typical forestry GIS applications using online and free GIS software
- **LMS Training for University of Florida** – February 2014 – Provide distance education via GoToMeeting to students using LMS software for school forest planning.
- **NC Registered Foresters Exam Review Session – Raleigh, NC, Aug 2013**

- **NC Registered Foresters Exam Review Session – Raleigh, NC, Jan 2013**
- **LMS Training for University of New Brunswick – Dec 13, 2012** - Provide demonstration via GoToMeeting on using the LMS software system.
- **Forestry Issues Series Teleconference, Forestry and Environmental Outreach Program, NC State University**, November 2012 – Silviculture Review, Quantitative Silviculture Introduction, Stocking Guides, Density Management and Density Management Diagrams
- **Forestry Issues Series Teleconference, Forestry and Environmental Outreach Program, NC State University**, September 2012 – Using Free GPS and GIS software.
- **Forestry Issues Series Webinar, NC State University**, December 2011 – Biomass and Carbon Developments
- **LMS and NED Training, Yale University**, Connecticut, Aug 1-2, 2011
- **NC Registered Foresters Exam Review Session – Raleigh, NC, Aug 2-3, 2010** - Provide review on Silviculture, site quality, and soils.
- **Forestry Issues Forum Teleconference – Using Forestry Data and Modeling Tools, NC State University**, Raleigh, NC, March 10<sup>th</sup>, 2010 - Organized session content and speakers for Forest Inventory and Analysis presentations (USDA FS, NC DFR, NC State) and presented use of the Hafley & Smith Managed Pine Plantation Model.
- **NC Registered Foresters Exam Review Session, NC State University**, Raleigh, NC, Jan 21-22, 2010 - Provide review on Statistics & Mensuration, Silviculture, site quality, and soils.
- **Accurate Forest Inventory, NC State University**, Raleigh, NC, Dec 17-18, 2009 - Conduct two day training session for NCSU FEOP on forest inventory, sampling and statistics, and forest mensuration.
- **NC DFR Service Forester Training**, October 20<sup>th</sup>, 2009 - Provide webinar based instruction in use of the Hafley & Smith Managed Pine Plantation Model.
- **NRCS Training in the Landscape Management System**, February 10<sup>th</sup> (Eatonville, WA) and 12<sup>th</sup> (Spokane, WA), 2009 - Develop and present one day hands on training for the Landscape Management System to NRCS service foresters in support of management plans for land owners.
- **NC Registered Foresters Exam Review Session – Raleigh, NC, Jan 8-9, 2009, Aug 7-8, 2008, Jan 29-30, 2008** - Provide review on Silviculture, site quality, and soils.
- **Forest Stand Dynamics Southeast, Forestry and Environmental Outreach Program, NC State University**, March 19-20<sup>th</sup>, 2008. - Develop and present, with Rick Hamilton, a two day course on Forest Stand Dynamics for Southeast forests. Class consisted on two half day lecture periods and two half day field trips. Field trips were to Duke Forest and Hill Forest.
- **San Carlos Apache Tribe Training in applications of the Landscape Management System – Instructor**, San Carlos, AZ, October 29-Nov 2<sup>nd</sup>, 2007 - Develop and present a customized 5 day training session to San Carlos Tribal foresters on applications of the Landscape Management System to tribal forestry issues.
- **Fundamental Training and Applications of the Landscape Management System, Extension Forestry, NC State University, Raleigh, NC**, Sept 26<sup>th</sup>, 2007 – Instructor, Develop and present 1 day training session for forest consultants, Cooperative Extension agents, corporate and agency foresters.
- **Virginia Department of Forestry, Ecosystem Services Working Group Meeting – August 15<sup>th</sup>, 2007** - Present Landscape Management System and associated tools as an example of ecosystem services quantification.
- **Forestry Issues Forum Teleconference – The Landscape Management System, NC State University**, Raleigh, NC, February 14<sup>th</sup>, 2007 - Make 3 hour presentation on the

Landscape Management System and applications to southern forests to 80+ participants.

