

Jeffery A. Hatten
January 1, 2016 - December 31, 2017

TEACHING

Graduate Student Advising

Student Name	Degree	Role	Anticipated Completion
Adrian Gallo	PhD	Committee Chair/Major Professor	2019
Dave Frey	MS	Committee Chair/Major Professor	2017
Lauren Matosziuk	MS	Committee Chair/Major Professor	2017
Francisco Guerrero	PhD	Committee Chair/Major Professor	2018
Kris Richardson	MS	Committee Co-Chair/Co-Major Professor	2017
Adrian Gallo	MS	Committee Chair/Major Professor	2016

SERVICE

University Service

Committee Member, Search committee for FERM Department Head. (September 15, 2016 - Present).

Committee Member, College of Forestry New Building Steering Committee. (September 15, 2015 - Present).

Committee Member, College of Forestry Undergraduate Scholarship Committee. (September 15, 2014 - Present).

Marshal, College of Forestry at Oregon State University Commencement. (June 1, 2016 - June 30, 2016).

Professional Service

Editor, Associate Editor, Soil Science Society of America Journal. (January 1, 2017 - Present).

Chairperson, Forest Range and Wildland Soils Division of the Soil Science Society of America. (November 15, 2016 - Present).

Chairperson, H.J. Andrews Long-term Soil Sampling Program, Corvallis, Oregon. (September 15, 2016 - Present).

Editor, Associate Editor, Forest Science. (June 1, 2016 - Present).

Committee Member, Long-Term Ecological Productivity Project, Corvallis, Oregon. (September 15, 2015 - Present).

Editor, Associate Editor, Fire Ecology Journal. (January 1, 2015 - Present).

Judge, American Geophysical Union Fall Meeting: Outstanding Student Presentation Award, San Francisco, California. (December 12, 2016 - December 16, 2016).

Incoming Chair, Forest Range and Wildland Soils Division of the Soil Science Society of America. (November 15, 2015 - November 14, 2016).

Judge, Western Forestry Graduate Research Symposium, Corvallis, Oregon. (April 22, 2016).

RESEARCH

Contracts, Grants and Sponsored Research (funded)

Contract

Hatten, J. A. (Principal), Segura, C. (Co-Principal), Bladon, K. (Co-Principal), Souder, J. (Co-Principal), "Alsea Revisited Sediment Analysis and Publication," Sponsored by National Council for Air and Stream Improvement, Private, \$31,114.00, Status: Funded. (December 15, 2016 - June 30, 2017).

Grant

Souder, J. A. (Co-Principal), Bladon, K. D. (Co-Principal), Hatten, J. A. (Co-Principal), Ganio, L. M. (Co-Principal), "From chaos to consistency: Moving towards data stewardship and sharing for the Watershed Research Cooperative," Sponsored by OSU Forest Research Laboratory, Fish and Wildlife Habitat in Managed Forests Research Program, Oregon State University, \$24,274.00, Status: Funded. (July 1, 2016 - June 30, 2017).

Other Sponsored Research

Hatten, J. A. (Co-Principal), Bladon, K. D. (Co-Principal), Segura, C. (Co-Principal), "Using sediment-fingerprinting techniques to perform a preliminary analysis of the effects of contemporary harvesting practices on sediment source in the Phase 3 experiment of the Caspar Creek Watershed," Sponsored by CalFire, State, \$63,729.00, Status: Funded. (April 15, 2016 - April 15, 2018).

Contracts, Grants and Sponsored Research (not funded)

Grant

Hatten, J. A. (Principal), Lajtha, K. J. (Co-Principal), Bernard, B. (Co-Principal), Peter, H. (Co-Principal), Kent, K. (Co-Principal), "Preliminary Proposal: Coupling of soil C, N, and cations in contrasting early-successional forests and soils," Sponsored by NSF, Federal, \$0.00, Status: Not Funded. (January 1, 2017 - December 31, 2019).

Hatten, J. A., "Determining controls on post-harvest soil carbon in Douglas-fir forests: Do residual roots replace native C?," Sponsored by NW Climate Hub, Federal, \$0.00, Status: Not Funded. (July 1, 2017 - June 30, 2019).

