

PhD dissertations

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Forest, Global Change and Bioeconomy Research Area

PhD dissertations 2018

ALRahahleh, L. Scenario analyses on the effects of forest management and CMIP5 climate projections on timber production and carbon stocks of upland boreal forests in Finland. *Dissertationes Forestales* 264. (Supervisor: Peltola Heli). School of Forest Sciences, University of Eastern Finland.

Baul, T.K. Climate impacts of carbon sequestration of forests and material substitution by energy biomass and harvested wood products under boreal conditions. *Dissertationes Forestales* 255. (Supervisor: Kilpeläinen Antti). School of Forest Sciences, University of Eastern Finland.

Cugunovs, M. Impacts of fire in active and passive restorations on boreal forest soils and vegetation. *Dissertationes Forestales* 259. (Supervisors: Kouki Jari, Tuittila Eeva-Stiina). School of Forest Sciences, University of Eastern Finland.

Díaz-Yáñez, O. Integrating the risk of natural disturbances into forest management in Norway. *Dissertationes Forestales* 258. (Supervisors: Mola Blas, Pukkala Timo). School of Forest Sciences, University of Eastern Finland.

Khaling, E. The effects of elevated ozone and herbivore-feeding stress on defence chemistry and signalling to higher trophic levels in *Brassica nigra*. *Dissertationes in Forestry and Natural Sciences* 323. (Supervisor: Blande James D.). Department of Biology, University of Eastern Finland.

Lappalainen, M. Dynamics of dissolved carbon and nitrogen in decomposing boreal mor and peat as affected by enchytraeid worms. *Dissertationes Forestales* 262. (Supervisors: Laurén Ari, Kukkonen Jussi, Palviainen Marjo). School of Forest Sciences, University of Eastern Finland.

Muinonen, E. Optical data-driven multi-source forest inventory setups for boreal and tropical forests. *Dissertationes Forestales* 256. (Supervisors: Maltamo Matti, Eerikäinen Kalle). School of Forest Sciences, University of Eastern Finland.

Pascual Arranz, A. Improving forest management planning by means of airborne laser scanning and dynamic treatment units based on spatial optimization. *Dissertationes Forestales* 257. (Supervisors: Pukkala Timo, de Miguel Sergio). School of Forest Sciences, University of Eastern Finland.

Rodríguez, A. Promoting biodiversity and ecosystem services in managed boreal forests through disturbance-mediated functional heterogeneity. *Dissertationes Forestales* 266. (Supervisor: Kouki Jari). School of Forest Sciences, University of Eastern Finland.

Sivadasan, U. Climate change effects on growth and metabolism of the dioecious *Salix myrsinifolia* and *Populus tremula*. *Dissertationes in Forestry and Natural Sciences* 303. (Supervisor: Julkunen-Tiitto Riitta, Nybakken Line, Randriamanana Tendry, Mehtätalo Lauri). Department of Environmental and Biological Science, University of Eastern Finland.

Tikkinen, M. Improved propagation efficiency in a laboratory-nursery interface for somatic embryogenesis in Norway spruce. *Dissertationes Forestales* 265. (Supervisors: Aronen Tuija, Varis Salla, Peltola Heli). School of Forest Sciences, University of Eastern Finland.

Zhang, Y. Growth and phenolics of two boreal forest tree species: effects of climate change and soil contamination on *Picea abies* L. Karsten and *Populus tremula* L. *Dissertationes in Forestry and Natural*

Sciences 332. (Supervisor: Julkunen-Tiitto Riitta, Guo Hongyan, Nybakken Line, Virjamo Virpi). Department of Environmental and Biological Science, University of Eastern Finland.

PhD dissertations 2017

Haakana, H. 2017 Multi-source forest inventory data for forest production and utilization analyses at different levels. *Dissertationes Forestales* 243. (Supervisors: Matti Maltamo, Tuula Packalen, Kari T. Korhonen). School of Forest Sciences, University of Eastern Finland.

