

A Partial List of Research Publications from the upper Cedar River Watershed, near North Bend, WA

Thank you to Tom Hinckley, Douglas Sprugel, Bob Edmonds, and Amy LaBarge for assistance in compiling this list. Thank you to Seattle Public Utilities for continued support of research activities in this regionally important and beautiful watershed!

To submit corrections or additions to this list, please contact Susan Dickerson-Lange at dickers@uw.edu

Lower Watershed

1965

Cole, D.W. and S.P. Gessel. 1965. Movement of elements through a forest soils as influenced by tree removal and fertilizer additions. In C.T. Youngberg (ed.) Forest-soil relationships in North America, pp 95-104. Corvallis, Oregon state Uni. Press.

1967

LaRock, R.G. 1967. Infiltration beneath a forest floor. In Charles W. Harris Hydraulics Laboratory, Tech Rep. 21: Seattle, Univ. Washington, Department of Civil Engineering

Cole, D.W., S.P. Gessel and S. F. Dice. 1967. Distribution and cycling of nitrogen, phosphorous, potassium, and calcium in a second-growth Douglas-fir ecosystem. In Symposium: Primary Productivity and mineral cycling in Natural Ecosystems. Pp 197-232. Ecol Soc. Amer. AAAS Meeting, New York.

Cole, D.W. 1967. The forest soil: retention and flow of water. Proc. Society of American Foresters Meeting, Sept. 1966, Seattle, Washington pp. 150-154.

1968

Cole, D. W. 1968. A system for measuring conductivity, acidity and rate of flow in a forest soil. Water Resources Res. 4:1127-1136.

McColl, J.G. and D.W. Cole. 1968. A mechanism of cation transport in a forest soil. Northwest Science 42:134-140

Riekerk, H. 1968. The movement of DDT in forest soil solutions. Soil Sci. Soc. Am Proc. 32:595-596.

Cole, D.W. and S.P. Gessel. 1968. Cedar River research: a program for studying the pathways, rates and processes of elemental cycling in forest ecosystems. Forest Resources Monograph, College of forest Resources, UW, Seattle.

1970

- Ballard, T. M. 1970. Gaseous diffusion evaluation in forest humus. *Soil Sci. Soc. Am. Proc.* 34(3):532-533.

1972

- McCull, J.G. 1972. Dynamics of ion transport during moisture flow from a Douglas-fir forest floor. *Soil Sci. Soc. Am. Proc.* 36:668-674.
- Fritschen, L. J. 1972. The lysimeter installation on the Cedar River watershed. In J.F. Franklin, L.J. Dempster and R. H. Waring (eds.) *Proceedings: Research on Coniferous Forest Ecosystems*, p. 255-260, Pacific NW Forest and Range Exp. Stat., Portland.
- Grier, C.C. 1972. Elemental transport changes occurring during development of a second-growth Douglas-fir ecosystem. In J.F. Franklin, L.J. Dempster and R. H. Waring (eds.) *Proceedings: Research on Coniferous Forest Ecosystems*, p. 103, Pacific NW Forest and Range Exp. Stat., Portland.

1973

- McCull, J.G. 1973. A model of ion transport during moisture flow from a Douglas-fir forest floor. *Ecology* 54:181-187.
- McCull, J.G. 1973. Environmental factors influencing ion transport in a Douglas-fir forest soil in western Washington. *J. Ecology* 61:71-83.
- Fritschen L.J., L. Cox, and R. Kinerson. 1973. A 28-meter Douglas-fir in a weighing lysimeter. *For. Sci.* 19:256-261.
- Fritschen, L.J. and P. Doraiswamy. 1973. Dew: An addition to the hydrological balance of Douglas-fir. *Water Resources Res.* 9:891-894.

1974

- Fritschen, L.J., W. Gay, and H.R. Holbo. 1974. Estimating evaporation from forests by meteorological and lysimetric methods. In R. H. Waring and R. L. Edmonds (eds.). *Integrated Research in the Coniferous Biome IV. Coll. For. Resources*, Univ Wash, Seattle.

1975

- Turner, J. and J. N. Long. Accumulation of organic matter in a series of Douglas-fir stands. *Can. J. For. Res.* 5:681-690.

1976

- Turner, J., D.W. Cole and S.P. Gessel. 1976. Mineral nutrient accumulation and cycling in a stand of red alder (*Alnus rubra*). *J. Ecol.* 64:965-974.

1977

- Fritschen, L.J. J. Hsia, and P. Doraiswamy. 1977. Evaporation of Douglas-fir determined with a weighing lysimeter. *Water Resources Res.* 13:145-148.
- Johnson, DW and DW Cole. 1977. Sulfate mobility in an outwash soil in western Washington. *Water, Air and Soil Pollution* 7:489-495.
- Lassoie, J, D.R. M. Scott and L.J. Fritsche. 1977. Transpiration studies in Douglas-fir using the heat pulse technique. *For Sci.* 23:377-390.
- Cole, D.W. and D.W. Johnson. 1977. Atmospheric sulfate additions and cation leaching in a Douglas-fir ecosystem. *Water Resources. Res.* 12:313-317.
- Turner, J. 1977. Effect of nitrogen availability on nitrogen cycling in a Douglas-fir stand. *For Sci.* 23:307-316.