- Hatten, J. A. (Principal), Belart, F. (Co-Principal), "Effects of Harvest Interval, Residual Retention Practices, and Climate Change on Forest Carbon and Productivity," Sponsored by NW Climate Hub, Federal, \$0.00, Status: Not Funded. (July 1, 2017 - June 30, 2019).
- Hatten, J. A. (Principal), Strimbu, B. M. (Co-Principal), Maguire, D. A. (Co-Principal), "Assessing Forest Nitrogen Cycling In Douglas-Fir Forests Using Lidar, Uav, And Multispectral Products," Sponsored by USDA-AFRI, Federal, \$0.00, Status: Not Funded. (July 1, 2016 - June 30, 2019).
- Hatten, J. A. (Principal), Segura, C. (Co-Principal), Leshchinsky, B. A. (Co-Principal), Rob, W. (Co-Principal), "Isolating the drivers of sedimentation as a result of historical and contemporary harvesting practices in an Oregon Coast Range Lake," Sponsored by OSU COF FWHMF, Oregon State University, Status: Not Funded. (July 1, 2016 - June 30, 2018).
- Argerich, A. (Principal), Bladon, K. D. (Co-Principal), Hatten, J. A. (Co-Principal), "Predicting stream nutrient concentrations from landscape metrics to develop better nutrient criteria," Sponsored by OSU CoF FWHMF, Oregon State University, \$0.00, Status: Not Funded. (July 1, 2016 - June 30, 2018).

Research in Progress

"Forest Nutrition and Soil Carbon" (On-Going).

We have finished our research on the USDA-AFRI NARA project. Our specific role is to test hypotheses related to long-term soil productivity. We are currently in the writing and synthesis phase of this research. To this end I am working on a project to examine the apparent resiliency of soil carbon to harvesting and will present this combination of case-studies and meta-analysis at the 2017 IUFRO conference. We are continuing a major NSF-funded project to look at the mechanisms of stabilization and destabilization in soils collected from NEON sites distributed across North America. We responded to one of our NEON sites being burned by the fires in Great Smoky National Park by writing a RAPID grant to examine dissolved organic carbon in soils and stream water, a collaboration with Kevin Bladon.

"Institute for Working Forest Landscapes Professorship" (On-Going).

I am integrating soils and hydrology research at OSU and expanding research on soil organic matter and site nutrition.

I have spent quite a bit of time in the past year ensuring that the forest soils (Hatten) and hydrology (Bladon and Segura) labs in Richardson Hall meet our needs and that research spaces in the new Peavy Hall improve upon our current spaces. This has involved a significant time commitment to communicate with administrators, colleagues, and research associates stating our needs, cooperating with my new lab-mates, and facilitating the transition.

We (Kevin Bladon, Catalina Segura, and myself) have started several new collaborations in the past year that center on determining the source of sediment in managed watersheds. We are examining sediment source in local watersheds as part of a pilot study. And we started work examining sediment source in the Caspar Creek paired watershed study.

"Quantifying trade-offs and synergies between ecosystem Services in Intensively managed forests." (On-Going).

Global demand for wood resources is expected to increase by up to 40% over the next 15 years,

requiring approaches that maximize timber production on a limited land base. Intensive forest management (IFM), which relies on chemical control of non-commercial species and tree planting has been proposed as a solution to increasing demands for wood. However,

correlative evidence indicates that IFM can have negative impacts on biodiversity and ecosystem services. Despite such studies, changes to management actions have been slow to occur. This is likely for several reasons: (1) previous studies have been correlative rather than experimental so scientific inference has been weak, (2) there appears to be the perception among managers and the public that any biodiversity gain must come at the cost of timber production and jobs (i.e., there is a direct and linear tradeoff), and (3) the benefits of biodiversity in terms

of the ecosystem services they provide have not been thoroughly quantified in forest systems.

This proposal will address these issues by using a long-term, large-scale manipulative experiment to: (1) quantify the effect of IFM on biodiversity, (2) determine how IFM and biodiversity interact to affect ecosystem services (i.e., timber production, carbon sequestration, pollination), (3) model stand and landscape-scale relationships between IFM and multiple biodiversity components and ecosystem services, and (4) examine public opinions and tradeoffs among IFM, biodiversity, and ecosystem services, and also test whether scientific information influences these perceptions. Throughout this research, we will also implement an extensive extension outreach program that is integrated with our four objectives.

"Role of soils in watershed processes".

We have made significant progress examining the role of land use on sediment transport in the Oregon Coast Range. We have found that there appears to be a reduction in sedimentation after the 1970s, possibly as a result of the effects of the Oregon Forest Practices Act. Kris Richardson (WRGP) will defend her thesis and we will submit this for publication before summer, 2017.