Jia, X. Dynamics and biophysical control of carbon, water and energy exchange over a semiarid shrubland in northern China. *Dissertationes Forestales* 238. (Supervisors: Peltola Heli, Zha Tianshan, Gong Jinnan) School of Forest Sciences, University of Eastern Finland.

Korrensalo, A. Behind the stability of boreal bog carbon sink: Compositional and functional variation of vegetation across temporal and spatial scales. *Dissertationes Forestales* 240. (Supervisors: Tuittila Eeva-Stiina, Mehtätalo Lauri) School of Forest Sciences, University of Eastern Finland.

Nissinen, K. Does sex or growth form matter? A study of *Populus tremula* L., *Salix myrsinifolia* Salisb. and *Salix repens* L. facing ontogenetic and climatic changes. (Supervisor: Julkunen-Tiitto Riitta, Line Nybakken, Egbert Beuker, Virpi Virjamo) Department of Environmental and Biological Sciences, University of Eastern Finland.

Räsänen, J. The role of northern tree species in capture of atmospheric fine particles. *Dissertationes in Forestry and Natural Sciences*. (Supervisor: Holopainen Jarmo) University of Eastern Finland.

Silvennoinen, H. Metsämaiseman kauneus ja metsänhoidon vaikutus koettuun maisemaan metsikkötasolla. *Dissertationes Forestales* 242. (Supervisors: Pukkala Timo, Tyrväinen Liisa) School of Forest Sciences, University of Eastern Finland.

Wang, B. Responses of temporal and spatial variation in soil respiration to biotic and abiotic factors in a desert shrubland in northwest China. *Dissertationes Forestales* 236. (Supervisors: Peltola Heli, Zha Tianshan, Gong Jinnan) School of Forest Sciences, University of Eastern Finland.

PhD dissertations 2016

Ghimire, R.P. 2016. Effects of herbivory and climate change factors on BVOC emissions from boreal conifers. *Publications of the University of Eastern Finland. Dissertations in Forestry and Natural Sciences* 236, University of Eastern Finland.

Giron, C.P.S. 2016. Volatile-mediated plant-to-plant interactions and the effects of an ozone polluted environment. *Publications of the University of Eastern Finland. Dissertations in Forestry and Natural Sciences* 250, University of Eastern Finland.

Heikkala, O. 2016. Emulation of natural disturbances and the maintenance of biodiversity in managed boreal forests: The effects of prescribed fire and retention forestry on insect assemblages. School of Forest Sciences, University of Eastern Finland.

Hämäläinen, A. 2016. Retention forestry and intensified biomass harvest: epiphytic lichen assemblages under opposing ecological effects in pine-dominated boreal forests. *Dissertationes Forestales* 218. University of Eastern Finland.

Kosonen, M. 2016. Changes in proanthocyanidin pathway affect other phenolics and growth of aspen and birch. *Dissertations in Forestry and Natural Sciences* 242 (Supervisors: Riitta Julkunen Tiitto, Sari Kontula-Soppela). Department of Environmental and Biological Sciences, University of Eastern Finland.

Kunttu, P. 2016. Dead-wood-associated aphylophroid fungi: perspectives on the diversity, ecology and conservation biology of species and their habitats. Finnish Society of Forest Science Natural Resources Institute Finland, Faculty of Agriculture and Forestry at the University of Helsinki, School of Forest Sciences, University of Eastern Finland.

Lihavainen, J. 2016. Trees facing high humidity. Effects on growth, mineral nutrition and foliar metabolites in birch and aspen. Dissertations in Forestry and Natural Sciences 234. (Supervisors: Oksanen Elina, Keinänen Markku, Keski-Saari Sarita). Department of Environmental and Biological Sciences, University of Eastern Finland.

