Julkaisut vuonna 2016 – Publications in 2016

Väitöskirjat/Doctoral dissertations

Hincke, A.J.C. 2016: Inter-hemispheric comparision of CO_2 signals in leaf cuticle morphology. – Doc. thesis, Utrecht Studies in Earth Sciences No. 119, 119 pp.

Muut julkaisut/Other publications

Böttcher, K., Markkanen, T., Thum, T., Aalto, T., Aurela, M., Reick, C.H., Kolari, P., Arslan, A.N. & Pulliainen, J. 2016: Evaluating biosphere model estimates of the start of the vegetation active season in boreal forests by satellite observations. – Remote Sensing 8(7): 580. doi: 10.3390/rs8070580

Dirihan, S., Helander, M., Väre, H., Gundel, P.E., Garibaldi, L.A., Irisarri, J., Gonzalo, N., Saloniemi, I. & Saikkonen, K. 2016: Geographic variation in Festuca rubra L. ploidy levels and systemic fungal endophyte frequencies. – PLoS ONE 11(11): e0166264. doi: 10.1371/journal.pone.0166264

Fält-Nardmann, J., Klemola, T. Roth, M., Ruohomäki, K. & Saikkonen, K. 2016: Northern geometrid forest pests (Lepidoptera: Geometridae) hatch at lower temperatures than their southern conspecifics: Implications of climate change. – European Journal of Entomology 113: 337-343. doi: 10.14411/eje.2016.043

He, X., He, S.H & Hyvönen, J. 2016: Will bryophytes survive in a warming world? – Perspectives in Plant Ecology, Evolution and Systematics 19: 49-60. doi: 10.1016/j.ppees.2016.02.005

Kahar, S., Debes, P.V., Vuori, K.A.M., Vähä, J.-P**.** & Vasemägi, A. 2016: Heritability, environmental effects, and genetic and phenotypic correlations of oxidative stress resistance-related enzyme activities during early life stages in Atlantic salmon. – Evolutionary Biology 43(2): 215-226. doi: 10.1007/s11692-016-9368-5

Kjærner-Semb, E., Ayllon, F., Furmanek, T., Wennevik, V., Dahle, G., Niemelä, E., Ozerov, M., Vähä, J.-P., Glover, K.A., Rubin, C.J., Wargelius, A. & Edvardsen, R.B. 2016: Atlantic salmon populations reveal adaptive divergence of immune related genes – a duplicated genome under selection. – BMC Genomics 17: 610. doi: 10.1186/s12864-016-2867-z

Klemola, T., Andersson, T. & Ruohomäki, K. 2016: No regulatory role for adult predation in cyclic population dynamics of the autumnal moth, Epirrita autumnata. – Ecological Entomology 41(5): 582-589. doi: 10.1111/een.12329

Luoto, T.P., Rantala, M.V., Galkin, A., Rautio, M. & Nevalainen, L. 2016: Environmental determinants of chironomid communities in remote northern lakes across the treeline – Implications for climate change assessments. – Ecological Indicators 61(2): 991-999. doi.org/10.1016/j.ecolind.2015.10.057

Ozerov, M.Y., Gross, R., Bruneaux, M., Vähä J.P., Burimski, O., Pukk, L. & Vasemägi, A. 2016: Genomewide introgressive hybridization patterns in wild Atlantic salmon influenced by inadvertent gene flow from hatchery releases. – Molecular Ecology 25(6): 1275-1293. doi: 10.1111/mec.13570

Rantala, M.V., Luoto, T.P. & Nevalainen, L. 2016: Temperature controls organic carbon sequestration in a subarctic lake. – Scientific Reports 6: 34780. doi: 10.1038/srep34780

Rantala, M.V., Nevalainen, L., Rautio, M., Galkin, A. & Luoto, T.P. 2016: Sources and controls of organic carpon in lakes across the subarctic treeline. – Biogeochemistry 129(1): 235-253. doi: 10.1007/s10533-016-0229-1

Savolainen, T., Whiter, D.K. & Partamies, N. 2016: Automatic segmentation and classification of seven-segment display digits on auroral images. – Geoscientific Instrumentation Methods and Data Systems 5(2): 305-314. doi: 10.5194/gi-5-305-2016

Sloan, V.L., Fletcher, B.J. & Phoenix, G.K. 2016: Contrasting synchrony in root and leaf phenology across multiple sub-Arctic plant communities. – Journal of Ecology 104(1): 239-248. doi: 10.1111/1365-2745.12506