1979

- Edmonds, R.L. 1979. Decomposition and nutrient release in Douglas-fir needle litter in relation to stand development. *Can. J. For. Res.* 9(1):132-140.
- Turner, J. M.J. Lambert and S.P. Gessel. 1979. Sulfur requirements of nitrogen fertilized Douglas-fir. *For Sci.* 25:461-467.
- Grier, C.C. 1979. Productivity assessment of Pacific Northwest forests. In S.P. Gessel, R.M. Kenady, and W.A. Atkinson (eds.) *Proc. Forest Fertilization Conference* pp 23-29. *Coll. For. Res. Univ. Washington, Seattle.*
- Johnson, DW, DW Cole and SP Gessel. 1979. Acid precipitation and soil nitrate adsorption properties in a tropical and temperate forest soil. *Biotropica* 11:38-42.
- Vitousek, P.M., J.R. Gosz, C.C. Grier, J.M. Melillo, W.A. Reiners, and R.L. Todd. 1979. Nitrate losses from disturbed ecosystems. *Science* 204:469-474.

1980

- Edmonds, R.L. 1980. Litter decomposition and nutrient release in Douglas-fir, red alder, western hemlock and Pacific silver fir ecosystems in western Washington. *Can. J. For. Res.* 10:327-337.
- Johnson, D.W. and D.W. Cole. 1980. Anion mobility: Relevance to nutrient transport from forest ecosystems. *Environ. Int.* 3:79-90.
- Vogt, K.A. and R.L. Edmonds. 1980. Patterns of nutrient concentrations in basidiocarps in western Washington. *Can. J. Bot.* 58:694-698.
- Vogt, K.A., R.L. Edmonds, G.C. Antos, and D.J. Vogt. 1980. Comparisons between carbon dioxide evolution, ATP concentrations and decomposition in red alder, Douglas-fir, western hemlock and Pacific silver fir ecosystems in western Washington. *Oikos* 35:72-79.

1981

- Thompson, GR, M. Behan, J. Mandzak, and C. Bowen. 1981. On the evaluation of nutrient pools in forest soils. *Clays and Clay Minerals* 25:411-416.
- Smith, J.A. K.J. Ranson, D. Nguyen, L. Balick, L.E. Link, L.J. Fritschen and B.A. Hutchison. 1981. Thermal vegetation canopy models. *Remote Sensing of the Environment* 11:311-326.

1982

- Fritschen, L.J. and J. R. Simpson. 1982. A pressure transducer for determining atmospheric pressure and evaporation with a hydraulic weighing lysimeter. *Ag. Meteorol.* 26:272-278.
- Fritschen, L.J. and J. R. Simpson. 1982. An automatic system for measuring Bowen ratio gradients using platinum resistance elements: In *Temperature: Its Measurement and Control in Science and Industry*, pp. 739-742. Amer. Inst. Physics Washington, D.C.
- Fritschen, L.J., K. Balick and J.A. Smith. 1982. Interpretation of infrared nighttime J. *Appl. Meteorol.* 21:730-734.
- Vogt, D.J. and R.L. Edmonds. 1982. Nitrate and ammonium levels in relation to site quality in Douglas-fir soil and litter. *Northwest Sci.* 56:83-89.
- Edmonds, R.L. (ed.). 1982. *Analysis of Coniferous forest ecosystems in the western United States.* US/IBP Synthesis Series. Hutchinson Ross, Stroudsburg, Pennsylvania. 419 p.
- Johnson, D.W., D.W. Cole, C.S. Bledsoe, K. Cromack, R.L. Edmonds, S.P. Gessel, C.C. Grier, B.N. Richards and K.A. Vogt. 1982. Nutrient cycling in the Pacific Northwest. pp. 186-232. *In* R.L. Edmonds (ed.), *Analysis of Coniferous forest ecosystems in the western United States.* Hutchinson Ross Publishing Co. Stroudsburg, Pennsylvania. 419 p.
- Van Miegroet, H and D.W. Cole. 1982. Effects of acid rain on the soil nutrient status of and solution acidity: A discussion of basic mechanisms with special reference to forest soils of the Pacific Northwest. National Council of the Paper Industry for Air and Stream Improvement (NCASI) Tech. Bull 390. pp 1-18.

1983

- Johnson, D.W. and D.E. Todd. 1983. Relationships among iron, aluminum, carbon and sulfate in a variety of forest soils. *Soil Sci. Soc. Amer. J.* 47:792-800.
- Johnson D.W., H. van Miegroet, D.W. Cole, and D.D. Richter. 1983. Contributions of acid deposition and natural processes to cation leaching from forest soils: A review. *J. Air Pollut. Control Assoc.* 33:1036-1041.
- Vogt, K.A., E.E. Moore, D.J. Vogt and R.L. Edmonds. 1983. Conifer fine root and mycorrhizal root biomass within the forest floors of Douglas-fir stands. *Can. J. For. Res.* 13:429-437.

