

RECENT RESEARCH

ON COLLEGE OF FORESTRY RESEARCH & DEMONSTRATION FORESTS

Below are examples of recent undergraduate honor theses, master's theses and professional papers, Ph.D. dissertations, and journal articles resulting from research on the College of Forestry Research and Demonstration Forests, published 2017-2023. This list is not comprehensive.

Bennett, M., Shaw, D.C., and Lowrey, L. 2023. Recent Douglas-fir Mortality in the Klamath Mountains Ecoregion of Oregon: Evidence for a Decline Spiral. *Journal of Forestry*.

<https://doi.org/10.1093/jofore/fvad007>

Elfstrom, L.M.A., and Powers, M.D. In Press. Effects of Thinning on Tradeoffs Between Drought Resistance, Drought Resilience, and Wood Production in mature Douglas-fir in Western Oregon, USA. *Canadian Journal of Forest Research*. DOI:10.1139/cjfr-2022-0235.

Brune, M.A. 2022. An analysis on the population genetic structure of *Ariolimax columbianus* around Corvallis, Oregon. Honors College Thesis, OSU.

https://ir.library.oregonstate.edu/concern/honors_college_theses/9p290j038

Burk, E. 2022. Simulator-based training for logging equipment operators. M.S. Thesis, Northern Arizona University.

Clements, N. 2022. Fifty years of change in a Pacific Northwest winter forest bird community. Honors College Thesis, OSU. https://ir.library.oregonstate.edu/concern/honors_college_theses/kw52jh575

Elfstrom, M. 2022. Effects of thinning on tradeoffs between drought resistance, drought resilience, and wood production in mature Douglas-fir in Western Oregon. M.S. Thesis, OSU.

https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/qn59qb56b

Howe, K. 2022. Assessing Drought Effects in the OSU McDonald Research Forest in Corvallis, Oregon: How does Basal Area Increment (BAI) relate to Vapor Pressure Deficit (VPD) in Douglas-fir (*Pseudotsuga menziesii*) Following a Drought Event? M.F. Professional Project Paper, OSU.

Kant, M. 2022. Signals of Hotter Drought Stress in Douglas-fir Tree Rings of the Anthropocene. M.S. Thesis. OSU.

Kooistra, C., Munanura, I., and Brown, R. 2022. Comparing support for dog regulations among adjacent households and other visitors at a multiple-use recreation area. *Journal of Outdoor Recreation, Education, and Leadership*, JOREL-2022-11032. <https://doi.org/10.18666/JOREL-2022-11032>

Morgan, C.J., Powers, M. and Strimbu, B.M. 2022. Estimating tree defects with point clouds developed from active and passive sensors. *Remote Sensing*. 14: 1938. <https://doi.org/10.3390/rs14081938>

Ochoa, C.G., Jarvis, W.T., and Hall, J. 2022. A hydrogeologic framework for understanding surface water and groundwater interactions in a watershed system in the Willamette Basin in Western Oregon, USA. *Geosciences* 12: 109. <https://doi.org/10.3390/geosciences12030109>

Ross, A.H., and Blunck, D.L. 2022. The Influence of Particle Size in Influencing Smoldering Behavior Through Porous Woody Fuel Beds. *Combustion Science and Technology*. <https://doi.org/10.1080/00102202.2022.2114351>

Azeez A., Zhao Y., Singh R., Yordanov Y, Dash M., Miskolczi P., Stojkovič K., Strauss S.H., Bhalerao, R., Busov, V. 2021. Early Bud-Break 1 and Early Bud-Break 3 control resumption of poplar growth after winter dormancy. *Nature Communications*. <https://www.nature.com/articles/s41467-021-21449-0>

Cargill, S.K., Segura, C., Villamizar, S.R., and Warren, D.R. 2021. The influence of lithology on stream metabolism in headwater systems. *Ecohydrology* 14: e2284. <https://doi.org/10.1002/eco.2284>

Coyle, C.M., and Gannon, D.G. 2021. Observations of orange-crowned warblers in vine maple. *Northwestern Naturalist* 102: 94-95. <https://doi.org/10.1898/1051-1733-102.1.94>

Cronn, R.C., Finch, K.N., Hauck, L., Parker-Forney, M., Milligan, B.G., Dowling, J., and Adventure Scientists. *Forensic Science International: Animals and Environments* 1 (2021) 100033. <https://doi.org/10.1016/j.fsiae.2021.100033>