Tolonen, K.E., Tokola, L., Grönroos, M., Hjort, J., Kärnä, O.-M., Erkinaro, J. & Heino, J. 2016: Hierarchical decomposition of trait patterns of macroinvertebrate communities in subarctic streams. – Freshwater Science 35(3): 1032-1048. doi: 10.1086/687966

Vuorinen, A.L., Kalpio, M., Linderborg, K.M., Hoppula, K.B., Karhu, S.T., Yang, B. & Kallio, H.P. 2016: Triacylglycerol biosynthesis in developing Ribes nigrum and Ribes rubrum seeds from gene expression to oil composition. – Food Chemistry 196: 976-987. doi: 10.1016/j.foodchem.2015.10.010

Xiaolan, H, Kate, K.S & Hyvönen, J. 2016: Will bryophytes survive in a warming world? – Perspectives in Plant Ecology, Evolution and Systematics 19: 49-60. doi.org/10.1016/j.ppees.2016.02.005

Yang, W., Laaksonen, O., Kallio, H. & Yang, B. 2016: Proanthocyanids in sea buckthorn (Hippophaë rhamnoides L.) berries of different origins with special reference to the influence of genetic background and growth location. – Journal of Agricultural and Food Chemistry 64 (6): 1274-1282. doi: 10.1021/acs.jafc.5b05718

Yli-Pirilä, P., Copolovici, L., Kännaste, A., Noe, S., Blandel, J.D., Mikkonen, S., Klemola, T., Pulkkinen, J., Virtanen, A., Laaksonen, A., Joutsensaari, J., Niinemets, Ü. & Holopainen, J.K. 2016: Herbivory by an outbreaking moth increases emissions of biogenic volatiles and leads to enhanced secondary organic aerosol formation capacity. – Environmental Science & Technology 50(21): 11501-11510. doi: 10.1021/acs.est.6b02800

Julkaisut vuonna 2017 – Publications in 2017

Muut julkaisut/Other publications

Barrio, I.C., Lindén, E., Te Beest, M., Olofsson, J., Rocha, A., Soininen, E.M., Alatalo, J.M., Andersson, T., Asmus, A., Boike, J., Bråthen, K.A., Bryant, J.P., Buchwal, A., Bueno, C.G., Christie, K.S., Denisova, Y.V., Egeélkraut, D., Ehrich, D., Fishback, L., Forbes, B.C., Gartzia, M., Grogan, P., Hallinger, M., Heijmans, M.M.P.D., Hik, D.S., Hofgaard, A., Holmgren, M., Høye, T.T., Huebner, D.C., Jónsdóttir, I.S., Kaarlejärvi, E., Kumpula, T., Lange, C.Y.M.J.G., Lange, J., Lévesque, E., Limpens, J., Macias-Fauria, M., Myers-Smith, I., van Nieukerken, E.J., Normand, S., Post, E.S., Schmidt, N.M., Sitters, J., Skoracka, A., Sokolov, A., Sokolova, N., Speed, J.M.D.,Street, L.E., Sundqvist, M.K., Suominen, O., Tananaev, N., Tremblay, J.-P., Urbanowicz, C., Uvarov, S.A., Watts, D., Wilmking, M., Wookey, P.A., Zimmermann, H.H., Zverev, V. & Kozlov, M.V. 2017: Background invertebrate herbivory on dwarf birch (Betula glandulosa-nana complex) increases with temperature and precipitation across the tundra biome. – Polar Biology 40(11): 2265-2278. doi: 10.1007/s00300-017-2139-7

Franke, A.K., Bräuning, A., Timonen, M. & Rautio, P. 2017: Growth response of Scots pines in polar-alpine tree-line to a warming climate. – Forets Ecology and Management 399: 94-107. doi.org/10.1016/j.foreco.2017.05.027

Kortesniemi, M., Sinkkonen, J., Yang, B. & Kallio, H. 2017: NMR metabolomics demonstrates phenotypic plasticity of sea buckthorn (Hippophaë rhamnoides) berries with respect to growth conditions in Finland and Canada. – Food Chemistry 219: 139-147. dx.doi.org/10.1016/j.foodchem.2016.09.125

Koski, T.-M., Kalpio, M., Laaksonen, T., Sirkiä, P.M., Kallio, H.P., Yang, B., Linderborg, K.M. & Klemola, T. 2017: Effects of insect herbivory on bilberry production and removal of berries by frugivores. – Journal of Chemical Ecology 43(4): 422-432. doi: 10.1007/s10886-017-0838-8

Kämäri, M., Alho, P., Colpaert, A. & Lotsari, E. 2017: Spatial variation of river-ice thickness in a meandering river. – Cold Regions Science and Technology 137: 17-29. doi.org/10.1016/j.coldregions.2017.01.009