1984

- Johnson D.W., H. van Miegroet, D.W. Cole, and D.D. Richter. 1984. Effects of acid deposition and natural processes to cation leaching from four diverse forest ecosystems. In EL Stone (ed.) *Forest Soils and Treatment Impacts: Proc. 6th North American Forest Soils Conference*, pp. 247-263 Knoxville, Univ. Tennessee.
- Johnson, D.W. 1984. Sulfur cycling in forests. *Biogeochemistry* 1:29-43.
- Van Miegroet, H. and D.W. Cole. 1984. The impact of nitrification on soil acidification and nitrate leaching in a red alder ecosystem, *J. Environ. Qual.* 13:586-590.

1985

- Cole, D.W. and H. Van Miegroet. 1985. Influence of N₂-fixation on nutrient leaching and H⁺ budgets in forest soils: Comparison between red alder and Douglas-fir ecosystems. In *Proc. IUFRO Symposium on Forests and Water, Sept 2-5*, pp 335-342. Grafenau, Bavarian Forest, National Park Verwaltung Bayerischer Wald, Federal Republic of Germany.
- Johnson, D.W., I.S. Nilsson, J.O. Reuss, and R.S. Turner 1985. Predicting soil and water acidification. *Proc of workshop, Knoxville, Tennessee, March 26-29, 1984*
- Smith, M.O., J.R. Simpson and L.J. Fristchen. 1985. Spatial and temporal variation in eddy flux measures of heat and momentum in the roughness sublayer above a 30-m Douglas-fir forest. In B.A. Hutchinson and B.B. Hicks (eds.). *The Forest-Atmosphere Interaction*. Pp. 563-481. D. Reidel, Dordrecht.
- Van Miegroet, H and D.W. Cole. 1985. Internal vs. atmospheric sources of acidification in forest soils of the Pacific Northwest. In J. H. Baldwin (ed.) *Acid Rain in the Pacific Northwest. Proc. of the Acid Rain Symposium and Annual Conference of the Northwest Association for Environmental Studies* pp. 48-66, University of Victoria. British Columbia.
- Van Miegroet, H and D.W. Cole. 1985. Acidification sources in red alder and Douglas-fir soils: Importance of nitrification. *Soil Sci. Am. J.* 49:1274-1279.
- Vogt, K.A. D.J. Vogt, E.E. Moore, W. Littke, C.C. Grier, and L. Leney. 1985. Estimating Douglas-fir fine root biomass from living bark and starch. *Can. J. For. Res.* 15:177-179

1986

- Johnson D.W., D.W. Cole, H. Van Miegroet, and F.W. Horng. 1986. Factors affecting anion movement and retention in four forest soils. *Soil Sci. Soc. Am. J.* 50:776-783.
- Johnson, D.W., D.D. Richter, H. Van Miegroet, D.W. Cole and J. M. Kelly. 1986. Sulfur cycling in forest ecosystems. *Water, Air and Soil Poll.* 30:965-979.

1987

- Edmonds, R.L. 1987. Decomposition rates and nutrient dynamics in small diameter woody litter in four forest ecosystems in Washington, U.S.A. *Can. J. For. Res.* 17:499-509.

1988

Cole, D.W, G. V Wolfe and P.S. Homann (compilers). 1988. Cedar River Research 1961-1988. Contrib. 64, Inst. Forest Resources, College of Forest Resources, University of Washington, Seattle, WA.

1989

Edmonds, R.L. and F.A. Basabe. 1989. Ozone concentrations above a Douglas-fir forest canopy in western Washington, USA. *Atmospheric Environment* 23:625-629.

Edmonds, R.L. and A. Eglitis. 1989. The role of the Douglas-fir beetle and wood borers in the decomposition of and nutrient release from Douglas-fir logs. *Can. J. For. Res.* 19:853-859.

Erickson, H. E. and R. L. Edmonds. 1994. Influence of Mount St. Helens' ash on litter decomposition II. Experimental studies with Douglas-fir needles. *Can. J. For. Res.* 24:832-838.

1995

Cole, D. W., J. Compton, P.S. Homann, R. L. Edmonds and H. Van Miegroet. 1995. Comparison of carbon accumulation in Douglas-fir and red alder forests. p 527-546 In W. W. McFee and J. M. Kelly (eds.). *Carbon Forms and Functions in Forest Soils*. Soil Science Society of America. Madison, WI.

1999

Barg, A. K. and R. L. Edmonds. 1999. Influence of partial cutting on site microclimate, soil nitrogen dynamics and microbial biomass in Douglas-fir stands in western Washington. *Can. J. For. Res.* 29:705-713.