Alesea, Trask, HJ Andrews, and Caspar Creek. We are examining the effect of management and disturbance on sediment and particulate organic carbon fluxes and sources. I am leading an effort to analyze and write-up the effect of contemporary harvesting practices on sediment fluxes in the Alesea River. I will also be writing the effect of contemporary harvesting practices on particulate organic carbon and sediment sources in the Trask. Francisco Guerrero will be leading these efforts on examining particulate organic carbon and sediment sources in the HJA. Data collection efforts in Caspar Creek are on-going.

Published Intellectual Contributions

Journal Articles

Krapfl, K. J., Hatten, J. A., Roberts, S. D., Baldwin, B. S., Rousseau, R. J., Shankle, M. W. (2016). Capacity of biochar application and nitrogen fertilization to mitigate grass competition upon tree seedlings during stand regeneration. *Forest Ecology and Management*, 376, 298–309. <http://dx.doi.org/10.1016/j.foreco.2016.06.030>

Krapfl, K. J., Hatten, J. A., Roberts, S. D., Baldwin, B. S., Rousseau, R. J., Shankle, M. W. (2016). Capacity of biochar application and nitrogen fertilization to mitigate grass competition upon tree seedlings during stand regeneration. *Forest Ecology and Management*, 376, 298–309. <http://linkinghub.elsevier.com/retrieve/pii/S0378112716303279>

Callesen, I., Harrison, R., Stupak, I., Hatten, J. A., Raulund-Rasmussen, K., Boyle, J., Clarke, N., Zabowski, D. (2016). Carbon storage and nutrient mobilization from soil minerals by deep roots and rhizospheres. *Forest Ecology and Management*, 359, 322–331. <http://dx.doi.org/10.1016/j.foreco.2015.08.019>

Gray, A.B., Pasternack, G.B., Watson, E.B., Goni, M.A., Hatten, J. A., Warrick, J.A. (2016). Conversion to drip irrigated agriculture may offset historic anthropogenic and wildfire contributions to sediment production. *Science of the Total Environment*, 556, 219–230. <http://www.sciencedirect.com/science/article/pii/S0048969716304454>

Hatten, J. A., Goni, M. (2016). Cupric oxide (CUO) oxidation detects pyrogenic carbon in burnt organic matter and soils. *PLoS ONE*, 11(3).
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0151957>

Tinkham, W.T., Smith, A.M.S., Higuera, P.E., Hatten, J. A., Brewer, N.W., Doerr, S.H. (2016). Replacing time with space: Using laboratory fires to explore the effects of repeated burning on black carbon degradation. *International Journal of Wildland Fire*, 25(2).
http://www.publish.csiro.au/?act=view_file&file_id=WF15131.pdf

Presentations Given

Matoszuik, L. (Author), Hatten, J. A. (Presenter), American Geophysical Union Fall Meeting, "Black carbon content in a ponderosa pine forest of eastern Oregon with varying seasons and intervals of prescribed burns," American Geophysical Union, San Francisco, California. (December 12, 2016).

Gallo, A. (Author & Presenter), Hatten, J. A. (Author), Holub, S. (Author), Lajtha, K. J., American Geophysical Union Fall Meeting, "Does root carbon from harvested trees replace mineral carbon? Effects of LTSP treatments in a western Oregon Douglas-fir forest," American Geophysical Union, San Francisco, California. (December 12, 2016).

Hatten, J. A. (Presenter), Goñi, M. (Author), Gray, A. (Author), Pasternack, G. (Author), Warrick, J. (Author), Watson, E. (Author), Wheatcroft, R. (Author), American Geophysical Union Fall Meeting, "Role of wildfire in controlling the source and flux of particulate organic carbon from a small, mountainous, semi-arid watershed," American Geophysical Union, San Francisco, California. (December 12, 2016).

Frey, D. (Author & Presenter), Hatten, J. A. (Author), Stokely, T. (Author), Betts, M. G. (Author), Vegetation Management Research Cooperative Annual Meeting, "Effects of the interplay between wildlife, plant communities, decomposition, and soils on productivity in intensively managed forest plantations," Vegetation Management Research Cooperative, Corvallis, Oregon. (December 1, 2016).

Hatten, J. A. (Author & Presenter), Swiss Needle Cast Cooperative Annual Meeting, "Determining the role of soils in affecting Swiss needle cast severity," Swiss Needle Cast Cooperative, Corvallis, Oregon. (November 30, 2016).

