

Thomas Maness

Professor
Department of Forest Resources Management
Faculty of Forestry
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Education

PhD, Forest Economics, 1989
University of Washington, Seattle WA

MS, Forest Operations, 1981
Virginia Polytechnic Institute and State University, Blacksburg VA

BSF, Forest Resources Management (*Magna cum Laude*), 1979
West Virginia University, Morgantown WV

Academic Experience

2007 – Professor, Faculty of Forestry
University of British Columbia

2004 – 2007 Director, BC Forum on Forest Economics & Policy
Faculty of Forestry
University of British Columbia

Responsible for the creation, funding and administration of a new forest policy unit at UBC. The Forum publishes synthesis papers, conducts symposia and workshops with the goal of informing and involving forest sector stakeholders in public policy changes. The BC Forum achieved great success as a leading voice in issues around forest tenure, competitiveness, and forest community sustainability. More information about the BC Forum can be found at www.bc-forum.org.

1994 – 1999 Project Leader & Founding Director
Centre for Advanced Wood Processing
Faculty of Forestry
University of British Columbia

Responsible for the creation, funding and administration of a new institute and undergraduate program in wood products manufacturing. I led the initiative to raise \$12.5 million in permanent endowment funds, supervised the design and construction and raised funds for a new \$7.5 million building, acquired \$2.5 million in donated equipment for the state-of-the-art teaching and research lab, staffed the Centre with administrative and technical staff, helped to recruit new permanent faculty members and adjunct faculty to teach many of the new classes, developed new continuing education programs and international symposia, raised research funds, and taught 4 of the new classes in the program until new faculty were in place.

Professional Experience

1990 – 1995 Assistant Professor, Dept. of Harvesting and Wood Science, UBC

Developed and taught undergraduate courses in production optimization, quality control and forest biometrics. I developed a new graduate program in production optimization and supervised six graduate students.

1987 – 1990 Consulting Engineer, Weyerhaeuser Company Research and Development, Tacoma WA

Developed and applied operations research tools for use in forest investment planning, harvest planning and manufacturing optimization in Weyerhaeuser's regions throughout the Southern and Western United States.

1981 – 1985 Project Engineer, Forest Operations Research
Weyerhaeuser Company

I completed several field assignments during my time at Weyerhaeuser. In 1982 I worked with a corporate team to develop a large linear programming system for planning harvest operations to source sawmills in the Washington and Oregon region. In 1983 I was woods industrial engineer for the Klamath Falls Oregon division and was responsible for analyzing and improving productivity in logging operations including harvest and road layout, and the design and operation of the woods transportation systems (truck and rail). In 1984 I developed software for analyzing and tracking logging contractor performance and implemented this on the Mt. St Helens Tree Farm in Washington State. In 1985 I left the company to begin work on a PhD.

Courses Taught

Undergraduate Courses

FRST 318 Forest and Conservation Economics. This is a third year course for forestry and conservation students that covers basic forest economics, finance, forest certification and non-timber valuation.

WOOD 492 Modelling for Decision Support. Applied course in operations research techniques used in forestry, forest operations and manufacturing. For undergraduate and graduate students in forestry and wood science.

Graduate Courses

FRST 532 Survey of Modelling. Graduate level course in operations research methods for new graduate students in forestry and wood products. 2003.

I have also taught Introductory Forest Biometrics, Forest Management, Wood Products Manufacturing, and Quality Improvement.

Publications (Last 6 Years)