Lotsari, E. Kasvi, E. Kämäri, M. & Alho, P. 2017: The effects of ice cover on flow characteristics in a subarctic meandering river. – Earth Surface Processes and Landforms 42(8): 1195-1212. doi: 10.1002/esp.4089

Luoto, T.P., Kivilä, E.H., Rantala, V. & Nevalainen, L. 2017: Characterization of the Medieval Climate Anomaly, Little Ice Age and recent warming in northern Lapland. – International Journal of Climatology 37(suppl:1): 1257-1266. doi: 10.1002/joc.5081

Matias, L., Linares, J.C, Sánchez-Miranda, A. & Jump, A.S. 2017: Contrasting growth forecasts across the geographical range of Scots pine due to altitudinal and latitudinal differences in climatic sensitivity. – Global Change Biology 23(10): 4106-4116. doi: 10.1111/gcb.13627

Mäkilä, L., Laaksonen, O., Kallio, H. & Yang, B. 2017: Effect of processing technologies and storage conditions on stability of black currant juices with special focus on phenolic compounds and sensory properties. – Food Chemistry 221: 422-430. dx.doi.org/10.1016/j.foodchem.2016.10.079

Männistö, E., Holopainen, J.K., Häikiö, E. & Klemola, T. 2017: A field study with geometrid moths to test the coevolution hypothesis of red autumn colours in deciduous trees. – Entomologia Experimentalis et Applicata 165(1): 29-37. doi: 10.1111/eea.12626

Ozerov, M., Vähä, J.-P., Wennevik, V., Niemelä, E., Svenning, M.-A., Prusov, S., Diaz Fernandes, R., Unneland, L., Vasemägi, A., Falkegård, M., Kalske, T. & Christiansen, B. 2017: Comprehensive microsatellite baseline for genetic stock identification of Atlantic salmon (Salmo salar L.) in northernmost Europe. – ICES Journal of Marine Science 74(8): 2159-2169. doi.org/10.1093/icesjms/fsx041

Taulavuori, K., Taulavuori, E., Saravesi, K., Jylänki, T., Kainulainen, A., Pajala, J., Markkola, A., Suominen, O. & Saikkonen, K. 2017: Competitive success of southern populations of Betula pendula and Sorbus aucuparia under simulated southern climate experiment in the subarctic. – Ecology and Evolution 7: 4507-4517. doi: 10.1002/ece3.3026

Tolonen, K.E., Leinonen, K., Marttila, H., Erkinaro, J. & Heino, J. 2017: Environmental predictability of taxonomic and functional community in high-latitude streams. – Freshwater Biology 62: 1-16. doi: 10.1111/fwb.12832

Vähä, J.-P., Erkinaro, J., Falkegård, M., Orell, P. & Niemelä, E. 2017: Genetic stock identification of Atlantic salmon and its evaluation in a large population complex. – Canadian Journal of Fisheries and Aquatic Sciences 74(3): 327-338. doi: 10.1139/cjfas-2015-0606

Yang, W., Laaksonen, O. Kallio, H. & Yang, B. 2017: Effects of latitude and weather conditions on proanthocyanidins in berries of Finnish wild and cultivated sea buckthorn (Hippophaë rhamnoides L. ssp. rhamnoides). – Food Chemistry 216: 87-96. dx.doi.org/10.1016/j.foodchem.2016.08.032

Julkaisut vuonna 2018 – Publications in 2018

Väitöskirjat/Doctoral dissertations

Fält-Nardmann, J. 2018: Lepidopteran forest defoliators in a changing climate: performance in different life-history stages, and range expansion. – Doc.thesis, University of Turku, Biodiversity Unit, Doctoral Programme in Biology, Geography and Geology. Annales Universitatis Turkuensis, A II 347. 59 pp. + 4 articles. Julkaisun pysyvä osoite/Persistent identifier of an electronic document: http://urn.fi/URN:ISBN:978-951-29-7389-7

Huusko, K. 2018: Dynamics of root-associated fungal communities in relation to disturbance in boreal and subarctic forests. – Doc. thesis, University of Oulu Graduate School; University of Oulu, Faculty of Science. Acta Universitatis Ouluensis, A 710. 76 pp. + 3 articles.

Kandidaatin tutkielmat/Bachelor's theses

Maanpää, L. 2018: Ilmastonmuutos Kevolla ja sen vaikutus kirjosiepon (Ficedula hypoleuca) pesintämenestykseen. – B. Sc. thesis, Department of Biology, University of Turku. 12 pp.

