Education

Ph.D. in Ecology 1986 from University of Georgia. Dissertation on detrital carbon dynamics in forests following harvesting.

B.S. in Biology 1978 from University of Minnesota.

Positions/Titles

Mattson is currently sole proprietor of Ecosystem Northwest, a natural resources consulting firm. Ecosystems Northwest was started in 1994 in Corvallis, Oregon. It employs between 2 to 10 people seasonally including Mattson full time. The office was moved to Mt. Shasta, California though the majority of the work still occurs in Oregon. Ecosystems Northwest specializes in a variety of field surveys of streams and forests, carbon assessments, watershed analyses, and written syntheses of application of science to resource management. Clients include federal and state government, watershed councils, private forest firms, and Indian tribes.

Mattson is also an adjunct instructor of ecology courses at the College of the Siskiyous, Weed, CA. Mattson also is an "affiliate faculty" with the Department of Forest Science (now Department of Ecosystems and Society) at Oregon State University.

Training

Scientific Take Permits for fish in California and Oregon
California Fish Passage Workshop, For the Sake of Salmon, Fortuna, CA
Watershed Restoration Workshop, American Fisheries Society, Sun River, OR
Survey and Manage Amphibian Workshop, Northwest Scientific Association, Olympia WA
Scientific take permits of fish by electroshocking in Oregon streams
Certified as Watershed Analyst by Washington Depart. of Natural Resources
Certified as Level II stream surveyor, Region 6 U.S. Forest Service
Certified as Senior ecologist by the Ecological Society of America
Appreciation for Services Award from US Forest Service for synthesis work with NAPAP

Research and Professional Experience

- 1991-1997 Courtesy Assistant Professor of Forest Science. Oregon State University, Corvallis, OR. Collaborated with scientists on four projects. Major advisor to Ph.D. candidate. Research projects were funded through faculty position held at University of Idaho. Areas of research were detrital carbon dynamics in forest soil systems; carbon storage in glacial forefronts, effects of nitrogen on soil carbon, root respiration, and soil carbon dioxide efflux.
- 1988-1996 Research Assistant Professor of Forest Resources. University of Idaho, Moscow, ID. Maintained offices in Corvallis, but funded research through University of Idaho. Principal Investigator on four projects. Funds paid own full-time salary plus two graduate students and several technicians. Contributing author on 8 peer-reviewed publications (first author on two) and four gray literature reports (first author on one). Research emphasis was detrital soil carbon dynamics (funded by NSF and USDA) and forest responses to atmospheric deposition of acidic compounds (funded by the National Acidic Deposition Assessment Program).
- 1986-1988 **Research Assistant Professor of Biology**. West Virginia University, Morgantown, WV. Taught introductory biology classes. Principal Investigator on two projects that quantified detrital carbon changes associated with forest cutting and performed repeat measures of forest stand changes in spruce-fir forests in New Hampshire.
- 1981-1986 **Research Graduate Assistant and Teaching Graduate Assistant**. University of Georgia, Athens GA. Performed dissertation research on detrital carbon dynamics

following forest harvesting at the Coweeta Hydrologic Laboratory, Franklin, NC. Also taught introductory biology laboratories, ecology laboratories, and ecology extension course.

Collaborations and Affiliations

Dr. Michael Newton Dr. Bernard Bormann

Mark Nav

Dr. John Marshall Dr. Richard Waring Dr. Joe Zaerr Dr. Wayne Swank

Dr. Marybeth Adams

Jack Waide Dr. Jim Entry

Dr. Ari Jumponen

Oregon State Univ, Emeritus Faculty USDA Pacific NW Research Station USDA Pacific NW Research Station

University of Idaho, Faculty

Oregon State Univ, Emeritus Faculty Oregon State Univ, Emeritus Faculty Coweeta Hydrologic Lab Leader Emeritus