- **Fundamental Training and Applications of the Landscape Management System, Rural Technology Initiative, University of Washington** – Instructor, March, Nov. 2000; March, April, May, June, 2001; February, March, April, September, October 2002; December 2003; March, May, November, December 2004; January, April, July, June 2006 - Develop and present 2 – 4 day training sessions for Cooperative Extension agents, private landowners, consulting foresters, tribal foresters, and community college instructors in coordination with Rural Technology Initiative Project Coordinator.
- **Washington State Ag Teachers Conference** – Deming, WA, July 1<sup>st</sup>, 2004 - Conduct 3 hour training session on the Landscape Management System to high school teachers.
- **USAID Funded Guinea (West Africa) Agro Forester Training, University of Washington**, August 15-31<sup>st</sup>, 1999 – Instructor, Introduction to Pacific Northwest silviculture and tour of western Washington.
- **Natural Resources Institute Module 4 – Integrated Problem Solving for Natural Resources Professionals, University of Washington**, June 1998-2002, Instructor – Provide technical support and training on use of software tools to develop landscape management plans addressing diverse management objectives in graduate level short-course for mid-career professionals.
- **Silviculture Institute Module 6 – Stand Prescriptions, University of Washington, June 1994, 1995, 1996** – Lecturer, University of Washington, June 1994, 1995, 1996 - Present lectures on landscape management and projection of landscapes in graduate level short-course for mid-career professionals. Provide technical support in developing of management plans during module.
- **Statistics and Forest Mensuration - Silviculture Institute Module 3, University of Washington**, January 1989, 1990, 1992, 1994, 1994 – Lecturer, Half-day lectures graduate level short-course for mid-career professionals on introduction to growth and yield models, stand density and site quality.
- **Silviculture Institute Module 1 – Forest Autecology, University of Washington**, September 1992, 1992 – Teaching Assistant for mid-career professional training.

### **Research Experience:**

I wish to continue to explore the opportunities that computerized technology offers in resolving the inherent tensions that are associated with sustainable resource extraction in forests. I believe that there is much work yet to be done in this area. For example, these tools need to encompass a broader representation of natural systems. Tools that allow better measurement and interpretation of data must be refined. Finally, the ease and degree to which technology is transferred to students, researchers and forest land managers needs to improve.

My goal is to integrate various simulation and analytical tools in ways that will augment the research of my colleagues and help find solutions to complex problems beyond my local environment. My previous research, developing, and distributing the Landscape Management System was a productive first step toward this goal. Subsequently I have developed multiple simulation and analysis platforms for performing large scale (regional and national) inventory, biomass, and carbon assessments under alternative management approaches.

### **Research Positions:**

- **Research Associate Professor**, North Carolina State University, Department of Forestry and Environmental Resources, Raleigh, NC, September 2013-Present

- **Research Scientist 4**, Rural Technology Initiative, University of Washington, Seattle, WA, October 2007-August 2013
- **Adjunct Associate Professor (paid)**, North Carolina State University, Department of Forestry and Environmental Resources, Raleigh, NC, January 2010-August 2013
- **Research Scientist 4**, Rural Technology Initiative, University of Washington, Seattle, WA and **Research Scientist**, Yale University, New Haven, CT, June 2006-October 2007
- **Research Scientist 4**, Rural Technology Initiative, University of Washington, Seattle, WA, January 2003-May 2006
- **Software Development Coordinator**, Rural Technology Initiative, University of Washington, Seattle, WA, June 2001-January 2003
- **Teaching and Research Assistant**, College of Forest Resources, University of Washington, Seattle, WA, September 1988-June 2001
- **Senior Research Technician**, Ecology Center, Utah State University, Logan, Utah , November 1986-September 1988
- **Principle Research Technician II**, Department of Forest Resources, Utah State University, Logan, Utah, August 1984-November 1986
- **Research Assistant**, Department of Forest Resources, Utah State University, Logan, Utah, October 1983-July 1984
- **Teaching and Research Assistant**, Department of Forest Resources, Utah State University, Logan, Utah, December 1982-June 1983

#### **Recent Research and Development Projects:**

- **USDA Forest Service National Forest Carbon Assessments**, Assist USDA Forest Service efforts to quantify carbon impacts and changes on National Forests by performing FIA inventory assessment, data conversion, FVS growth simulations, and simulation results summary and curve fitting for subsequent modeling efforts.
- **USDA Forest Service, National Assessment of Drought Impacts on Forests**, Assist USDA Forest Service personal and other researchers with a national focus webinar and follow up online breakout sessions to work toward collaboration and report development.
- **USDA Forest Service Biomass and Life Cycle Analysis of Forestry Management and Operations**, US National Level inventory assessment and growth for evaluating alternative management for biofuels, carbon sequestration, and life cycle impacts of managed forests.
- **Sub-Regional Timber Supply Model Updates and Enhancements** – Assist in conversion of SRTS source code to current development environment, redesign application to conform to current Windows programming standards, provide install package, provide comprehensive help file, transition to new optimization/solver technology, and development support.
- **State of Washington Forest Biomass Supply Assessment Project** - Conduct inventory assessment and growth and yield modeling for statewide assessment of biomass availability using high resolution spatial information, including forest type and ownership type, to assess potential availability of biomass from harvest activities.
- **Life-Cycle Analysis in Forestry Literature Review** - Conduct extensive literature review of biomass and carbon estimation, assessment, and availability; techniques for estimating biomass, influences of management and climate on carbon sequestration, life-cycle inventory, and life cycle analysis.