Matoszuik, L. (Author), Hatten, J. A. (Presenter), Soil Science Society of America Annual Meeting, "Black carbon content in a ponderosa pine forest of eastern Oregon with varying seasons and intervals of prescribed burns," Soil Science Society of America, Phoenix, Arizona. (November 6, 2016).

Gallo, A. (Author & Presenter), Holub, S. (Author), Hatten, J. A. (Author), Soil Science Society of America Annual Meeting, "Does Root Carbon from Harvested Trees Replace Mineral Carbon? Effects of LTSP Treatments in a Western Oregon Douglas-fir Forest," Soil Science Society of America, Phoenix, Arizona. (November 6, 2016).

Frey, D. (Author & Presenter), Hatten, J. A. (Author), Stokely, T. (Author), Betts, M. G. (Author), Soil Science Society of America Annual Meeting, "Effects of the interplay between wildlife, plant communities, decomposition, and soils on productivity in intensively managed forest plantations," Soil Science Society of America, Phoenix, Arizona. (November 6, 2016).

Holub, S. (Author & Presenter), Meehan, N. (Author), Hatten, J. A. (Author), Gallo, A. (Author), Soil Science Society of America Annual Meeting, "Organic Matter Removal and Soil

Compaction Have Unexpected Results on Subsequent Tree Growth Early in a Douglas-fir Rotation in the Oregon Cascades," Soil Science Society of America, Phoenix, Arizona. (November 6, 2016).

Gallo, A. (Author & Presenter), Hatten, J. A. (Other), OSU College of Forestry Board of Directors Meeting, "Long-term soil productivity in the Oregon Cascades," OSU CoF, Corvallis, Oregon. (October 24, 2016).

Frey, D. (Author & Presenter), Hatten, J. A. (Author), Stokely, T. (Author), Betts, M. G. (Author), Ecological Society of America Annual Meeting, "Effects of the interplay between wildlife, plant communities, decomposition, and soils on productivity in intensively managed forest plantations," Ecological Society of America, Fort Lauderdale, Florida. (August 12, 2016).

Guerrero, F. (Author & Presenter), Penaranda, V. (Author), Hatten, J. A. (Author), Society for Freshwater Science Annual Meeting, "Information theory and the assessment of hydrological change in freshwater ecosystems," Society for Freshwater Science, Sacramento, California. (May 21, 2016).

Guerrero, F. (Author & Presenter), Hatten, J. A. (Author), H. J. Andrews Experimental Forest Long-Term Ecological Research (LTER) 2016 Symposium: "Stories Only Time Can Tell", "Decoding watershed history from environmental records," HJA LTER, Corvallis, Oregon. (May 13, 2016).

Matoszuik, L. (Author & Presenter), Hatten, J. A. (Author), Western Forestry Graduate Research Symposium, "Black carbon content in a ponderosa pine forest of eastern Oregon with varying seasons and intervals of prescribed burns," OSU CoF, Corvallis, Oregon. (April 22, 2016).

Frey, D. (Author & Presenter), Hatten, J. A. (Author), Western Forestry Graduate Research Symposium, "Top down effects of wildlife and bottom-up drivers of soils and productivity in intensively managed forest plantations," OSU CoF, Corvallis, Oregon. (April 22, 2016).

Hatten, J. A. (Author & Presenter), Mack, J. (Author), Roberts, S. (Author), Sucre, E. (Author), Holub, S. (Author), Gallo, A. (Author), Wood Science and Engineering Wood Lunch, "Assessing "Long-Term" Soil Productivity and Soil Carbon in Intensively Managed Forests," CoF WSE, Corvallis, Oregon. (March 8, 2016).

Media Contributions

Magazine

Focus: The magazine of OSU College of Forestry. (September 1, 2016).
Amanda Allen-Kahl (Undergraduate Researcher) featured in Focus in a piece titled "Amanda Allen-Kahl: digging into undergraduate research"

OTHER ACTIVITIES AND ACCOMPLISHMENTS

Development Activities Attended

Workshop, "Working with Foundations," OSU Foundations, Corvallis, OR, United States. (October 19, 2016 - Present).

Workshop, "Grant Writers Workshop, Grant Writers' Seminars and Workshops, LLC," College of Forestry, Corvallis, OR, United States. (September 29, 2016 - Present).