USDA Northern Research Station

USFW USDA-ARS

Kansas State Faculty

Publications

- Mattson, K.G. and W.T. Swank. Woody debris decomposition on Watershed 7. Book Chapter submitted. W.T. Swank and J.B. Webster, editors. Long-Term Response of a Forest Watershed Ecosystem: Clearcutting in the Southern Appalachians
- McDowell NG, JD Marshall, J Qi, K Mattson. 1999. Direct inhibition of maintenance respiration in western hemlock roots exposed to ambient carbon dioxide concentrations. Tree Physiology 19:599-605.
- Jumpponen A, H Vare, KG Mattson, R Ohtonen, and J M Trappe. 1999. Characterization of 'safe sites' for pioneers in primary succession on recently deglaciated terrain. J. of Ecology 87:98-105.
- Lu S, KG Mattson, J Zaerr, and J Marshall. 1998. Root respiration of Douglas-fir seedlings: Effects of N concentration. Soil Biol. Biochem. 30:331-336.
- Jumpponen A, KG Mattson, J Trappe. 1998. Mycorrhizal functioning of *Phialocephala fortinii* with *Pinus contorta* on glacier forefront soil: interactions with soil nitrogen and organic matter. Mycorrhiza 7:261-265.
- Qi J, JD Marshall, and KG Mattson. 1997. High soil carbon dioxide concentrations inhibit root respiration of Douglas-fir. New Phytologist 128: 435-442.
- Mattson KG. 1995. CO₂ efflux from coniferous forest soils: comparisons of measurement methods and effects of added nitrogen. In: R. Lal, J. Kimble, E. Levine and B.A. Stewart, eds. Soils and Global Change. CRC Press, Boca Raton. Pp: 329-341.
- Nay SM, KG Mattson, and BT Bormann. 1994. Biases of chamber methods for measuring soil CO2 efflux demonstrated with a laboratory apparatus. Ecology 75:2460-2463.
- Entry JA, KG Mattson, and W Emmingham. 1993. Effects of soil nitrogen on mineralization of 2,4-D and atrazine in pasture soils. Biology and Fertility of Soils 16:179-182.
- Mattson KG and HC Smith. 1993. Changes in detrital organic matter following forest cutting in West Virginia. Soil Biology and Biochemistry 25:1241-1248.

Government or gray literature, peer-reviewed documents

Entry JA, KG Mattson, and MB Adams. 1993. Carbon balance in forest ecosystems: response to nitrogen. In: Carbon Cycling in Boreal Forests and Sub-Arctic Ecosystems. TS Vinson and TP Kolchugina, eds. USEPA Office of Research and Development, Washington, D.C. EPA/600R-93/084. Pp:155-166.

- Mattson KG, LY Arnaut, GA Reams, SP Cline, CE Peterson, and RJ Vong. 1990. Response of forest trees to sulfur, nitrogen, and associated pollutants. USEPA Environmental Research Laboratory, Corvallis, OR. EPA/600/3-90/074. 134 p.
- Reams GA, WG Warren, RJ Vong, M Bohm, KG Mattson, and LY Arnaut. 1990. Extent and magnitude of recent changes in forest condition and the role of air pollution and non-air pollution factors. USEPA Environmental Research Laboratory, Corvallis, OR. EPA/600/3-90/042. 152 p.
- Peterson CE, KG Mattson, and RJ Mickler. 1989. Seedling response to sulfur, nitrogen, and associated pollutants. . USEPA Environmental Research Laboratory, Corvallis, OR. EPA/600/3-89/081. 104 p.

Other reports, non-published

- Mattson, KG. 2008. Effectiveness Monitoring of Restoration in the Shasta Basin. Report to the California Department of Fish and Game on behalf of the Shasta Resources Conservation District.
- Runyon, J, T Grubert, J Allen, J Reed, V Rogers, and K Mattson. 2002. Lower Middle Fork Willamette River Watershed Assessment. Prepared for the Middle Fork Willamette Watershed Council. 140 pp. plus appendices.
- Mattson, K and A Gallagher. 2001. Rickreall watershed assessment. Prepared for Rickreall Watershed Council, Dallas, OR 130 pp. plus appendices.
- Mattson K, J Runyon, S Fernald, A Gallagher, R Johnson, K Snyder, S Eden, and R Zybach. 1999. Marys River Watershed Preliminary Assessment. Marys River Watershed Council, Philomath, OR. 146 pp. plus appendices.
- Mattson K, S Coveny, B Johnson, J Means, W Weaver, T Williamson, J Reams, and B Rosenbaum. 1998. Quartz Creek and Minor Tributaries Watershed Analysis. Blue River Ranger District, Blue River, OR. 125 pp.
- Andrus C, K Mattson, and J Runyon. 1996. Mercer / Berry Watershed Analysis. Siuslaw National Forest, Corvallis, OR. 129 pp.

Over 100 smaller reports on stream surveys have also been prepared.

Synergistic Activities

Council of Forest Engineers American Fisheries Society Society of American Foresters. International Association for Ecology Soil Science Society Ecological Society of America

Recent presentations given

- 2007 Increased biological response in small streams with forest harvests. Presented to Society of American Foresters National Meetings, Portland, OR, November 2007.
- 2007 Increased biological response in small streams with forest harvests. Presented to American Fisheries Society National Meetings, San Francisco, September 2007.
- 2005 Riparian zones, shade, and stream productivity. Poster presentation at Council of Forest Engineers International meetings, Fortuna, CA July 11-14, 2005
- 2005 Riparian areas. Invited talk to Council of Forest Engineers, Redding, CA Apr 22
- 2004 Riparian areas. Invited talk to Council of Forest Engineers, Arcata, CA Dec 17

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Trends in the Willamette National Forest Level II stream data for 1991-2001. Poster
presentation at the Oregon Chapter of American Fisheries Society, Sun River, OR Feb 2024 2004