- **USDA FS Global Climate Change Project** - Conduct large scale forest simulations for target ecosystems in 11 western states to investigate opportunities for carbon sequestration and fire risk reduction.
- **Forest Carbon Assessment Tool** - Development of an updated carbon assessment tool (currently a component of the Landscape Management System 2.x) that includes biomass and carbon assessments of forest landscapes along with analysis of product streams from the forest in a life-cycle analysis based on information from CORRIM ([www.corrim.org](http://www.corrim.org)).
- **Landscape Management System** - Provide design, development, technical support, and training for the Landscape Management System. <http://landscapemanagementsystem.org/>
- **Washington State Retention Study** - Perform forest simulations and financial analysis for a comparison of forest values to real estate values as an indicator of land conversion pressure in Washington State. <http://www.ruraltech.org/projects/wrl/sfr/>
- **Washington State Timber Supply** - Coordinate work on various aspects of the revised timber supply study for the State of Washington. <http://www.ruraltech.org/projects/fwaf/>
- **Hafley & Smith Model Update – NC State Extension Forestry** - Update NCSU Managed Pine Plantation Model developed by Hafley & Smith to a Microsoft Windows Interface. Project involved modification of the original Turbo Pascal code to make the original model so that it could be run from another program. A Windows interface was then developed to run the original model in the background. [http://www.ces.ncsu.edu/forestry/resources/publications/NCSU\\_MPP.php](http://www.ces.ncsu.edu/forestry/resources/publications/NCSU_MPP.php)
- **Stand Visualization Add-In for Excel – USDA Forest Service Cooperative Research** - Create Microsoft Excel Add-In that does stand level visualization of forest stands from information in Excel worksheets using the Stand Visualization System. Tool was developed to streamline visualization of forest health issues in Alaska, but was developed to be applicable to anywhere in the United States. <http://mccarterforestry.com/projects/standviz-addin/>

## **Publications, Presentations, Abstracts:**

### **Peer Reviewed Publications:**

- Oneill, Elaine and James B. McCarter. Submitted 2/2015. The Carbon Consequences of Management Alternatives in Western US Forests: A Simulation Study Using the Forest Carbon Assessment Tool. *Forest Ecology and Management*.
- Singh, Kunwar K., Gang Chen, James B. McCarter, Ross K. Meentemyer. 2015. Effects of LiDAR point density and landscape context on estimates of urban forest biomass. *ISPRS Journal of Photogrammetry and Remote Sensing*. 101(215): 310-322.
- Jeuck, James; Fredierick Cabbage, Robert Abt, Robert Bardon, James McCarter, John Coulston, and Mitch Renkow. In Press. Assessing independent variables used in econometric modeling forest land use or land cover change: a meta-analysis. *Forests*. ??
- Gharis, L., J. Roise, and J. McCarter. 2014. A compromise programming model for developing the cost of including carbon pools and flux in forest management. *Annals of Operations Research*. DOI: 10.1007/s10479-013-1519-9. 1-19.