Sievänen, C. 2018: Matalatasoisten ilmansaasteiden vaikutus maaperäeläinten (Acari, Collembola) tiheyteen. – B. Sc. thesis, Department of Biology, University of Turku. 19 pp. + 1 app.

Muut julkaisut/Other publications

Bougnounou, F., Hulme, P.E., Oksanen, L., Suominen, O. & Olofsson, J. 2018: Role of climate and herbivory on native and alien conifer seedling recruitment at and above the Fennoscandian treeline. – Journal of Vegetation Science 29(4): 573-584. doi.org/10.1111/jvs.12637

Drugs and therapies – Antioxidants; data on antioxidants reported by researchers at University of Turku (Red/green currant and sea buckthorn berry press residues as potential sources of antioxidants for food use). – Chemicals & Chemistry 11 May 2018: 606.

Fält-Nardmann, J.J.J., Klemola, T., Ruohomäki, K., Niemelä, P., Roth, M. & Saikkonen, K. 2018: Local adaptations and phenotypic plasticity may render gypsy moth and nun moth future pests in Northern European boreal forests. – Canadian Journal of Forest Research 48(3): 265-276. dx.doi.org/10.1139/cjfr-2016-0481

Hui, Z., Piilo, S.R., Amesbury, M.J., Charman, D.J., Gallego-Sala, A.V. & Väliranta, M.M. 2018: The role of climate change in regulating Arctic permafrost peatland hydrological and vegetation change over the last millennium. – Quaternary Science Reviews 182: 121-130. doi.org/10.1016/j.quascirev.2018.01.003

Kallio, H.P. 2018: Historical review on the identification of mesifurane, 2,5-dimethyl-4-methoxy-3(2H)-furanone, and its occurrence in berries and fruits. – Journal of Agricultural and Food Chemistry 66(11): 2553-2560. doi: 10.1021/acs.jafc.8b00519

Kallio, H. & Yang, B. 2018: Tyrnimarjan ja sen öljyjen terveysvaikutuksia. – Duodecim 134(13): 1371-8.

Kärnä, O.-M., Heino, J., Grönroos, M. & Hjort, J. 2018: The added value of geodiversity indices in explaining variation of stream macroinvertebrate diversity. – Ecological Indicators 94 (Part:1): 420-429. doi.org/10.1016/j.ecolind.2018.06.034

Lappalainen, K., Vogeler, N., Kärkkäinen, J., Dong, Y., Niemelä, M., Rusanen, A., Ruotsalainen, A.L, Wäli, P., Markkola, A. & Lassi, U. 2018: Microwave-assisted conversion of novel biomass materials into levulinic acid. – Biomass Conversion and Biorefinery 8(4): 965-970. doi.org/10.1007/s13399-018-0334-6

Maliniemi, T., Kapfer, J., Saccone, P., Skog, A. & Virtanen, R. 2018: Long-term vegetation changes of treeless heath communities in northern Fennoscandia: Links to climate change trends and reindeer grazing. – Journal of Vegetation Science 29(3): 469-479. doi.org/10.1111/jvs.12630

Markkula, I., Oksanen, P. & Kuhry, P. 2018: Indicator value of oribatid mites in determining past permafrost dynamics in northern European sub-Arctic peatlands. – Boreas 47(3): 884-896. doi.org/10.1111/bor.12312

Mofikoya, A.O., Miura, K., Ghimire, R.P., Blande, J.D., Kivimäenpää, M., Holopainen, T. & Holopainen, J.K. 2018: Understorey Rhododendron tomentosum and leaf trichome density affect mountain birch VOC emissions in the subarctic. – Scientific Reports 8: 13261. doi. 10.1038/s41598-018-31084-3

Ohenoja, E., Ruotsalainen A.L. & Vauras, J. 2018: Mycological records from ISAM 9, Kevo, Finland. – Mycoscience 59(4): 263-267. doi.org/10.1016/j.myc.2017.12.003

Pritchard, V.L., Mäkinen, H., Vähä, J.-P., Erkinaro, J., Orell, P. & Primmer, C.R. 2018: Genomic signatures of fine-scale local selection in Atlantic salmon suggest involment of sexual maturation, energy homeostasis and immune defence-related genes. – Molecular Ecology 27(11): 2560-2575. doi.org/10.1111/mec.14705

Puganen, A., Kallio, H.P., Schaich, K.M., Suomela, J.-P. & Yang, B. 2018: Red/green currant and sea buckthorn berry press residues as potential sources of antioxidants for food use. – Journal of Agricultural and Food Chemistry 66(13): 3426-3434. doi: 10.1021/acs.jafc.8b00177