2005

Cline, E. T. J. F. Ammirati, and R. L. Edmonds. 2005. Mycorrhizal fungus communities of Douglas-fir seedlings: Effects of proximity to mature trees. *New Phytologist* 166(3): 993-1009.

2007

Cline, E., B. Vinyard, and R. Edmonds. 2007. Spatial effects of retention trees on mycorrhizas and biomass of Douglas-fir seedlings. *Can. J. For Res.* 37:430-438.

2011

Cram, J. M., P. M. Kiffney, R. Klett and R. L. Edmonds. 2011. Do fall additions of salmon carcasses benefit food webs in experimental streams? *Hydrobiologia*. DOI 10.1007/s10750-011-0819-9

Upper Watershed

(majority at Findley Lake)

1974

Singer, M., and F. C. Ugolini. 1974. Genetic history of two-well drained subalpine soils formed on complex materials. *Can. J. Soil Sci.* 54(4):656-662.

1976

Singer, M., and F. C. Ugolini. 1976. Hydrophobicity in the soils of Findley Lake, Washington. *Forest Science* 22(1):54-58.

1977

Ugolini, F.C., H. Dawson, and J. Zachara. 1977. Direct evidence of particle migration in the soil of a Podzol. *Science* 188:603-605.

1978

Dawson, H.J., F.C. Ugolini, B.F. Hrutfiord, and J. Zachara. 1978. Role of soluble organics in the soil processes of a podzol, Central Cascades, Washington. *Soil Science* 126(5):290-296.

Singer, M., F. C. 1978. In situ study of podsolization on tephra and bedrock. *Soil Sci. Soc. Am. J.* 42:105-111.

1980

Edmonds, R. L. 1980. (see Lower Watershed)

Vogt, K.A., R.L. Edmonds, G.C. Antos, and D.J. Vogt. 1980. (see Lower Watershed)

1981

Dawson, H.J., B.F. Hrutfiord, R. Zasoski, and F.C. Ugolini. 1981. The molecular weight and origin of the yellow organic acids. *Soil Science* 132(7):191-199.

Grier, C.C., K.A. Vogt, M.R. Keyes and R.L. Edmonds. 1981. Biomass distribution and above-ground and below-ground production in young and mature *Abies amabilis* zone ecosystems of the Washington Cascades. *Can. J. For. Res.* 11: 155 – 167. 320 citations.

Grier, C.C. and W.A. Milne. 1981. Regression equations for calculating component biomass of young *Abies amabilis* (Dougl.) Forbes. *Can. J. of For. Res.* 11: 184 – 187. 8 citations.

Hinckley, T. M. and J. P. Lassoie. 1981. Radial growth in coniferous and deciduous trees: A comparison. *In: Proceedings of IUFRO Conference, Physiological Aspects*

and Forest Ecology (W. Tranquillini, ed.) *Mitteil. der Forstl. Bundesversuchsanstalt Wien* 142/1:17-56.

Vogt, K.A., R.L. Edmonds, and C.C. Grier. 1981. Seasonal changes in biomass and vertical distribution of mycorrhizal and fibrous-textured conifer fine roots in 23-year-old and 180-year-old subalpine *Abies amabilis* stands. *Can. J. For. Res.* 11: 223 – 229. 84 citations

Vogt, K.A., R.L. Edmonds and C.C. Grier. 1981. Dynamics of ectomycorrhizae in *Abies amabilis* stands. The role of *Cenococcum graniforme* (Sow.) Fred. and Winge. *Holarctic Ecology* 4:167-173.

Vogt, K.A., R.L. Edmonds and C.C. Grier. 1981. Biomass and nutrient concentrations of sporocarps produced in mycorrhizal and decomposer fungi in *Abies amabilis* stands. *Oecologia* 50:170-175.

1982

Vogt, K.A., C.C. Grier, C.E. Meier and R.L. Edmonds . 1982. Mycorrhizal role in net primary production and nutrient cycling in *Abies amabilis* ecosystems in western Washington. *Ecology* 63: 370 – 380. 164 citations

1983

Burdick, C. L., F. C. Ugolini, and R. J. Zasoski. 1983. Trace metal dynamics in soils from a subalpine forest ecosystem. In R. E. Wilding and E. A. Jenne (eds.) *Biological availability of Trace metal. Special Edition: Science of the Total Environment* 28:231-248.

Hinckley, T. M., R. O. Teskey, R. H. Waring, and Y. Morikawa. 1983. The water relations of true firs. pp. 85-92. *In: True Fir Symposium* (C. D. Oliver and R. M. Kenady, eds.) Institute of Forest Resources, Contr. No. 45. University of Washington.

Johnson, D. W., and D. E. Todd. 1983 (see Lower Watershed)

Teskey, R. O., T. M. Hinckley, and C. C. Grier. 1983. Effect of interruption of flow path on stomatal conductance of *Abies amabilis*. *J. Expt. Bot.* 34(147):1251-1259. 53 citations.