- Oliver, Chadwick. Dearing., Nedal.T. Nassar, Bruce.R. Lippke, James.B. McCarter. 2013. Carbon, Fossil Fuel, and Biodiversity Mitigation with Wood and Forests. *Journal of Sustainable Forestry*. DOI: 10.1080/10549811.2013.839386
- Pires, Steven T., Tyler A. Strayhorn, Gary B. Blank, Sudipta Dashmohapatra, James B. McCarter. In Review. Life Cycle Assessment of a Site Specific Residential Home: A Builders of Hope Case Study.
- Oliver, Chadwick Dearing, Kristofer Covey, Aaron Hohl, David Larsen, James B. McCarter, Andrew Niccolai, Jeremy Wilson. 2012. In J. Stanturf et al. (eds.), *Forest Landscape Restoration: Integrating Natural and Social Sciences, World Forests*, 15, DOI 10.1007/987-94-007-5326-6\_3, Springer Science+Business Media
- Kershaw, John A., Jr., Evelyn W. Richards, James B. McCarter, and Sven Oborn. 2010. Spatially correlated forest stand structures: A simulation approach using copulas. *Computers and Electronics in Agriculture*. 74(2010): 120-128.
- Oneil, Elaine E., Leonard R. Johnson, Bruce R. Lippke, James B. McCarter, Marc E. McDill, Paul A. Roth, and James C. Finley. 2010. Life-cycle impacts of inland northwest and northeast/north central forest resources. *Wood and Fiber Science*. 42(CORRIM Special Issue): 29-51.
- Arseneault, Justin E., John A. Kershaw, Jr., James B. McCarter, and David A. MacLean. 2008. Forest Vegetation Simulator Ingrowth Tool: Incorporating Ingrowth Tree Lists into Forest Simulator Growth Projections. *Northern Journal of Applied Forestry*. 25(3): 158-160.
- Oliver, Chadwick D., James B. McCarter, Jeffrey M. Cornick, Kevin Ceder, and Christopher S. Nelson. 2008. Simulating Landscape Change Using the Landscape Management System. In: Joshua J. Millspaugh and Frank R. Thompson III (eds). *Models for Planning Wildlife Conservation in Large Landscapes*. 720 p.
- Kershaw, John. A., Jr.; Morrissey, Robert C; Jacobs, Douglas F.; Seifert, John R.; McCarter, James B. 2008. Dominant height-based height-diameter equations for trees in southern Indiana. In: Jacobs, Douglass F.; Michler, Charles H., eds. 2008. *Proceedings, 16<sup>th</sup> Central hardwood Forest Conference; 2008 April 8-9; West Lafayette, IN*. Gen. Tech. Rep. NRS-P-24. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station: 341-355.
- McCarter, James B., Christopher E. Nelson, Kevin R. Ceder, and Kevin W. Zobrist. 2007. The Landscape Management System: Emerging Technology for Integrated Forestry Applications. In: Miner, Cynthia; Jacobs, Ruth; Dykstra, Dennis; Bittner, Becky, eds. *Proceedings: international conference on transfer of forest science knowledge and technology*. Gen. Tech. Rep. PNW-GTR-726. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 169-177.
- Mason, C. L., B. R. Lippke, K. W. Zobrist, T. D. Bloxton, Jr., K. R. Ceder, J. M. Cornick, J. B. McCarter, H. K. Rogers. 2006. Investments in Fuel Treatments to Avoid Forest Fires Results in Substantial Benefits. *Journal of Forestry*. 104(1): 27-31.



- Oliver, C.D., and J.B. McCarter. 2001. The Landscape Management System Program: Landscape level planning and analysis. Paper presented at the conference: Forest Growth and Yield Models: Making the Best Business and Planning Decisions. Emerald Chapter of the Oregon Society of American Foresters and the Western Forestry and Conservation Association. (Papers compiled) November 5, 2001, Eugene, Oregon.
- Marzluff, J.M., J.J. Millsbaugh, K. Ceder, C.D. Oliver, J. Withey, J.B. McCarter, C.L. Mason, and J. Cornick. 2001. Modeling changes in wildlife habitat and economic return in response to timber management at the landscape scale. *Forest Science* 48:191-202.
- McCarter, J.B., J.S. Wilson, P.J. Baker, J.L. Moffett, and C.D. Oliver. 1998. Landscape management through integration of existing tools and emerging technologies. *Journal of Forestry*. Vol. 96, No. 6, June 1998:17-23.
- McCarter, J.B. 1997. Integrating forest inventory, growth and yield, and computer visualization into a landscape management system. In: Teck, R., M. Moeur, and J. Adams (comps.), *Proceedings of the Forest Vegetation Simulator conference*. Gen. Tech. Rep. INT-GTR-373. Ogden, UT. USDA Forest Service, Intermountain Research Station. p. 159-167.
- Oliver, C.D. and J.B. McCarter. 1996. Developments in decision support for landscape management. in M. Heit, H.D. Parker, and A Shortreid (eds.), *GIS Applications in Natural Resources 2*. GIS World Books. Fort Collins. p. 501-509.
- Long, J.N., J.B. McCarter and S.B. Jack. 1988. A modified density management diagram for coastal Douglas-fir. *Western J. Applied Forestry*. 3:88-89.
- McCarter, J.B. and J.N. Long. 1986. A Lodgepole pine density management diagram. *Western J. Applied Forestry*. 1:6-11.
- Long, J.N. and J.B. McCarter. 1985. Density management diagrams: a practical approach. In *Growth and Yield and Other Mensurational Tricks*. D.D Van Hooser (Ed.). General Technical Report INT-193. 25-29.
- McPherason, E.G., J. McCarter and F. Baker. 1985. A microcomputer based park tree inventory system. *J. Arboric.* 177-181.

**Other Publications:**

- Cornick, Jeff, Andrew Cooke, Todd Hanson, Tad Mason, James McCarter, Matt McLaughlan, Elaine Oneil, John Perez-Garcia, Luke Rogers. 2011. *Washington Forest Biomass Supply Assessment*. 122 pages.
- McCarter, James B. 2008. Thinning in Pacific Northwest Conifers. *Northwest Woodlands*. 24(4): 16-19.