Pääkkö, E., Mäkelä, K., Saikkonen, A., Tynys, S., Anttonen, M., Johansson, P., Kumpula, J., Mikkola, K., Norokorpi, Y., Suominen, O., Turunen, M., Virtanen, R. & Väre, H. 2018: Tunturit. Julk.: Kontula, T. & Raunio, A. (toim.). Suomen luontotyyppien uhanalaisuus 2018. Luontotyyppien punainen kirja – Osa 1: Tulokset ja arvioinnin perusteet. Suomen ympäristökeskus & ympäristöministeriö, Helsinki. Suomen ympäristö 5/2018. s. 255-313. Julkaisun pysyvä osoite/Persistent identifier of an electronic document: http://urn.fi/URN:ISBN:978-952-11-4816-3

Pääkkö, E., Mäkelä, K., Saikkonen, A., Tynys, S., Anttonen, M., Johansson, P., Kumpula, J., Mikkola, K., Norokorpi, Y., Suominen, O., Turunen, M., Virtanen, R. & Väre, H. Tunturit. Julk.: Kontula, T. & Raunio, A. (toim.). Suomen luontotyyppien uhanalaisuus2018. Luontotyyppien punainen kirja – Osa 2: Luontotyyppien kuvaukset. Suomen ympäristökeskus & ympäristöministeriö, Helsinki. Suomen ympäristö 5/2018. s. 759-884. Julkaisun pysyvä osoite/Persistent identifier of an electronic document: http://urn.fi/URN:ISBN:978-952-11-4819-4

Tolonen, K.E., Leinonen, K., Erkinaro, J. & Heino, J. 2018: Ecological uniqueness of macroinvertebrate communities in high-latitude streams is a consequence of deterministic environmental filtering processes. – Aquatic Ecology 52(1): 17-33. doi.org/10.1007/s10452-017-9642-3

Wang, D., Pentzold, S., Kunert, M., Groth, M., Brandt, W., Pasteels, J.M., Boland, W. & Burse, A. 2018: A subset of chemosensory genes differs between two populations of a specialized leaf beetle after host plan shift. – Ecology and Evolution 8(16): 8055-8075. doi.org/10.1002/ece3.4246

Zhang, H., Piilo, S.R., Amesbury, M.J., Charman, D.J., Gallego-Sala, A.V. & Väliranta, M.M. 2018: The role of climate change in regulating Arctic permafrost peatland hydrological and vegetation change over the last millennium. – Quaternary Science Reviews 182: 121-130. doi.org/10.1016/j.quascirev.2018.01.003

Julkaisut vuonna 2019 – Publications in 2019

Muut julkaisut/Other publications

Aykanat, T., Ozerov, M., Vähä, J.-P., Orell, P., Niemelä, P., Erkinaro, J. & Primmer, C.R. 2019: Co-inheritance of sea age at maturity and iteroparity in the Atlantic salmon vgll3 genomic region. – Journal of Evolutionary Biology 32(4): 343-355. doi.org/10.1111/jeb.13418

Bäck, J., Forsius, M., Heiskanen, J., Inkeroinen, J., Juurola, E., Karjalainen, J., Kaukolehto, M., Kolström, T., Latola, K., Lohila, A., Mäkipää, R., Paavola, R., Parland-von Essen, J., Pumpanen, J., Pursula, A., Rasilo, T., Suominen, O. & Tuittila, E. 2020: White paper on terrestrial ecological and environmental research infrastructures in Finland: analysis of the current landscape and proposal for future steps. – Reports of the Finnish Environment Institute 41/2019. ISBN (pbk.) 978-952-11-5085-2, ISBN (pdf) 978-952-11-5086-9. The publication is available in the internet (pdf): syke.fi/publications | helda.helsinki.fi and in print: syke.juvenesprint.fi

Ercan, F.E.Z., De Boer, H.J. & Wagner-Cremer, F. 2019: A growing degree day inference model based on mountain birch leaf cuticle analysis over a latitudinal gradient in Fennoscandia. – The Holocene 30(2): 344-349. doi.org: 10.1177/0959683619865605

Franke, A.K., Feilhauer, H., Bräuning, A., Rautio, P. & Braun, M. 2019: Remotely sensed estimation of vegetation shifts in the polar and alpine tree-line ecotone in Finnish Lapland during the last three decades. – Forest Ecology and Management 454: 117668. doi.org/10.1016/j.foreco.2019.117668