Vogt, K.A., C.C. Grier, C.E. Meier, and M.R. Keyes. 1983. Organic-matter and nutrient dynamics in forest floors of young and mature *Abies amabilis* stands in western Washington, as affect by fine root input. *Ecol. Monogr.* 53: 139 – 157. 122 citations

1984

Edmonds, R.L. 1984. Long-term decomposition and nutrient dynamics in Pacific silver needles in western Washington, USA. *Can. J. For. Res.* 14:395-400

Hinckley, T. M., H. Imoto, K. M. Lee, S. Lacker, Y. Morikawa, K. A. Vogt, C. C. Grier, M. R. Keyes, R. O. Teskey, and V. A. Seymour. 1984. Impact of tephra deposition on growth in conifers: The year of the eruption. *Can. J. For. Res.* 14:731-739. 16 citations.

- Teskey, R. O., C. C. Grier, and T. M. Hinckley. 1984. Change in photosynthesis and water relations with age and season in *Abies amabilis*. *Can. J. For. Res.* 14:77-84. 68 citations.
- Teskey, R. O., T. M. Hinckley, and C. C. Grier. 1984. Temperature induced change in the water relations of *Abies amabilis* (Dougl.) Forbes. *Plant Physiol.* 74:77-80. 59 citations.
- Ugolini, F.C. 1984. Soil development in the *Abies amabilis* zone of the Central Cascades, Washington. In C.D. Oliver and R. M. Kenady (eds.) *Proceedings of the Biology and Management of True Firs in the Pacific Northwest Symposium*. pp 165-176. College of Forest Resources, University of Washington, Seattle.

1985

- Hinckley, T. M., G. H. Goldstein, F. Meinzer, and R. O. Teskey. 1985. Environmental constraints at arctic, temperate-maritime and tropical treelines. *In: Proceedings of 3rd IUFRO Workshop, Establishment and Tending of Subalpine Forest: Research and Management* (H. Turner and W. Tranquillini, eds.). *Eidg. Anst. forstl. Versuchswes.* 270:21-30.
- Lassoie, J. P., T. M. Hinckley, and C. C. Grier. 1985. Ecophysiology of the Forests of the Pacific Northwest. pp. 127-161. *In: Physiological Ecology in North American Plant Communities* (B. F. Chabot and H. A. Mooney, eds.). Chapman and Hall, Ltd., London, England.
- Meier, C.E., C.C. Grier, and D.W. Cole. 1985. Belowground and above-ground N and P use by *Abies amabilis* stands. *Ecology* 66: 1928 – 1942. 52 citations
- Teskey, R. O., C. C. Grier, and T. M. Hinckley. 1985. Relation between root system size and water inflow capacity of trees growing in a subalpine forest. *Can. J. For. Res.* 15:669-672. 21 citations.

1986

- Teskey, R. O. and T. M. Hinckley. 1986. Moisture: Effects of water stress on trees. pp. 9-33. *In: Stress Physiology and Forest Productivity* (T. C. Hennessey, P. M. Dougherty, S. V. Kossuth and J. D. Johnson, eds.). Martinus Nijhoff Publ., Netherlands.
- Vogt, K.A., C.C. Grier, and D.J. Vogt. 1986. Production, turnover, and nutrient dynamics of aboveground and belowground detritus of world forests. *Adv. in Ecol. Res.* 15: 303 – 377. 595 citations.

1987

- Tucker, G. F., T. M. Hinckley, J. W. Leverenz, and S. Jiang. 1987. Adjustments of foliar morphology in the acclimation of understory Pacific silver fir following clearcutting. *For. Ecol. and Manag.* 21:249-268.

1988

Sprugel, D.G. and T.M. Hinckley. 1988. Tree branch autonomy concept. *In: Response of Trees to Air Pollution: The Role of Branch Studies* (W.E. Winner and L.G. Phelps, eds.) Proc. Workshop National Forest Response Program. Boulder, CO 5-6 Nov. 1987, pp. 7-23.

1989

Dahlgren, R.A. and F.C. Ugolini. Aluminum fractionation of soil solutions from unperturbed and tephra-treated spodosols, Cascade Range, Washington, USA. *Soil Science Society of America Journal* 53: 559 – 566. 72 citations.

1990

Leverenz, J. W. and T. M. Hinckley. 1990. The effect of shoot structure on leaf area index and productivity of evergreen conifer stands. *Tree Physiol.* 6:135-149.

Sprugel, D. G. 1990. Components of woody-tissue respiration in young *Abies amabilis* (Dougl.) Forbes trees. *Trees: Structure and Function* 4:88-98.

1991

Brooks, J. R., T. M. Hinckley, E. D. Ford, and D. G. Sprugel. 1991. Foliage dark respiration in *Abies amabilis* (Dougl.) Forbes: Variation within the canopy. *Tree Physiol.* 9:325-338.

Lassoie, J.P. and T.M. Hinckley, editors. 1991. *Techniques and Approaches in Forest Tree Ecophysiology*. CRC Press, Boca Raton, Florida. 599 pp. Chapters by Leverenz, Sprugel and Vogt all deal with work done at CRW.