- McCarter, J.B., and D.P. Hanley. 2007. Landscape Management System: A Computer Tool for Helping Family Forest Owners Make Management Decisions. Extension Bulletin EB2024. Pullman, WA: Washington State University. 38 p.
- Perleberg, A. B. and J. B. McCarter. 2005. Forest Stewardship Coached Planning Curriculum Incorporates LMS. Western Forester. 50(5): 3 p.
- Zobrist, K.W., McCarter, J.B., Hanley, D.P. 2004. Inventory Wizard: A new tool that makes it easy to get started with the Landscape Management System. Extension Bulletin EB1983. Pullman, WA: Washington State University Press. 8p.
- Ceder, K. R. and J. B. McCarter. 2004. "Assessing Fire Risk with the Landscape Management System and FFE-FVS." Western Forester. Vol. 49 no.3 pp.20-22
- C. Larry Mason, Kevin Ceder, Heather Rogers, Thomas Bloxton, Jeffrey Cornick, Bruce Lippke, James McCarter, and Kevin Zobrist. 2003. Investigation of Alternative Strategies for Design, Layout and Administration of Fuel Removal Projects. Rural Technology Initiative, College of Forest Resources, University of Washington, Box 352100, Seattle, WA 98195-2100, www.ruraltech.org. 78 pages.
- Hanley, D.P., C.L. Mason, J.B. McCarter (2002). "Landscape Management System: Bringing Training to Rural Forest Managers." Journal of Forestry. 100(5): p. 5.
- Turnblom, Eric C., Mariano M. Amoroso, James B. McCarter, Charles L. Mason, Bruce R. Lippke, Kevin W. Ceder. 2002. Estimate of Sequestered Carbon in King County Forests. College of Forest Resources, University of Washington, P.O. Box 352100, Seattle, WA 98195-2100

**Conference/Professional Meeting Presentations:**

- **Appalachian Society of American Foresters/Virginia Forestry Association – Forestry Summit**, Williamsburg, VA, Apr 2-4, 2014: Workshop: Mapping Software and Online Data Sources for Landowners and Foresters.
- **Wood Exports Conference**, New Bern, NC, Nov 13-15, 2013: Oral Presentation: Carbon Footprint and Life Cycle Assessment
- **Society of American Foresters National Convention 2013 – Charleston, SC**, Oct 23-27, 2013:
  - Oral Presentation: Quantification of variation in biomass estimates from forest inventory plots
  - Oral Presentation: Using the Landscape Management System (LMS) for alternative management evaluation
- **Western Mensurationists Meeting**, Leavenworth, WA, June 23-25, 2013: Oral Presentation: Experiences conducting large scale growth and yield simulations using FIA inventory plot data and the Forest Vegetation Simulator
- **Biomass and Bioenergy Seminar**, Wood Energy and Resource Center, Princeton, WV, May 6-7, 2013: Oral Presentation: Biomass Life Cycle Analysis Future Trends
- **ACF Meeting**, May 21<sup>st</sup>, 2013 – Oral Presentation: Using Hafley-Smith model to predict growth response to treatments
- **FIA 2012 Symposium** – Baltimore, MD, Dec 3-5, 2012: Oral Presentation: Use of FIA data for large scale biomass and carbon assessment projects
- **Society of American Foresters National Convention** – Spokane, WA, Oct 23-28, 2012: Oral Presentation: Large scale biomass/carbon assessment using inventory plot data and growth & yield models

