

This document includes the lists of recent scientific publications, reports and other references provided by International Cooperative Programmes and the Coordination Centre for Effects under the Working Group on Effects (WGE) for its information and consideration at its thirty-third session (held on 17-19 September 2014). The list below include items in addition to those mentioned in the respective official documents/reports submitted by the programmes and groups for the 33<sup>rd</sup> WGE session.

## I. ICP Forests

### Scientific Publications

#### General approach, methodological papers and overall reviews

Danielewska, A., Clarke, N., Olejnik, J., Hansen, K., de Vries, W., Lundin, L., Tuovinen, J.-P., Fischer, R., Urbaniak, M., Paoletti, E., 2013: A meta-database comparison from various European Research and Monitoring Networks dedicated to forest sites. *iForest* 6: 1-9.

Danielewska, A., Paoletti, E., Clarke, N., Olejnik, J., Urbaniak, M., Barab, M., Siedlecki, P., Hansen, K., Lundin, L., de Vries, W., Nørgaard Mikkelsen, T., Dillen, S., Fischer, R., 2013: Towards integration of research and monitoring at forest ecosystems in Europe. *Forest Systems* 22: 535-545.

Gasparini, P., Di Cosmo, L., Cenni, E., Pompei, E., Ferretti, M., 2013: Towards the harmonization between national forest inventory and forest condition monitoring. Consistency of plot allocation and effect of tree selection methods on sample statistics in Italy. *Environmental Monitoring and Assessment* 185: 6155-6171.

Lukina, N. V., Orlova, M. A., Gornov, A. V., Kryshen, A. M., Kuznetsov, P. V., Knyazeva, S. V., Smirnov, V. E., Bakhmet, O. N., Eydlina, S. P., Ershov, V. V., Zukert, N. V., Isaeva, L. G., 2013: Assessment of sustainable forest management criteria using indicators of the international programme ICP Forests. *Contemporary Problems of Ecology* 7: 734-745.

Travaglini, D., Fattorini, L., Barbati, A., Bottalico, F., Corona, P., Ferretti, M., Chirici, G., 2013: Towards a sampling strategy for the assessment of forest condition at European level: combining country estimates. *Environmental Monitoring and Assessment* 185: 3255-3268.

De Vries, W., Dobbertin, M.H., Solberg, S., van Dobben, H.F., Schaub, M., 2014: Impacts of acid deposition, ozone exposure and weather conditions on forest ecosystems in Europe: an overview. *Plant and Soil*, DOI 10.1007/s11104-014-2056-2

Eickenscheidt, N., Wellbrock, N., 2014: Consistency of defoliation data of the national training courses for the forest condition survey in Germany from 1992 to 2012. *Environmental Monitoring and Assessment* 186: 257-275.

Ferretti, M., Schaub, M., 2014: Monitoring European forests – Detecting and understanding changes. *Forest Ecology and Management* 311: 1-2. \*

#### Deposition

Jakovljević, T., Marchetto, A., Berković, K., Roša, J., Potočki, A., 2013: Atmospheric deposition measurement in the lowland forest ecosystem of Pokupsko basin in Croatia. *Periodicum Biologorum* 115 (3): 363-370.

Marchetto, A., Rogora, M., Arisci, S., 2013: Trend analysis of atmospheric deposition data: A comparison of statistical. *Atmospheric Environment* 64: 95-102.

Fischer, R., Scheuschner, T., Schlutow, A., Granke, O., Mues, V., Olschofsky, K., Nagel, H.-D., 2014: Effects evaluation and risk assessment of air pollutants deposition at European monitoring sites of the ICP Forests. In: Steyn, D.G., Builtjes, P.J.H. (eds): *Air Pollution Modelling and its Application. Proceedings of the 32<sup>nd</sup> NATO/SPS International Technical Meeting on Air Pollution and its Application; Utrecht, The Netherlands, 1-11 May 2012.* Dordrecht: Springer Netherlands, 89-93.

Hůnová I., Maznová J., Kurfürst P., 2014: Trends in atmospheric deposition fluxes of sulphur and nitrogen in Czech forests. *Environmental Pollution* 184: 668–675.

Skudnik, M., Jeran, Z., Batič, F., Simončič, P., Lojen, S., Kastelec, D., 2014: Influence of canopy drip on the indicative N, S and  $\delta(15)N$  content in moss *Hypnum cupressiforme*. *Environmental Pollution* 190: 27-35.

Tipping, E., Benham, S., Boyle, J. F., Crow, P., Davies, J., Fischer, U., Guyatt, H.J., Helliwell, R., Jackson-Blake, L., Lawlor, A.J., Monteith, D.T., Rowe, E.C., Toberman, H., 2014: Atmospheric deposition of phosphorus to land and freshwater. *Environmental Science: Processes & Impacts*, doi: 10.1039/c3em00641g.

Ferretti, M., Marchetto, A., Arisci, S., Bussotti, F., Calderisi, M., Carnicelli, S., Cecchini, G., Fabbio, G., Bertini, G., Matteucci, G., de Cinti, B., Salvati, L., Pompei, E., 2014: On the tracks of nitrogen deposition effects on temperate forests at their southern European range – an observational study from Italy. *Global Change Biology*, doi: 10.1111/gcb.12552.