Gillespie, M.A.K., Alfredsson, M., Barrio, I.C., Bowden, J. Convey, P., Coulson, S.J., Culler, L.E. Martin, Dahl, M.T., Daly, K.M., Koponen, S., Loboda, S., Marusik, Y., Sandström, J.P., Sikes, D.S, Slowik, J. & Høye, T.T. 2019: Circumpolar terrestrial arthropod monitoring: A review of ongoing activities, opportunities and challenges, with a focus on spiders. – Ambio Apr 2019: 1-14. doi.org/10.1007/s13280-019-01185-y

Lathrop, R.C., Kasprzak, P., Tarvainen, M., Ventelä, A.-M., Keskinen, T., Koschel, R. & Robertson, D.M. 2019: Seasonal epilimnetic temperature patterns and trends in a suite of lakes from Wisconsin (USA), Germany, and Finland. – Inland Waters 9(4): 471-488. doi.org/10.1080/20442041.2019.1637682

Leinonen, P.H., Helander, M., Vázquez-de-Aldana, B.R., Zabalgogeazcoa, I. & Saikkonen, K. 2019: Local adaptation in natural European host grass populations with asymmetric symbiosis. – PlosOne 14(4): e0215510. doi: 10.13717/journal.pone.0215510

Lotsari, E., Tarsa, T., Kamari, M., Alho, P. & Kasvi, E. 2019: Spatial variation of flow characteristics in a subarctic meandering river in ice-covered and open-channel conditions: A 2D hydrodynamic modelling approach. – Earth Surface Process and Landforms 44(8): 1509-1529. doi: 10.1002/esp.4589

Luoto, T.P., Rantala, M.V., Kivilä, E.H. & Nevalainen, L. 2019: Recent changes in chironomid communities and hypolimnetic oxygen conditions relate to organic carbon in subarctic ecotonal lakes. – Science of the Total Environment: 646: 238-244. doi.org/10.1016/j.scitotenv.2018.07.306

Mäkinen, Y., Piirainen, M., Laine, U., Nurmi, J., Heino, S. & Iso-Iivari, L. 2019: Vascular flora of Inari Lapland. 9. Geraniceae – Primulaceae. – Reports from the Kevo Subarctic Research Station 25: 3-164.

Nevalainen, L., Kivilä, E., Luoto, T. & Rantala, M. 2019: A hidden species becoming visible: biogeography and ecology of Rhynchotalona latens (Cladocera, Anomopoda, Chydoridae). – Hydrobiologia 837(1): 47-59. doi.org/10.1007/s10750-019-3958-z

Nylén, T., Kasvi, E., Salmela, J., Kaartinen, H., Kukko, A., Jaakkola, A., Hyyppä, J. & Alho, P. 2019: Improving distribution models of riparian vegetation with mobile laser scanning and hydraulic modelling. – PlosOne 14(12): e0225936. doi: 10.1371/journal.pone.0225936

Pepin, N.C., Pike, G., Read, S. & Williams, R. 2019: The ability of moderate resolution imaging spectroradiometer land surface temperatures to simulate cold air drainage and microclimates incomplex Arctic terrain. – International Journal of Climatology 39(2): 953-973. doi.org/10.1002/joc.5854

Rheubottom, S.I., Barrio, I.C., Kozlov, M.V., Alatalo, J.M., Andersson, T., Asmus, A.L., Baubin, C., Brearley, F.Q., Egelkaraut, D.D., Ehrich, D., Gauthier, G., Jónsdóttir, I.S., Konieczka, S., Lévesque, E., Olofsson, J., Prevéy, J.S., Slevan-Tremblay, G., Sokolov, A., Sokolova, N., Sokovnina, S., Speed, J.D.M., Suominen, O., Zverev, V. & Hik, D.S. 2019: Hiding in the background: community-level patterns in invertebrate herbivory across the tundra biome. – Polar biology 42(10) 1881-1897. doi.org/10.1007/s00300-019-02568-3

Rousi, M., Possen, B.J.M.H., Pulkkinen, P. & Mikola, J. 2019: Using long-term data to reveal the geographical variation in timing and quantity of pollen and seed production in silver and pubescent birch in Finland: Implications for gene flow, hybridization and responses to climate warming. – Forest Ecology and Management 438: 25-33. doi.org/10.1016/j.foreco.2019.02.001

Saikkonen, T., Vahtera, V., Koponen, S. & Suominen, O. 2019: Effects of reindeer grazing and recovery after cessation of grazing on the ground-dwelling spider assemblage in Finnish Lapland. – PeerJ 7:e7330. doi.org/10.7717/peerj.7330

Sandén, H., Mayer, M., Stark, S., Sandén, T., Nilsson, L.O., Jepsen, J.U., Wäli, P.R. & Rewald, B. 2019: Moth outbreaks reduce decomposition in subarctic forest soils. – Ecosystems May 2019: 1-13. doi: 10.1007/s10021-019-00394-6