- **Council of Forest Engineering (COFE) Annual Meeting** – New Bern, NC, September 9-12, 2012: Oral Presentation: Washington Forest Biomass Supply Assessment: Challenges of High Resolution Spatial Analysis
- **SOFAC 2012**
- **Association of Natural Resource Extension Professionals, 2012 Conference** – Hendersonville, NC, May 20-23, 2012: Oral Presentation: Communicating Environmental Regulations Across Boundaries: Two Case Studies with the EPA. Oral Presentation: Forestry Issues Forum Teleconference Series: Past, Present, and Future
- **Society of American Foresters National Convention – Hawaii, November 1-5, 2011**: Oral presentation: Washington Forest Biomass Supply Assessment: Challenges of a High Resolution Analysis
- **8<sup>th</sup> Annual Sustainable Energy Conference, Renewables: Biomass, Biomaterials and Liquid Fuels Session, April 26, 2011** – Oral Presentation: State of Washington Forest Biomass Supply Assessment Project Overview: data sources, analytical techniques, and biomass calculation sensitivity.
- **16<sup>th</sup> Biennial Southern Silviculture Research Conference (BSSRC)** – Charleston, SC, Feb 15-17, 2010: Abstract accepted: “Carbon assessment for sequestration projects: variation in assessment procedures and growth estimates – an Ozark Mountains case study.”
- **FIA Symposium 2010 – Monitoring Across Borders** – Knoxville, TN, Oct 5-7, 2010: Abstract accepted: “Using FIA inventory plot data to assess fire risk and sequestered carbon in U.S. west fire prone ecosystems”
- **Society of American Foresters National Convention** - Orlando, FL, October 1-3, 2009: Oral presentation: ” Forest Carbon Assessment: Comparison of estimation techniques and impact of wood products in the sequestration discussion”
- **NRCS Forestry Discipline Meeting** – Reno, NV, November 4th, 2008: Introduction to the Landscape Management System for Natural Resource Conservation Service (NRCS) service forester training meeting.
- **North Carolina Division Society of American Foresters State Meeting** – June 26<sup>th</sup>, 2008: “CORRIM: Life-Cycle Performance of Renewable Building Materials”.
- **Virginia Department of Forestry – Ecosystem Services Working Group Meeting** – August 15<sup>th</sup>, 2007: Attend meeting and make presentation on carbon assessment capabilities of the Landscape Management System
- **North Carolina Teachers Academy** – Summer 2007: Guest lecture at New Bern and Asheville Teachers Academy on the Landscape Management System.
- **APSAF Winter Meeting** – Pinehurst, NC, January 26<sup>th</sup>, 2007: Make presentation on technology in forestry: growth & yield modeling, visualization, LIDAR, and other emerging technologies.
- **ANREP 2006** – Park City, Utah, May 15-17 2006: Attend meeting of extension professions and make poster presentation.
- **2004 Western Mensurationists’ Meeting** – Warm Springs, OR, June 20-22<sup>nd</sup>, 2004: Oral Presentation: Kevin Ceder and James McCarter. Fire Risk Assessment Tools in LMS.
- **Pacific Northwest Research Station - Innovation Fair** – Portland, OR, February 25<sup>th</sup>, 2004: Booth Presentation: Applications of USDA Forest Service models and tools within the Landscape Management System.
- **Bureau of Indian Affairs - Forest Management, Inventory and Planning Meeting** – Portland, OR, 2002: Oral Presentation: James B. McCarter. “The Landscape Management Project”

- **California Licensed Foresters Association Annual Conference** – Sacramento, CA, 2002: Oral Presentation: James B. McCarter. “The Landscape Management Project.”
- **Society of American Foresters** – Portland, OR, 1999: Oral Presentation: James B. McCarter. “Landscape Management System: A Personal Computer-Based System for Integrating Silvicultural Activities at the Landscape Level.”
- **USDA Forest Service, Forest Vegetation Simulator Conference** – Fort Collins, CO, 1997: Oral Presentation: James B. McCarter. “Integrating forest inventory, growth and yield, computer visualization, and other analysis tools into a landscape management system.”
- **USDA Forest Service, Regional Silviculture Meeting** – Portland, OR, 1996: Oral Presentation: James B. McCarter. “The Landscape Management Project.”
- **International Union of Forestry Research Organizations – XX World Congress** – Tampere, Finland, 1995: Oral Presentation: James B. McCarter, Jeremy Wilson, Mike Wimberly, Jeff Moffett, and Chadwick D. Oliver. “The Role of Stand Dynamics in Forest Management Decision Support Systems”
- **Decision Support – 2001 – Combined events of 17<sup>th</sup> Annual Geographic Information Seminar and Resource Technology '94 Showcase**, Delta Chelsea Inn, Toronto, Ontario, September 12-16, 1994: Poster Presentation: A Landscape Management System

**Professional Meetings Attended:**

- **NC GIS 2015**, Raleigh, NC, February 25-27, 2015
- **Appalachian Society of American Forests Winter Meeting**, Columbia, SC, January 21-23, 2015
- **Society of American Foresters National Convention**, Salt Lake City, UT, Oct 2014
- **NC Division Society of American Foresters Summer Meeting**, Smithfield, NC, June 4-6, 2014
- **Appalachian Society of American Foresters Winter Meeting/Virginia Forestry Summit**, Williamsburg, VA, April 204, 2014
- **Wood Exports Conference**, New Bern, NC, Nov 13-15, 2013
- **Society of American Foresters National Convention**, Charleston, SC, Oct 23-27, 2013
- **SOFAC 2013**, Durham, NC, August 7-9, 2013
- **Western Mensurationists Meeting**, Leavenworth, WA, June 24-25, 2013
- **ApSAF Winter Meeting**, Charlotte, NC, Jan 31-Feb 2, 2013
- **Society of American Foresters National Convention**, Spokane, WA, 2012
- **FIA Science Symposium**, Baltimore, MD, December 4-6, 2012
- **Council on Forest Engineering (COFE) Annual Meeting**, New Bern, NC, Sept. 9-12, 2012
- **SOFAC 2012**, Durham, NC, August 8-9, 2012
- **Association of Natural Resource Extension Professionals (ANREP) – 2012 Conference**, Hendersonville, NC, May 20-23, 2012
- **ApSAF Winter Meeting**, Jan 2012
- **Society of American Foresters National Convention**, Hawaii, November 1-5, 2011
- **SOFAC 2011**, Durham, NC
- **North Carolina Division SAF Meeting**, Laurel Springs, NC, June 9-10, 2011
- **ApSAF Winter Meeting**, Charleston, SC, Jan 26-28, 2011