- Weber, S., R. Trostler and T.C. Maness. 2009. Evaluation of Two Forest Governance Models Based on St'at'imc First Nation Goals. Book chapter accepted in: *Changing the Culture of Forestry in Canada: Engaging Canada's Aboriginal Peoples in Sustainable Forest Management*. Marc G. Stevenson and David Natcher Editors. Canadian Conservation Institute. Ottawa, Canada.
- Maness, T.C. 2009. Forest management and climate change mitigation: Good policy requires careful thought. Accepted for publication in *Journal of Forestry*. January 2009.
- Kozak, R.A., W.C. Spetic, H.W. Harshaw, T.C. Maness and S.R.J. Sheppard. 2009. Public priorities for sustainable forest management in six forest dependent communities of British Columbia. Accepted for publication in *Canadian Journal of Forest Research*. September 2008.
- Kimbell, G., T.C. Maness and H. Brown. 2008. More energy from wood: What are the prospects? USDA Forest Service Discussion Paper. To be submitted to *Journal of Forestry*. January 2009.
- Maness, T.C. 2008. Carbon sequestration on the nation's forests: What's the goal? Policy Analysis Briefing Paper prepared for the USDA Forest Service. August 2008.
- Maness, T.C. 2008. The potential for wood energy and the role of government policy. Policy Analysis Briefing Paper prepared for the USDA Forest Service. Submitted to *Energy Policy*. November 2008.
- Schwab, O. T.C Maness, G. Bull, and D. Roberts. 2008. Modelling the effect of changing market conditions on mountain pine beetle salvage harvesting in British Columbia. Submitted to *Canadian Journal of Forest Research*. December 2008.
- Maness, T.C. 2008. Forests as a potential feedstock for cellulosic ethanol. Policy Analysis Briefing Paper prepared for the USDA Forest Service and Presented at the 1st Annual Symposium on American Forest Policy. Society of American Foresters. Reno, NV. November 2008.
- Schwab, O. and T.C Maness. 2008. Building spatial forest inventories from aggregated data. Submitted to *Journal of Forestry*. November 2008.
- Schwab, O. and T.C Maness. 2008. Modelling structural development in the forest sector with the EWA-Lite algorithm. Submitted to *Forest Science*. November 2008.
- Maness, T.C., S. Vahid and O. Schwab. 2008. Order driven supply chain models for just in time manufacturing in the forest products industry. Technical paper prepared for Forest Products Innovation Canada. April 2008. 47 pp.
- Marinescu, M.V. and T.C. Maness. 2008. A multi-criteria timber allocation model integrating sawmilling decisions. *Journal of Forest Products Business Research*. 5(7).
- Vahid, S. and TC Maness. 2008. Techniques for modelling product demand in supply chain optimization models. Submitted to the *International Journal of Simulation and Process Modelling*. November 2008.

- Maness, T.C. 2008. Best practices in the Latin American forest products industry: some lessons for British Columbia. Technical paper prepared for Forest Products Innovation Canada. August 2008. 37 pp.
- Thoews, S.E, T.C Maness, and C. Ristea. 2008. Using flow simulation as a decision tool for improvements in sawmill productivity. *Maderas. Ciencia y tecnología*. 10(3):229-242. Concepcion, Chile.
- Staudhammer, C., T.C. Maness and R.A. Kozak. 2007. New SPC methods for identifying lumber manufacturing defects with real-time laser range sensor data. *Journal of Quality Technology*. 39(3):224-240.
- Maness, T.C. 2007. Tradeoff analysis for decision making in natural resources: where we are and where we are headed. *BC Journal of Ecosystems & Management*. Vol 8. Nbr. 2.
- Ye, L. and T.C. Maness. 2006. A goal-seeking optimization algorithm for optimizing chop saws. *Forest Products Journal*. 56 (11/12):73-78.
- Schwab, O. and T.C. Maness. 2005. The Economic Impact of Natural Disturbances – A Review and Synthesis of Policy Responses. Report submitted to the Canadian Forest Service Mountain Pine Beetle Team.
- Staudhammer, C., R.A. Kozak and T.C. Maness. 2006. SPC methods for detecting simple sawing defects using real-time laser range data. *Wood and Fiber Science*, Vol. 38, No. 4, pp. 396-716.
- Maness, T.C. 2005. Technology and the Competitiveness of the Wood Products Sector. BC Forum Synthesis Paper SP 05-05.
- Kozak, R.A. and T. C. Maness. 2005. Towards a value focused forest sector in British Columbia. BC Forum on Forest Economics and Policy Issues Brief.
- Marinescu, M.V., T. Sowlati, and T.C. Maness. 2005. The development of a timber allocation model using data envelopment analysis. *Canadian Journal of Forest Research*. Vol 35, Nbr. 10, pp. 2304-2315.
- Schajer, G.S., J.I. Gazzarri, D.C. Wong, T.C. Maness and R.A. Kozak. 2005. Scanner system for separate-sided lumber surface measurements. *Forest Products Journal*. 55(12):175-180.
- Staudhammer, C.L. V.M. LeMay, R.A. Kozak, and T.C. Maness. 2005. Mixed-model development for real-time statistical process control data in wood products manufacturing. *Forestry, Biometry, Modeling and Information Sciences*. 1(2005):19-35.
- Schwab, O., G. Bull, and T. Maness. 2005. A mill-specific timber demand equation for southern and central Finland. *Journal of Forest Economics*. 11(2): 95-106.
- Farrell, R. and T.C. Maness. 2005. A relational database approach to a linear programming based DSS for production planning in secondary wood products manufacturing. *Decision Support Systems*. 40 (2005) 183-196.