Melin, M. 2016. Integration of airborne laser scanning and GPS-tracking give new information about habitat use and behavior of moose (*Alces alces*). (Supervisors: Packalen Petteri, Lauri Mehtätalo, Juho Matala). School of Forest Sciences, University of Eastern Finland.

Rana, M.P. 2016. Selection of training areas for remote sensing-based forest above-ground biomass estimation (Supervisor: Timo Tokola). School of Forest Sciences, University of Eastern Finland.

Valbuena, R. 2016. Forest structure indicators based on tree size inequality and their relations with airborne laser scanning. (Supervisors: Maltamo Matti, Packalen Petteri). School of Forest Sciences, University of Eastern Finland.

Venugopal, P. 2016. Effects of climate, wood quality and fungal diversity on coarse wood decomposition of Scots pine. School of Forest Sciences, University of Eastern Finland.

PhD dissertations 2015

Delgado, M.C. Optimal management of the Umbundu traditional land use system in the central highlands region of Angola. Dissertations Forestales 178. (Supervisor: Pukkala Timo). School of Forest Sciences, University of Eastern Finland.

Heimonen, K. Plant-insect interactions on silver birch under a warming climate – A latitudinal translocation experiment (Supervisors: Roininen Heikki, Kontunen-Soppela Sari, Keski-Saari Sarita). Department of Biology, University of Eastern Finland.

Hou, Z. Growing stock mapping and stand delineation for tropical forests using remote sensing. Dissertations Forestales 184. (Supervisors: Tokola Timo, Packalen Tuula). School of Forest Sciences, University of Eastern Finland.

Maja, M.M. Volatile organic compounds emitted from silver birch and European aspen in response to environmental stresses (Supervisors: Holopainen Jarmo, Holopainen Toini, Kasurinen Anne). Department of Biology, University of Eastern Finland.

Pandey, A. Responses of mustard (*Brassica campestris*) and rice (*Oryza sativa*) cultivars to tropospheric ozone in India. (Supervisors: Oksanen Elina, Kontunen-Soppela Sari). Department of Biology, University of Eastern Finland.

Pant, P. 2015. Optimizing Spectral Bands of Airborne Imager for Tree Species Classification. Dissertations of the University of Eastern Finland, Publications of the Forestry and Natural Sciences 177. (Supervisors: Heikkinen Ville, Tokola Timo, Hauta-Kasari Markku). School of Computing, University of Eastern Finland.

Pippuri, I. Airborne laser scanning based forest inventory for forest management by applying novel metrics and multiple data sources. Dissertations Forestales 193. (Supervisors: Maltamo Matti, Packalen Petteri, Peltola Heli). School of Forest Sciences, University of Eastern Finland.

Takala, T. Bryophytes in semi-natural rural biotopes. (Supervisors: Tahvanainen Teemu, Kouki Jari). Department of Biology, University of Eastern Finland.

Torssonen, P. Potentials of forest biomass production and utilization for mitigation of climate change in boreal conditions. *Dissertationes Forestales* 192. (Supervisors: Peltola Heli, Kilpeläinen Antti, Asikainen Antti, Kellomäki Seppo). School of Forest Sciences, University of Eastern Finland.

Turtiainen, M. Modelling bilberry and cowberry yields in Finland: different approaches to develop models for forest planning calculations. *Dissertationes Forestales* 185. (Supervisors: Pukkala Timo, Saastamoinen Olli). School of Forest Sciences, University of Eastern Finland.

Verkerk, P.J. Assessing impacts of intensified biomass removal and biodiversity protection on European forests. *Dissertationes Forestales* 197. (Supervisors: Pukkala Timo, Lindner Marcus). School of Forest Sciences, University of Eastern Finland.

Vilén, T. Effects of changes in land-use, age-structure and management on carbon dynamics of European forests. *Dissertationes Forestales* 188. (Supervisors: Lindner Marcus, Peltola Heli, Karjalainen Timo). School of Forest Sciences, University of Eastern Finland.