- **North Carolina Division SAF Meeting**, Carthage, NC, June 2-4, 2010
- **ApSAF Winter Meeting**, Greenville, NC, January 27-29, 2010
- **Society of American Foresters National Convention**, Orlando, FL, Oct 1-4, 2009
- **ApSAF Winter Meeting**, Newport News, VA, January 22-23, 2009
- **Society of American Foresters National Convention**, Reno, NV, November 5-9, 2008
- **Biomass South 2008: Charting a Course for Biofuels, Biopower, and Bioproducts**, Raleigh, NC, September 21-23.
- **North Carolina Division SAF State Meeting**, June 26, 2008
- **ApSAF Winter Meeting**, Myrtle Beach, SC, Jan 24-25, 2008
- **Society of American Foresters National Convention**, Portland, OR, Oct 24-27, 2007
- **ApSAF Winter Meeting**, Pinehurst, NC, January 26, 2007.
- **IUFRO Plantations Conference**, Charleston, SC, 9-13 October, 2006
- **SAF National Convention**, Pittsburg, PA, Oct 25-Oct 29, 2006.
- **Association of Natural Resource Extension Professionals (ANREP) – 2006 Conference** – Park City, Utah, May 15-17 2006.
- **2004 Western Mensurationists' Meeting**, Warm Springs, OR, June 20-22<sup>nd</sup>, 2004.
- **Risk Assessment for Decision-Making Related to Uncharacteristic Wildfire**, Portland, OR, November 17-19, 2003
- **Society of American Foresters National Convention**, Winston-Salem, NC, 2002
- **Growth Model User's Group Meetings** – occasional (usually quarterly) meetings on growth model applications and issues.
- **2002 Western Menurationist's Meeting**, Levanworth, WA, June 24-25<sup>th</sup>, 2002
- **USDA Forest Service, 2<sup>nd</sup> Forest Vegetation Simulator Conference** – Fort Collins, CO, 2002
- **Society of American Foresters National Convention**, Portland, OR, 1999
- **USDA Forest Service – Forest Vegetation Simulator Conference** – Fort Collins, CO, 1997
- **USDA Forest Service – Regional Silviculture Meeting**, Portland, OR, 1996
- **International Union of Forestry Research Organizations – XX World Congress**, Tampere, Finland, 1995
- **Decision Support – 2001 – Combined events of 17<sup>th</sup> Annual Geographic Information Seminar and Resource Technology '94 Showcase**, Delta Chelsea Inn, Toronto, Ontario, September 12-16, 1994

### **Other Professional Experience:**

- **EPA Climate Change Adaptation Plan Symposium**, June 2013 – Provide distance education and teleconference technology and support for virtual symposium.
- **Sustainable Energy Conference** 2010, 2011, April 19-20 2012, 2013 – Provide Audio Visual and Speaker support for keynote and concurrent sessions. Average attendance ~1000 participants.
- **Breeding for Value in a Changing World, Breeding and Genetic Resources of Southern US and Mexican Pines, IUFRO Working Group 2.02.20, 2013 Conference** – Provide audio visual and speaker support for plenary and concurrent sessions
- **Atlantic White-Cedar Website Development**, 2012-2013 – follow-up to 2012 AWC Conference, creating website with comprehensive information about the species