Saravesi, K., Markkola, A. Taulavuori, E., Syvänperä, I., Suominen, O., Suokas, M., Saikkonen, K. & Taulavuori, K. 2019: Impacts of experimental warming and northern light climate on growth and root fungal communities of Scots pine populations. – Fungal Ecology 40: 43-49. doi.org/10.1016/j.funeco.2018.12.010

Siljanen, H.M.P., Alves, R.J.E, Jussi G. Ronkainen, J.G. Richard E. Lamprecht, R.E., Bhattarai, H.R., Bagnoud, A., Marushchak, M.E., Martikainen, P.J., Schleper, C. & Biasia, C. 2019: Archaeal nitrification is a key driver of high nitrous oxide emissions from arctic peatlands. – Soil Biology and Biochemistry 137: 107539. doi.org/10.1016/j.soilbio.2019.107539

Szeroczyńska, K. 2019: Forty years of my adventures with Cladocera remains: retrospection on my scientific work. – Journal of Paleolimnology 61(4): 437-448. doi: 10.1007/s10933-019-00070-8

Tiusanen, M., Huotari, T., Hebert, P.D.N., Andersson, T., Asmus, A., Bêty, J., Davis, E, Gale, J., Hardwick, B., Hik, D., Körner, C., Lanctot, R.B., Loonen, M.J.J.E., Partanen, R., Reischke, K., Saalfeld, S.T., Senez-Gagnon, F., Smith, P.A., Šulavik, J., Syvänperä, I., Urbanowicz, C. Williams, S., Woodard, P., Zaika, Y. & Roslin, T. 2019: Flower-visitor communities of an arcto-alpine plant. – Global patterns in species richness, phylogenetic diversity and ecological functioning. – Molecular Ecology 28(2): 318-335. doi.org/10.1111/mec.14932

Von Cräutlein, M., Leinonen, P.H., Korpelainen, H., Helander, M., Väre, H. & Saikkonen, K. 2019: Postglacial colonization history reflects in the genetic structure of natural populations of *Festuca rubra* in Europe. – Ecology and Evolution 9(6): 3661-3674. doi.org/10.1002/ece3.4997

Økland, B., Flø, D., Schroeder, M., Zach, P., Cocos, D., Martikainen, P., Siitonen, J. Mandelshtam, M.Y., Musolin. D., Neuvonen, S., Vakula, J., Nikolov, C., Lindelöw, Å & Voolma, K. 2019: Range expansion of the small spruce bark beetle Ips amitinus: a newcomer in northern Europe. – Agricultural and Forest Entomology 21: 286-298. doi: 10.1111/afe.12331

Julkaisut vuonna 2020 – Publications in 2020

Väitöskirjat/Doctoral dissertations

Markkula, I. 2020: Oribatid mites (Acari: Oribatida) in sub-Arctic peatlands: a multidisciplinary investigation into climate change, permafrost dynamics and indicator values of subfossils. – Doc.thesis, University of Turku, Faculty of Science and Engineering, Biodiversity Unit, Doctoral Programme in Biology, Geography and Geology. Annales Universitatis Turkuensis A II 360. 43 pp. + 4 articles. Julkaisun pysyvä osoite/Persistent identifier of an electronic document: http://urn.fi/URN:ISBN:978-951-29-7389-7

Muut julkaisut/Other publications

Aykanat, T., Rasmussen, M., Ozerov, M., Niemel, E., Paulin, L., Vähä, J.-P., Hindar, K., Wennevik, V., Pedersen, T., Svenning, M.-A. & Primmer, C.R. 2020: Life-History genomic regions explain differences in Atlantic salmon marine diet specialization. – Journal of Animal Ecology 89(11): 2677-2691. doi.org/10.1111/1365-2656.13324.

Kankaanpää, T., Vesterinen, E., Hardwick, B., Schmidt, N.M., Andersson, T., Aspholm, P.E., Barrio, I.C., Beckers, N., Bêty, J., Birkemoe, T., DeSiervo, M., Drotos, K.H.I., Ehrich, D., Gilg, O., Gilg, V., Hein, N., Høye, T.T., Jakobsen, K.M., Jodouin, C., Jorna, J., Kozlov, M.V., Kresse, J.-C., Leandri-Breton, D.-J., Lecomte, N., Loonen, M., Marr, P., Monckton, S.K., Olsen, M., Otis, J.-A., Pyle, M., Roos, R.E., Raundrup, K., Rozhkova, D., Sabard, B., Sokolov, A., Sokolova, N., Solecki, A.M., Urbanowicz, C., Villeneuve, C., Vyguzova, E., Zverev, V. & Roslin, T. 2020: Parasitoids indicate major climate-induced shifts in arctic communities. – Global Change Biology 26: 6276-6295. doi: 10.1111/gcb.15297