Sprugel, D. G., T. M. Hinckley, and W. Schaap. 1991. The theory and practice of branch autonomy. *Ann. Rev. of Ecol. and System.* 22:309-334.

Whitehead, D. and T. M. Hinckley. 1991. Models of water flux through forest stands: Critical leaf and stand parameters. *Tree Physiol.* 9:35-57.

1992

Coleman, M. D., G. M. McNaughton, T. M. Hinckley, and B. Smit. 1992. Shoot and root frost hardiness in four subalpine conifer species. *Can. J. For. Res.* 22:932-938.

Hinckley, T. M., D. Ford, G. Segura, and D. Sprugel. 1992. Key processes from tree to stand level. *In: Implications of climate change for Pacific Northwest forest management*, (G. Wall, ed.). Department of Geography Publication Series, Occasional Paper 15, University of Waterloo, Ontario, Canada.

Sorrensen-Cothorn, K. A., E. D. Ford, and D. G. Sprugel. 1993. A model of competition incorporating plasticity through modular foliage and crown development. *Ecol. Monogr.* 63:277-304.

1994

Brooks, J.R., T.M. Hinckley and D.G. Sprugel. 1994. Acclimation responses of mature *Abies amabilis* sun foliage to shading. *Oecologia* 100:316-324.

1995

Smith, W.K. and T.M. Hinckley, eds. 1995. Resource Physiology of Conifers. Academic Press, San Diego. 396 pp.

Smith, W.K. and T.M. Hinckley, eds. 1995. Ecophysiology of Coniferous Forests. Academic Press, San Diego. 338 pp.

1996

Brooks, J.R., T.M. Hinckley and D.G. Sprugel. 1996. The effects of light acclimation during and after foliage expansion on photosynthetic function of *Abies amabilis* foliage within the canopy. *Oecol.* 107: 21-32.

Sprugel, D.G., J.R. Brooks, and T.M. Hinckley. 1996. Effect of light on shoot and needle morphology in *Abies amabilis*. *Tree Physiol.* 16:91-98.

1997

Martin, T.A., K.J. Brown, J. Cermák, R. Ceulemans, J. Kucera, F.C. Meinzer, J.S. Rombold, D.G. Sprugel, and T.M. Hinckley. 1997. Crown conductance and tree and stand transpiration in a second growth *Abies amabilis* forest. *Can. J. For. Res.* 27:797-808. 85 citations.

1998

Buchmann, N., T.M. Hinckley and J.R. Ehleringer. 1998. Carbon isotope dynamics in *Abies amabilis* stands in the Cascades. *Can. J. For. Res.* 28:808-819.

Hinckley, T.M., D.G. Sprugel, J.R. Brooks, K.J. Brown, T.A. Martin, D.A. Roberts, W. Schaap, and D. Wang. 1998. Scaling and integration in trees. In: *Ecological Scale: Theory and Applications* (D.L. Peterson and V.T. Parker, eds.), Chapter 15: 309-337, Columbia Univ. Press, New York.

Stenberg, P., H. Smolander, D. G. Sprugel, and S. Smolander. 1998. Shoot structure, light interception, and distribution of nitrogen in a Pacific silver fir canopy. *Tree Physiology* 18:759-768.

1999

Hinckley, T.M., M.R. Keyes, T.A. Martin and D.G. Sprugel. 1999. Lessons from montane forests of the Pacific Northwest. *Phyton* 39 (4):73-84.

Martin, T.A., T.M. Hinckley, F.C. Meinzer and D.G. Sprugel. 1999. Boundary layer conductance, leaf temperature and transpiration of *Abies amabilis* branches. *Tree Physiol.* 19:435-443.

2001

Martin, T.A., K.J. Brown, T.M. Hinckley, J. Kucera, F.C. Meinzer and D.G. Sprugel. 2001. Control of transpiration in a 220-year-old *Abies amabilis* forest. *Forest Ecology and Manag.* 152:211-224.

2002

Sprugel, D. G. 2002. When branch autonomy fails: Milton's law of resource availability and allocation. *Tree Physiology* 22:1119-1124.

2004

Hinckley, T.M. 2004. A whole tree perspective. *Tree Physiology Volume of the Encyclopedia of Forest Science* (David Rook, ed.), pp. 1578 – 1583, Academic Press, London.

2009

Sprugel, D. G., K. G. Rascher, R. Gersonde, M. Dovčiak, J. A. Lutz, and C. B. Halpern. 2009. Spatially explicit modeling of overstory manipulations in young forests: Effects on stand structure and light. *Ecological Modelling* 220: 3565-3575

2012

Lutz, J. A., K. A. Martin, and J. D. Lundquist (2012), Using Fiber-Optic Distributed Temperature Sensing to Measure Ground Surface Temperature in Thinned and Unthinned Forests, *Northwest Sci.*, 86(2), 108–121, doi:10.3955/046.086.0203.