Garms, C.G., and Strimbu, B.M. 2021. Impact of stem lean on estimation of Douglas-fir (*Pseudotsuga menziesii*) diameter and volume using mobile LiDAR scans. *Canadian Journal of Forest Research* 51: 1117-1130. <https://doi.org/10.1139/cjfr-2020-0484>

Goralogia, G.S., Howe, G.T., Brunner, A.M., Helliwell, E., Nagle, M., Ma, C., Goddard, A., Magnuson, A., Klocko, A., Lu, H., et al.. 2021. Overexpression of Short Vegetative Phase-Like (SVL) in *Populus* delays onset and reduces abundance of flowering in field-grown trees. *Horticulture Research*, 8:167. <https://doi.org/10.1038/s41438-021-00600-4>

Heaston, E.D., Segura, C., and Warren, D.R. 2021. Do electrofishing activities disrupt stream biofilm standing stocks? An assessment from two headwater streams in Western Oregon. *North American Journal of Fisheries Management* 41: 466-473. <https://doi-org.oregonstate.idm.oclc.org/10.1002/nafm.10549>

Kim, H. 2021. An examination of climate and land-use change as drivers of population dynamics in breeding birds. Ph.D. Dissertation, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/mp48sm758

Klocko, A., Goddard, A., Jacobson, J.R., Magnuson, A., Strauss, S.H. 2021. RNAi Suppression of LEAFY Gives Stable Floral Sterility, and Reduced Growth Rate and Leaf Size, in Field-Grown Poplars. *Plants*, 10(8):1594. <https://doi.org/10.3390/plants10081594>

Kruse, C. 2021. Communities in flux: The influence of hydroperiod on aquatic invertebrate communities in temporary ponds. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/47429j08c

Morgan, C. 2021. Estimating Tree Defect and Log Quality with Terrestrial Structure from Motion Photogrammetry and Handheld LiDAR. M.S. Thesis, OSU.

Rivers, J.W., and Betts, M.G. 2021. Postharvest bee diversity is high but declines rapidly with stand age in regenerating Douglas-fir forest. *Forest Science* 67: 275-285. <https://doi.org/10.1093/forsci/xfab002>

Rodriguez, J.T., Lesmeister, D.B., and Levi, T. 2021. Mesocarnivore landscape use along a gradient of urban, rural, and forest cover. *PeerJ* 9: e11083. <https://doi.org/10.7717/peerj.11083>

Ross, A.H. 2021. The influence of fuel characteristics on smoldering behavior through porous fuels. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/xs55mm155

Sherman, L., and Hagar, J. 2021. The snag's the limit: Habitat selection modeling for the western purple martin in a managed forest landscape. *Forest Ecology and Management* 480: 118689. <https://doi.org/10.1016/j.foreco.2020.118689>

Williams, N.G., Hagar, J.C., and Powers, M.D. 2021. Evaluating the role of active management in mature Douglas-fir (*Pseudotsuga menziesii*) stands for songbird conservation. *Forest Ecology and Management* 502: 119609. <https://doi.org/10.1016/j.foreco.2021.119609>

Begay, B.E. 2020. Assessment of the impact of forest management activities on forest aesthetics using photogrammetric point clouds. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/s1784t32m

Davila-Santiago, E. 2020. Opening Pandora's Box: Machine learning applications for chemical forensics and nontarget chemical analyses. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/x346dc185

Dormontt, E.E., Jardine, D.I., van Dijk, K.-J., Dunker, B.F., Dixon, R.R.M., Hipkins, V.D., Tobe, S., Linacre, A., and Lowe, A.J. 2020. *Forensic Science International: Genetics* 46 (2020)102252. <https://doi.org/10.1016/j.fsigen.2020.102252>

Elorriaga, E. 2020. Functional Characterization and Classification of Genes Essential to Flower Induction, Flower Development, and Seed Development in *Populus* and *Eucalyptus*. *Molecular and Cellular Biology*. Ph.D. Dissertation. OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/qb98mn463

Falke, L.P., Henderson, J.S., Novak, M., and Preston, D.L. 2020. Temporal shifts in intraspecific and interspecific diet variation among 3 stream predators. *Freshwater Science* 39: 115-125.
<https://doi-org.oregonstate.idm.oclc.org/10.1086/707599>

Fisher, D.M. 2020. Geocaching: Perceptions of impacts and identity. Ph.D. Dissertation.
https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/05741z911

Garms, C. 2020. Using point clouds for single tree forest inventory at the beginning and end of the rotation. Ph.D. Dissertation, OSU.
https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/6q182s91d

Glass, H.C. 2020. Chemical ecology and genetics of rough-skinned newts, *Taricha granulosa*. Ph.D. Dissertation, University of Calgary, Calgary, AB. <http://hdl.handle.net/1880/112113>

Gorski, J. 2020. Professional Paper for Ramsdell Forest Management Plan Riparian Area. M.F. Professional Project Paper, OSU.