Lagomarsino, A. & Agnelli, A.E. 2020: Influence of vegetation cover and soil features on CO_2, CH_4 and N_2O fluxes in northern Finnish Lapland. – Polar Science 24: 100531. doi.org/10.1016/j.polar.2020.100531

Lehmann, P., Ammunet, T. Barton, M., Battisti, A., Eigenbrode, S.D., Jepsen. J.U., Kalinkat, G., Neuvonen, S., Niemelä, P., Terblanche, J.S., Økland, B. & Björkman, C. 2020: Complex responses of global insect pests to climate warming. – Frontiers in Ecology and the Environment 18(3): 141-149. doi.org: 10.1002/fee.2160

Limpens, J., Fijen, T.P.M., Keizer, I., Meijer, J., Olsthoorn, F., Pereira, A., Postma, R, Suyker, M., Vasander, H. & Holmgren. M. 2020. Shrubs and degraded permafrost pave way for tree establishment in subarctic peatlands. – Ecosystem (2020). doi: 10.1007/s10021-020-00523-6

Luoto, T.P., Kivilä, E.H., Kotrys, B.,Płóciennik, M., Rantala, M.V. & Nevalainen, L. 2020: Air temperature and water level inferences from northeastern Lapland (69°N) since the Little Ice Age. – Polish Polar Resesarch 41(1): 23-40. doi: 10.24425/ppr.2020.132568

Melin, M., Viiri, H., Tikkanen, O.-P., Elfving, R. & Neuvonen, S. 2020: From a rare inhabitant into a potential pest – status of the nun month in Finland based a pheromone trapping. – Silva Fennica 54(1): article id 10262. doi.org/10.14214/sf.10262

Romashkin, I., Neuvonen, S. & Tikkanen, O.-P. 2020: Northward shift in temperature sum isoclines may favour *Ips typographus* outbreaks in european Russia. – Agricultural and Forest Entomology 22(3): 238-249. doi: 10.1111/afe.12377

Sabater, A.M., Ward, H.C., Hill, T.C., Gornall, J.L., Wade, T.J., Evans, J.G., Prieto-Blanco, A., Disney, M., Phoenix, G.K., Williams, M., Huntley, B., Baxter, R., Mencuccini, M. & Poyatos, R. 2020: Transpiration from subarctic deciduous woodlands: Environmental controls and contribution to ecosystem evapotranspiration. – Ecohydrology 13(3): e2190. doi.org/10.1002/eco.2190

Sewerniak, P. 2020: Differences in growth parameters of Scots pine between Poland and Finland: a comparative study with reference to soil texture. – Soil Science Annual 71(2): 111-117. doi.org/10.37501/soilsa/112401

Silfver, T., Heiskanen, L., Aurela, M., Myller, K., Karhu, K., Meyer, N., Tuovinen, J.-P., Oksanen, E., Rousi, M. & Mikola, J. 2020: Insect herbivory dampens Subarctic birch forest C sink response to warming. – Nature Communications 11: 2529. doi.org/10.1038/s41467-020-16404-4

Sormunen, J.J., Andersson, T., Aspi, J., Bäck, J., Cederberg, T., Haavisto, N., Halonen, H., Hänninen, J., Inkinen, J., Kulha, N., Laaksonen, M., Loehr, J., Mäkelä, S., Mäkinen, K., Norkko, J., Paavola, R., Pajala, P., Petäjä, T., Puisto, A., Sippola, E., Snickars, M., Sundell, J., Tanski, N., Uotila, A., Vesilahti, E.-M., Vesterinen, E., Vuorenmaa, S., Ylönen, H., Ylönen, J. & Klemola, T. 2020: Monitoring of ticks and tick-borne pathogens through a nationwide research station network in Finland. – Ticks and Tick-borne Diseases 11(5): 101449. doi.org/10.1016/j.ttbdis.2020.101449

Thitz, P., Mehtätalo, L., Välimäki, P., Randriamanana, T., Lännenpää, M., Hagermann, A.E., Andersson, T., Julkunen-Tiitto, R. & Nyman, T. 2020: Phytochemical shift from condensed tannins to flavonoids in transgenic *Betula pendula* decreases consumption and growth but improves growth efficiency of *Epirrita autumnata* larvae. – Journal of Chemical Ecology 46: 217-231. doi.org/10.1007/s10886-019-01134-9