- **Biomass Ecosystem Sustainability Team Website, 2012-2013** – Content development and maintenance of information on various projects researching impacts of harvesting on biomass and effectiveness of biomass harvesting guidelines
- **Society of American Foresters Winter Meeting and NC Division Summer Meetings, ApSAF 2013, NC Division 2012, ApSAF 2012, NC Division 2011, ApSAF 2011** – Provide audio visual and speaker support, post presentations to [www.apsaf.org](http://www.apsaf.org), provide online registration and online payment portal for meetings.
- **NC State, Forestry and Environmental Outreach Program, 2008-2013** – Provide Information Technology support, develop secure payment portal, support various online information management and evaluation systems (phpabstracts, LineSurvey), develop and maintain internal events archive
- **Audio/Visual and Distance Learning Coordinator for State-EPA Innovation Symposium** - Provide technical assistance on audio/visual and distance learning options for the 2010 State-EPA Environmental Innovation Symposium, including website development, email marketing, Wiki development, and onsite coordination of A/V equipment.
- **Digital Proceedings for Biomass South 2008 Conference – September/October 2008** - Created HTML based digital proceedings including PDF copies of all available presentations and summary notes taken during presentations. Proceedings are available as a downloadable CD (or physical copy) from:  
[http://www.ces.ncsu.edu/nreos/forest/feop/biomass-south/order\\_proceedings.html](http://www.ces.ncsu.edu/nreos/forest/feop/biomass-south/order_proceedings.html)

## **Professional Service:**

### **Graduate Student Committee:**

NC State University

- Kevin Harnish (MS)
- Matt Haunsperger (MS)
- James Jeuck (PhD)
- Kyle Marion (MS)
- Jesse Daystar (PhD 2014)
- Laurie Gharis (PhD 2012)
- Blake Jordan (MS 2012)
- Nate Osborne (MS 2012)
- Jesse Daystar (MS 2011)

Oregon State University

- Nate Osborne (PhD)

### **Departmental Committee:**

University of Washington

- Computer and Technology Committee, 2002-2004

**Cooperative Monitoring Evaluation and Research (CMER) Committee, Science Review Committee (SRC), Associate Editor for Silviculture – April 2002** - Served as editor for a review of Washington State Department of Natural Resources proposed research on the effectiveness riparian buffers.

### **Peer Reviews:** Articles reviewed for:

Western Journal of Applied Forestry (2004)

Canadian Journal of Forest Research (Nov 2004; Jan 2010)

### **Tour and Visitor Hosting:**

- **University of Puerto Rico/NC State University – Cross-Study Tour**, June 10-17, 2012 – Tour Puerto Rico and North Carolina ecosystems to compare and contrast ecological and cultural differences for students and faculty from UPR and NC State.
- **University of New Brunswick, International Forest Studies**, Tour of industrial forestry in North Carolina
- **Triangle Chapter SAF @ Earth Day**, Sponsored by NC Natural History Museum, Raleigh, NC – Forestry Information Display and Seedling Giveaway
- **Washington Park Arboretum Education Program**, May 2004, Conduct tour of Arboretum and introduction to Pacific Northwest forests for Swedish Timber Measurement Association Board Members
- **University of New Brunswick, International Forest Studies (FOR 5973)**, Presentation on Rural Technology Initiative, Landscape Management System, and related topics to field trip participants.
- **Western Washington Fair, Educational Exhibit Host**, Puyallup, WA
  - Washington State Society of American Foresters, 2004, 2005
  - Washington State Society of American Foresters: Wildfire in Washington, 2003

- Washington State Society of American Foresters: Silviculture, 2002
- Washington State Society of American Foresters: Wildfire Awareness, 2001

### **Professional Affiliations:**

- **Society of American Foresters (SAF)** : Member 1982-present
  - ApSAF Website Manager : 2009-present
  - NC Division SAF Communications Chair : 2009-present
  - Triangle Chapter Chair : 2008
  - South Puget Sound Chapter Chair : 2004
- **American Forestry Association (AFA)** : Member 1979-present
- **Xi Sigma Pi** : Member 1984-present

### **Computing Skills:**

- **Software Experience** – Microsoft Office (Word, Excel, Access, Powerpoint), Video Editing and Re-Mastering (Camtasia Studio), ArcGIS for Server 10.x, ArcGIS 10.x, ArcView 3.x, QGIS, OpenGeo Suite, R/S-Plus, SPSS, SAS, MySQL, PostgreSQL.
- **Programming** – C++, C, C#, Python, R, JavaScript, Visual Basic (VB and VBA), HTML, PHP, XML, FORTRAN, xBASE.
- **System Administrative** – Microsoft Windows (8, 7, Vista, XP, 2000, Me, 9x, 3.1), Linux (Debian; Redhat; Ubuntu).

### **Community Service:**

- **Southeastern Forestry Conclave/Stihl Timbersports Series**, State Farmers Market, Raleigh, NC, March 15-17, 2012 – Provide onsite audio support for Stihl competition, setup, hosting, and cleanup.
- **NC Logging Demo day**, NC Fairgrounds, Raleigh, NC, Aug 15<sup>th</sup>, 2009 – Volunteer Host
- **NCSU CNR Arbor Day Celebration**, March 21<sup>st</sup>, 2009, 2010, 2011, 2013 – NCSU/SAF seedling give away volunteer
- **Arboretum Foundation**, 2004-2006 – special events volunteer