Hall, J. 2020. A hydrogeologic framework for understanding watershed-scale surface water and groundwater interactions in Western Oregon, USA. M.S. Thesis, OSU.
https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/fx719t93p

Johnson, K. 2020. Land use impacts on water quality in Oak Creek watershed. Honors College Thesis, OSU. https://ir.library.oregonstate.edu/concern/honors_college_theses/7s75dk188

Klocko A., Brunner A.M., Ma C., Etherington E., Rosenstiel K., Magnuson A., Taylor B.J., Cappellazzi J., Lockwood T., Covarrubias N. et al.. 2020. RNAi of AGAMOUS genes in sweetgum alters reproductive organ identity and decreases fruit persistence. *Plant Direct*. DOI:10.1002/pld3.225

Lu H., Gordon M.I., Amarasinghe V., Strauss S.H. 2020. Extensive transcriptome changes during seasonal leaf senescence in field-grown black cottonwood (*Populus trichocarpa Nisqually-1*). *Scientific Reports*. 10:6581. DOI:10.1038/s41598-020-63372-2

Monsalve, A., Segura, C., Hucke, N., and Katz, S. 2020. A bed load transport equation based on the spatial distribution of shear stress – Oak Creek revisited. *Earth Surface Dynamics* 8: 825–839.
<https://doi.org/10.5194/esurf-8-825-2020>

Monson, R.K., Winkler, B., Rosenstiel, T., Block, K., Merl-Pham, J., Strauss, S.H., Ault, K., Maxfield, J., Moore, D.J.P., Trahan, N.A. et al.. 2020. High productivity in hybrid-poplar plantations without isoprene emission to the atmosphere. *Proceedings of National Academy of Sciences*. (main planting at Peavy Arboretum). DOI:10.1073/pnas.1912327117

Preston, D.L., Layden, T.J., Segui, L.M., Falke, L.P., Brant, S.V., and Novak, M. 2020. Trematode parasites exceed aquatic insect biomass in Oregon stream food webs. *Journal of Animal Ecology* 90: 766-775.
<https://doi-org.oregonstate.idm.oclc.org/10.1111/1365-2656.13409>

- Qi, C. 2020. Individual tree detection and measurement from terrestrial point cloud. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/8w32rc97t
- Waddle, J., Hardin, D.A., Grear, B.A., Mosher, E.H., Campbell G., Adams, M.J., Backlin, A.R., Barichivich, W.J. et al.. 2020. *Batrachochytrium salamandrivorans* (Bsal) Not Detected in an Intensive Survey of Wild North American Amphibians. Scientific Reports 10, no. 1 (December 2020): 13012. <https://doi.org/10.1038/s41598-020-69486-x>
- Cargill, S. A. 2019. The influence of lithology on stream metabolism in mountain systems. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/5712md14z
- Cruzan, M.B. 2019. How to Make a Weed–The saga of the slender false brome invasion in the North American West and lessons for the future. BioScience 69:496-507. <https://doi.org/10.1093/biosci/biz051>
- Green, P.Q. 2019. Insight into the productivity, cost and soil impacts of cable-assisted harvester-forwarder thinning in Western Oregon. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/zk51vn91g
- Green, P.Q., Chung, W., Leshchinsky, B., Belart, F., Sessions, J., Fitzgerald, S.A., Wimer, J.A., Cushing, T., and Garland, J.J. 2019. Insight into the productivity, cost and soil impacts of cable-assisted harvester-forwarder thinning in Western Oregon. Forest Science 66: 82-96. <https://doi.org/10.1093/forsci/fxz049>
- Klee, A. 2019. Determinants of willingness to pay for forest recreation based on payment type using contingent valuation: A practical application for forest managers. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/5138jm64p
- Marchini, G.L., Maraist, C.A., and Cruzan, M.B. 2019. Functional trait divergence, not plasticity, determines the success of a newly invasive plant. Annals of Botany 123: 667-679. <https://doi.org/10.1093/aob/mcy200>
- Nguyen, T.T.H. 2019. Diversity and activity of microbial extracellular peptidases in soil. Ph.D. Dissertation. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/kh04dv860
- Preston, D.L., Falke, L.P., Henderson, J.S., and Noval, M. 2019. Food-web interaction strength distributions are conserved by greater variation between than within predator–prey pairs. Ecology 100: e02816. <https://doi.org.oregonstate.idm.oclc.org/10.1002/ecy.2816>
- Segui, L.M. 2019. State-structured species interactions and their consequences across levels of biological organization. Ph.D. Dissertation, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/9g54xq08j
- Sherman, L.M. 2019. Habitat associations and diet composition of western purple martins in Western Oregon. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/nk322k717