2013

Lundquist, J. D., S. E. Dickerson-Lange, J. A. Lutz, and N. C. Cristea (2013), Lower forest density enhances snow retention in regions with warmer winters: A global framework developed from plot-scale observations and modeling, *Water Resour. Res.*, 49(10), 6356–6370, doi:10.1002/wrcr.20504.

Martin, K. A., J. T. Van Stan, S. E. Dickerson-Lange, J. A. Lutz, J. W. Berman, R. Gersonde, and J. D. Lundquist (2013), Development and testing of a snow interceptometer to quantify canopy water storage and interception processes in the rain/snow transition zone of the North Cascades, Washington, USA, *Water Resour. Res.*, 49(6), 3243–3256, doi:10.1002/wrcr.20271

2015

Dickerson-Lange, S. E., J. A. Lutz, K. A. Martin, M. S. Raleigh, R. Gersonde, and J. D. Lundquist (2015), Evaluating observational methods to quantify snow duration under diverse forest canopies, *Water Resour. Res.*, 15, doi: 10.1002/2014WR015744.

Listing of Researchers who have completed research in the upper Cedar River Watershed

Unpublished reports and dissertations may be available from the University of Washington Library. See citations in next section.

Graduate Students

J.R. Brooks (MS, Ph.D.)
M.R. Keyes (Ph.D.)
T.A. Martin (Ph.D.)
C. Meier (Ph.D.)
J.S. Rombold (Ph.D.)
R.O. Teskey (Ph.D.)
G.F. Tucker (MS)
K.A. Martin (MS)
S.E. Dickerson-Lange (Ph.D.)

Post-docs

MD Coleman
JW Leverenz

Faculty

ED Ford
CC Grier
TM Hinckley
JA Lutz
JD Lundquist
DG Sprugel
KA Vogt

Visiting Faculty/Scientists

N Buchmann
J Cermak
R Ceulemans
JR Ehleringer
SM Jiang
J Kucera

JP Lassoie
FC Meinzer
Y Morikawa

Graduate Students Theses

Lower watershed

- Balci, N. 1964. Physical, chemical and hydrological properties of certain western Washington forest floor types. Ph.D
- Rahman, A.H.M.M. 1964. A study of the movement of elements from tree crowns by natural litterfall, stem flow, and leaf wash. MF
- Knutsen, S.K. 1965. Hydrologic processes in thirty to thirty-five year old stands of Douglas fir and alder in western Washington. MF
- Irby, F. 1967. A study of sampling variability of bulk density, gravel content and total nitrogen in two forest soils. MS thesis, Seattle, Univ. Of Washington.
- LaRock, R.G. 1967. Some moisture characteristics of an Everett soil. MSE
- Ballard, T.M. 1968. Carbon dioxide production and diffusion in forest floor material; a study of gas exchange in biologically active porous material. PhD
- Schichte, A.K. 1968. The mineralogy of the Everett soil series at the Cedar River Watershed. MF.
- McCull, J.G. 1969. Ion transport in forest soil; models and mechanisms. PhD
- Windsor, G.J. 1969. Dynamics of phosphorus, silicon, iron and aluminum movement in gravitational rainwater in a Douglas-fir ecosystem. PhD
- Crane, W.J.B. 1972. Urea-nitrogen transformations, soil reactions, and elemental movement via leaching and volatilization, in a coniferous forest ecosystem following fertilization. PhD
- Grier, C.C. 1972. Effects of fire on the movement and distribution of elements within a forest ecosystem. PhD
- Bourgeois, W. W. 1973. Potassium release from Bir horizons of two forest soils. Ph.D.
- Long, J.N. 1973. Initial stages of secondary plant succession in a series of *Pseudotsuga menziesii*/*Gaultheria shallon* stands in western Washington. MS
- Leverenz, J.W. 1974. Net photosynthesis as related to shoot hierarchy in a large dominant Douglas-fir tree. MS
- Machno, P.S. Jr. 1974. Modeled and observed storage and transport of rainwater in a Douglas-fir ecosystem, PhD
- Johnson, D.W. 1975. Processes of elemental transfer in some tropical, temperate, alpine, and northern forest soils factors influencing the availability and mobility of major leaching agents. PhD
- Lassoie, J.P. 1975. Diurnal and seasonal basal area fluctuations in Douglas-fir tree stems of different crown classes in response to tree water status. PhD
- Minyard, P. L. 1975. Studies on natural decomposition of needles and on Douglas-fir sapwood by *Poria weirii* as indicated by solubility changes. MS
- Richter, K. O. 1975. The foraging ecology of the banana slug *Ariolimax columbianus* Gould (Arionidae). PhD
- Turner, J. 1975. Nutrient cycling in a Douglas-fir ecosystem with respect to age and nutrient status. PhD
- Deyrup, M.A. 1976. The insect community of dead and dying douglas-fir: Diptera, Coleoptera, and Neuroptera. PhD.
- Jensen, E.C. 1976. The crown structure of a single codominant Douglas-fir. MS