- Ristea, C, and T.C. Maness. 2005. Analyzing the distribution of moisture content in kiln-dried lumber using goodness of fit techniques – with procedures. *Journal of the Institute of Wood Science*. 17(1):11-23.
- Ristea, C and T.C. Maness. 2005. Lognormal control charts for moisture content of kiln-dried lumber. *Wood and Fiber Science*. 37(1)2005 pp. 160-174.
- Maness, T.C. and R. Farrell. 2004. A multi-objective scenario evaluation model for sustainable forest management using criteria and indicators. *Canadian Journal of Forest Research*. 34:2004-2017 (2004).
- Haartveit, E, R.A. Kozak and T.C. Maness. 2004. Supply chain management mapping for the forest products industry: three cases from western Canada. *Journal of Forest Products Business Research*. Volume No. 1, Article 5.
- Maness, T.C., R. A. Kozak and C. Staudhammer. 2004. Reliability testing of statistical process control procedures for manufacturing with multiple sources of variation. *Wood and Fiber Science*. 36(3):443-458.
- Kozak, R.A., T.C. Maness and T. Caldecott. 2003. Solid wood supply impediments for secondary wood producers in British Columbia. *The Forestry Chronicle*. 79(6):1107-1120.
- Rasmussen, H. K., R.A. Kozak, and T.C. Maness. 2003. An analysis of machine shape defects in British Columbia sawmills. *Forest Products Journal*. 54(6):47-56.
- Maness, T.C., R.A. Kozak and C. Staudhammer. 2003. Applying real-time statistical process control to manufacturing processes exhibiting between and within part size variability. *Journal of Quality Engineering*. 16(1):115-127.
- Kozak, R.A. and T.C. Maness. 2003. A system for continuous process improvement in wood products manufacturing. *Holz als Roh und Werkstoff*. 61:95-102.
- Maness, T.C., and S.E. Norton. 2002. A multiple period combined optimization approach to forest production planning. *Scandinavian Journal of Forest Research*. 17:460-471
- Maness, T.C., C. Staudhammer and R. A. Kozak. 2002. Statistical considerations for real time size control in wood products manufacturing. *Wood and Fiber Science*. 34(3).476-484.
- Maness, T.C. and D.C. Wong. 2002. A benchmarking system for evaluating the profitability and efficiency of optimizing chop saw systems. *Forest Products Journal*. 52(10):52-61.
- Maness, T.C. and R.A. Kozak. 2002. New industry specific quality certification. *Quality Progress*. 35(6):65-71.

**Research
Projects as
Principal
Investigator
(Last 6 Years)**

Optimized Populus feedstocks and novel enzyme systems for a British Columbia bioenergy sector. Economic and Social Component. Genome British Columbia. \$233,000. 2008 – 2010.

Using interactive forest planning models and visualization to assess public preferences for trade-offs among possible SFM futures. National Science and Engineering Research Canada (NSERC). Sustainable Forest Management Network. \$431,000. 2006-2008.

Decision support methods for simultaneous assessment of timber and non-timber resource objectives. Canadian Forest Products, Ltd. \$180,000. 2005–2007.

Stability of stakeholder values in land management planning. International Environmental Institute. \$40,000. 2005-2006.

Feasibility and conceptual design of a highly flexible manufacturing facility. National Science and Engineering Research Canada (NSERC) and Forest Products Innovation Canada. \$248,000. 2005-2006.

Multi-criteria strategic planning for sustainable forest management. National Science and Engineering Research Canada (NSERC). \$95,000. 2003-2007.

Modelling for forest stewardship planning incorporating wood products, environmental and societal values. Wood Flow Systems Corp. \$250,000. 2003-2007.

Determining the economic costs of sustainable forest management using criteria and indicators. Forest Innovation Investment. \$115,000. 2002.

Forest to product modelling system. National Science and Engineering Research Canada (NSERC) and Forestry Canada. \$298,000. 2002-2003.

Real time statistical process control for wood products mfg. National Science and Engineering Research Canada (NSERC) Strategic Grant. \$372,000. 2001-2003.

**Recent
Conference
Organization**

Conference Chair: Creating New Opportunities: The Future of Forest Tenure and Management in BC. BC Forum on Forest Economics and Policy. 200 attendees from government, industry and academia. Vancouver, BC. November 2006.

Conference Chair: Besieged by Global Change: Defining the Future of BC's Forest Industry. BC Forum on Forest Economics and Policy. 235 attendees from government, industry and academia. Vancouver, BC. January 2005.

Conference Organizing Committee. Value Focused Forestry. BC Forum on Forest Economics and Policy. 180 attendees from government, industry and academia. Vancouver, BC. October 2005.

Conference Organizing Committee. The Future Forest Ecosystems of BC – Are We on the Right Track? University of Northern BC, Prince George BC, December 2005.