- Stanton, A.H. 2019. The production of dissolved organic carbon (DOC) over time with change in substrate type, temperature, and mineral soil inclusion. Honors College Thesis, OSU.
https://ir.library.oregonstate.edu/concern/honors_college_theses/h989r847j
- Uffelman, S. 2019. The impact of understory vegetation on the productivity and costs of cut-to-length thinning harvest systems in the Pacific Northwest. M.S. Thesis, OSU.
https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/4f16c894s
- Tzanakakis, V.A., Taylor, A.E., Bakken, L.R., Bottomley, P.J., Myrold, D.D., and Dörsch, P. 2019. Relative activity of ammonia oxidizing archaea and bacteria determine nitrification-dependent N₂O emissions in Oregon forest soils. *Soil Biology and Biochemistry* 139: 107612.
<https://doi.org/10.1016/j.soilbio.2019.107612>
- Walters, C.A. 2019. Effective signage to manage recreation at OSU's Research Forests. Honors College Thesis, OSU. https://ir.library.oregonstate.edu/concern/honors_college_theses/q524jv25m
- Williams, N.G. 2019. Evaluating multi-objective trade-offs in mature Douglas-fir (*Pseudotsuga menziesii*) stands of Western Oregon. Ph.D. Dissertation, OSU.
https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/8623j452n
- Williams, N.G., and Powers, M.D. 2019. Carbon storage implications of active management in mature *Pseudotsuga menziesii* forests of Western Oregon. *Forest Ecology and Management* 432: 761-775.
<https://doi.org/10.1016/j.foreco.2018.10.002>
- Arnold, M.L. 2018. Political Ideology and Environmental Concern as Predictors of Attitudes toward Forest Management Practices in the Pacific Northwest. M.S. Thesis, OSU.
https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/jw827j149
- Barry, A.M., Hagar, J.C., and Rivers, J.W. 2018. Use of created snags by cavity-nesting birds across 25 years. *Journal of Wildlife Management* 82(7):1376–1384. DOI:10.1002/jwmg.21489
- Belart, F., Sessions, J., and Murphy, G. 2018. Seasonal changes in live tree branch moisture in Oregon, USA: Four Case Studies. *Forest Science* 65(1):100–107. DOI:10.1093/forsci/fxy038
- Chavan, P.R. 2018. Assessment of decentralized wastewater treatment system potential impact on water quality. M.S. Thesis, OSU.
https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/js956n338
- Davis, K.T., Dobrowski, S.Z, Holden, Z.A., Higuera, P.E., and Abatzoglou, J.T. 2018. Microclimatic buffering in forests of the future: the role of local water balance. *Ecography* 41: 1-11.
<https://doi.org/10.1111/ecog.03836>
- Elorriaga, E., Klocko, A., Ma, C., Strauss, S.H. 2018. Variation in mutation spectra among CRISPR/Cas9 mutagenized poplars. *Frontiers in Plant Science*, (9): 594. <https://doi.org/10.3389/fpls.2018.00594>

Gunsolus, A. 2018. Group selection silviculture in western Douglas-fir forests: A Case Study. M.F. Professional Project Paper, OSU.