- Long, J.N. 1976. Forest vegetation dynamics within the *Abies amabilis* zone of a western Cascades watershed. PhD
- Doraiswamy, P.C. 1977. The radiation budget and evapotranspiration of a Douglas-fir stand. PhD
- Hsia, Y. 1979. Computation of radiation balance and transpiration of a Douglas-fir tree in a forest. PhD.
- Eglitis, A. 1980. Aspects of host selection behavior in two populations of the Douglas-fir beetle : *Dendroctonus pseudotsugae* Hopkins (Coleoptera: Scolytidae). PhD
- Van Miegroet, H. 1980. Effects of urea fertilization and sawdust amendments on microbial activity and nutrient leaching in two soil ecosystems with different nitrogen status. MS
- Horng, Fu-Wen. 1983. Anion retention mechanisms in four forest soils: relevance to the leaching process. PhD
- Simpson, J.R. 1983. Predicting evapotranspiration, leaf resistance and soil water budget for a Douglas-fir stand. PhD
- Cole, K.C. 1985. Effects of tephra deposition on the movement and distribution of nutrients within a forest soil. MS
- Van Miegroet, H. 1986. Role of N status and N transformation in H⁺ budget, cation loss and S retention mechanisms in adjacent Douglas-fir and red alder forests. PhD.
- Wolfe, G.V. 1988. Atmospheric deposition to a forest ecosystem: seasonal variation and interactions with the canopy. MS
- Compton, J.E. 1990. Phosphorus distribution and cycling under red alder: implications for second rotation alder growth and nutrition. MS
- Compton, J.E. 1994. Phosphorus dynamics in alder and Douglas-fir stands. PhD
- Barg, A.K. 1996. Effects of alternative silviculture on soil properties and Douglas-fir seedling growth in western Washington. MS
- Sparks, G.B. 2003. Influence of forest-clearcut edges on fungal fruiting, litter decomposition and seedling growth in low elevation second-growth conifer forests in Western Washington. PhD
- Cline, E. T. 2004. Mycorrhizal fungus communities of Douglas-fir (*Pseudotsuga menziesii*) seedlings and trees : effects of proximity to residual trees . PhD
- Mollot, L.A. 2005. The use of remote sensing, GIS, and multivariate vegetation analysis to explain the distribution of riparian plant communities at multiple spatial scales PhD
- Cram, J.M. 2008. How do experimental stream food webs respond to salmon carcass loading rates? MS.
- Fletcher, D. 2010. Concentrations of PBDEs and PCBs in water in the Cedar River and fish from the Lake Washington/Cedar/Sammamish watershed . MS

Upper Watershed (Findley Lake)

- Rau, G.H. 1974. The natural dispersal of plant and insect litter into and around a subalpine lake. MS
- Antos, G. C. 1978. Fungal population dynamics within the forest floors in Pacific silver fir, western hemlock, Douglas-fir, and red alder ecosystems in Washington. MS

- Kurtz, R.H. 1978. Litterfall dynamics and forest structure at a subalpine forest-lake interface in the western Cascades of Washington. MS
- Meier, C.E. 1981. The role of fine roots in N and P budgets in young and old mature *Abies amabilis* ecosystems. PhD
- Keyes, M.R. 1982. Ecosystem development in *Abies amabilis* stands of the Washington Cascades: Root growth and the role in net primary production. PhD.
- Teskey, R.O. 1982. Acclimation of *Abies amabilis* to water and temperature stress in a natural environment. PhD.
- Burdick, C.L. 1983. Trace metal dynamics in soils from a subalpine forest ecosystem, Cascade Range, Washington. MS
- Brooks, J.R. 1987. Foliage respiration of *Abies amabilis*. MS
- Dahlgren, R.A. 1987. Aluminum biogeochemistry in a subalpine *Abies amabilis* ecosystem. PhD
- Zabowski, D. 1988. Seasonal variations in the soil solution of a subalpine Spodosol collected using low-tension lysimetry and centrifugation. PhD
- Brooks, J.R. 1993. Light acclimation in *Abies amabilis* canopies. PhD
- Martin, T.A. 1997. Transpiration and boundary layer resistance from the shoot to the canopy scale in *Abies amabilis* forest. PhD.
- Rombold, J.S. 2003. The fate of canopy water in the Findley Lake basin, WA PhD
- G.F. Tucker (MS)

Wildlife

- Radler, K. 1977. Assessment of elk movements and habitat selection. MS
- Schoen, J.W. 1977. The ecological distribution and biology of wapiti (*Cervus elaphus nelsoni*) in the Cedar River Watershed. PhD
- Zahn, H.M. 1985. Use of thermal cover by elk (*Cervus elaphus*) on a western Washington summer range. PhD
- Hanley, T.A. 1980. Nutritional constraints on food and habitat selection by sympatric ungulates. PhD
- Fornia, C.M. 1982. An evaluation of the relationship of migratory elk elevational distribution and weather factors, especially snow depth. MS