Katz, S.B., Segura, C., and Warren, D.R. 2018. The influence of channel bed disturbance on benthic Chlorophyll a: A high resolution perspective. *Geomorphology* 305: 141-153.
<https://doi.org/10.1016/j.geomorph.2017.11.010>

Klocko, A.L, Lu, H., Magnuson, A., Brunner, A.M., Ma, C., and Strauss, S.H. 2018. Phenotypic expression and stability in a large-scale field study of genetically engineered poplars containing sexual containment transgenes. *Frontiers in Bioengineering and Biotechnology*. 6:100. DOI:10.3389/fbioe.2018.00100.

Kooistra, C., and Munanura, I. 2018. OSU Research Forests Recreation Survey Report.
<https://cf.forestry.oregonstate.edu/recreation/recreation-management>

Lu, H., Klocko, A., Brunner, A.M., Ma, C., Magnuson, A., Howe, G.T., An, X., Strauss, S.H. 2018. RNA interference suppression of *Agamous* and *Seedstick* alters floral organ identity and impairs floral organ determinacy, ovule differentiation, and seed-hair development in *Populus*. *New Phytologist*. DOI:10.1111/nph.15648

Preston, D.L., Henderson, J.S., Falke, L.P. Segui, L.M., Layden, T.J., and Noval, M. 2018. What drives interaction strengths in complex food webs? A test with feeding rates of a generalist stream predator. *Ecology* 99: 1591-1601. <https://doi-rg.oregonstate.idm.oclc.org/10.1002/ecy.2387>

Punches, J.W. and Puettmann, K.J. 2018. Distribution of epicormic branches and foliage on Douglas-fir as influenced by adjacent canopy gaps. *Canadian Journal of Forest Research* 48: 1320-1330.
<https://doi-org.oregonstate.idm.oclc.org/10.1139/cjfr-2018-007>

Wheeler, S. 2018. Transitioning from shelterwood to uneven-aged silviculture in Western Douglas-fir forests: A case study using single-tree selection. M.F. Professional Paper, OSU.

Barry, A.M. 2017. Created snag dynamics and influence on cavity-nesting bird communities over 25 years in Western Oregon. M.S. Thesis, OSU.
https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/c821gn068

Barry, A.M., Hagar, J.C., and Rivers, J.W. 2017. Long-term dynamics and characteristics of snags created for wildlife habitat. *Forest Ecology and Management* 403: 145-151.
<https://doi.org/10.1016/j.foreco.2017.07.049>

Belart, F., Leshchinsky, B., and Sessions, J. 2017. Finite element analysis to predict in-forest stored harvest residue moisture content. *Forest Science*, Volume 63, Issue 4: 362-376.
<https://doi.org/10.5849/FS-2016-064R1>

Belart, F., Sessions, J., Leshchinsky, B., and Murphy, G. 2017. Economic implications of moisture content and logging system in forest harvest residue delivery for energy production: a case study. *Canadian Journal of Forest Research* 47: 458-466. <https://dx.doi.org/10.1139/cjfr-2016-0428>

- Gabriel, R.S. 2017. The use of terrestrial laser scanning and computer vision in tree level modeling. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/qv33s274b
- Heaston, E. 2017. Aquatic Food Web Responses to Patchy Shading Along Forested Headwater Streams. M.S. Thesis, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/bk128g72d
- Kramer, O. 2017. Distribution of *Chlorociboria* species in riparian forests of Western Oregon. Honors College Thesis, OSU. https://ir.library.oregonstate.edu/concern/honors_college_theses/zs25xb32f
- Priebe, J. E.S, Powers, M.D., and Cole, E.C. 2017. Species, tree size, and overstory environment affect likelihood of ice storm damage to understorey trees in a mature Douglas-fir forest. *Forest Ecology and Management* 409 (2018) 777–788. <https://doi.org/10.1016/j.foreco.2017.11.041>
- Punches, J.W. 2017. Contributions of epicormic branches and delayed adaptive foliage in coastal Douglas-fir under variable density management regimes. Ph.D. Dissertation, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/jq085r01s
- Strauss, S.H., Jones, K.N., Lu, H., Petit, J.D., Klocko, A., Betts, M.G., Brosi, B.J., Fletcher, R.J., and Needham, M.D. 2017. Reproductive modification in forest plantations: impacts on biodiversity and society. *New Phytologist*. 213:1000-1021. DOI:10.1111/nph.14374.
- Torres-Andrade, P.A. 2017. Characterization of fungal communities in selected wood species by field exposure tests. Ph.D. Dissertation, OSU. https://ir.library.oregonstate.edu/concern/graduate_thesis_or_dissertations/pz50h2004