#### Tree performance (growth, crown condition, nutrient supply, phenology)

Etzold, S., Zweifel, R., Ruehr, N.K., Eugster, W., Buchmann, N., 2013: Long-term stem CO<sub>2</sub> concentration measurements in Norway spruce in relation to biotic and abiotic factors. *New Phytologist* 197: 1173-1184.

Richter, A.K., Hajdas, I., Frossard, E., Brunner, I., 2013: Soil acidity affects fine root turnover of European beech. *Plant Biosystems* 147: 50-59.

Vilhar, U., Skudnik, M., Simončič, P., 2013: Phenological phases of trees on the intensive forest monitoring plots in Slovenia. *Acta Silvae et Ligni* 100: 5-17.

Weber, P., Bugmann, H., Pluess, A.R., Walthert, L., Rigling, A., 2013: Drought response and changing mean sensitivity of European beech close to the dry distribution limit. *Trees* 27: 171-181.

Baumgarten, M., Weis, W., Kühn, A., May, K., Matyssek, R., 2014: Forest transpiration – targeted through xylem sap flux assessment versus hydrological modeling. *European Journal of Forest Research*, doi: 10.1007/s10342-014-0796-4.

Churakova, O., Eugster, W., Zielis, S., Cherubini, P., Etzold, S., Saurer, M., Siegwolf, R., Buchmann, N., 2014: Increasing relevance of spring temperatures for Norway spruce trees in Davos, Switzerland, after the 1950s. *Trees* 28: 183-191.

Etzold, S., Waldner, P., Thimonier, A., Schmitt, M., Dobbertin, M., 2014: Tree growth in Swiss forests between 1995 and 2010 in relation to climate and stand conditions: Recent disturbances matter. *Forest Ecology and Management* 311: 41-55. \*

Ferretti, M., Nicolas, M., Bacaro, G., Brunialti, G., Calderisi, M., Croisé, L., Frati, L., Lanier, M., Maccherini, S., Santi, E., Ulrich, E., 2014: Plot-scale modelling to detect size, extent, and correlates of changes in tree defoliation in French high forests. *Forest Ecology and Management* 311: 56-69. \*

Jonard, M., Fürst, A., Verstraeten, A., Thimonier, A., Timmermann, V., Potočić, N., Waldner, P., Benham, S., Hansen, K., Merilä, P., Ponette, Q., de la Cruz, A., Roskams, P., Nicolas, M., Croisé, L., Ingerslev, M., Matteucci, G., Decinti, B., Bascietto, M., Rautio, P., 2014: Tree mineral nutrition is deteriorating in Europe. *Global Change Biology*, doi: 10.1111/gcb.12660.

Veresoglou, S. D., Peñuelas, J., Fischer, R., Rautio, P., Sardans, J., Merilä, P., Tabakovic-Tosic, M., Rillig, M.C., 2014: Exploring continental-scale stand health – N:P ratio relationships for European forests. *New Phytologist* 202 (2): 422-430.

Vitale, M., Proietti, C., Cionni, I., Fischer, R., De Marco, A., 2014: Random forests analysis: a useful tool for defining the relative importance of environmental conditions on crown defoliation. *Water, Air, & Soil Pollution* 225, 1992, doi: 10.1007/s11270-014-1992-z.

#### Tropospheric Ozone

Gottardini, E., Cristofori, A., Cristofolini, F., Nali, C., Pellegrini, E., Bussotti, F., Ferretti, M., 2014: Chlorophyll-related indicators are linked to visible ozone symptoms: Evidence from a field study in native *Viburnum lantana* L. plants in northern Italy. *Ecological Indicators* 39: 65-74.

Braun, S., Schindler, C., Rihm, B., 2014: Growth losses in Swiss forests caused by ozone: Epidemiological data analysis of stem increment of *Fagus sylvatica* L. and *Picea abies* Karst. *Environmental Pollution* 192: 129-138.

#### Soil and Soil Solution

Frey, B., Rieder, S.R., 2013: Response of forest soil bacterial communities to mercury chloride application. *Soil Biology and Biochemistry* 65: 329-337.

Rieder, S.R., Frey, B., 2013: Methyl-mercury affects microbial activity and biomass, bacterial community structure but rarely the fungal community structure. *Soil Biology and Biochemistry* 64: 164-173.

Camino-Serrano, M., Gielen, B., Luyssaert, S., Ciais, P., Vicca, S., Guenet, B., De Vos, B., Cools, N., Ahrens, B., Arain, M.A., Borken, W., Clarke, N., Clarkson, B., Cummins, T., Don, A., Graf Pannatier, E., Laudon, H.,

Moore, T., Nieminen, T.M., Nilsson, M.B., Peichl, M., Schwendenmann, L., Siemens, J., Janssens, I., 2014: Linking variability in soil solution dissolved organic carbon to climate, soil type, and vegetation type. *Global Biogeochemical Cycles* 28: 497-509.

Cools, N., Vesterdal, L., De Vos, B., Vanguelova, E., Hansen, K., 2014: Tree species is the major factor explaining C:N ratios in European forest soils. *Forest Ecology and Management* 311: 3–16. \*

Merilä, P., Mustajärvi, K., Helmisääri, H.-S., Hilli, S., Lindroos, A.-J., Nieminen, T.M., Nöjd, P., Rautio, P., Salemaa, M., Ukonmaanaho, L., 2014: Above-and below-ground N stocks in coniferous boreal forests in Finland: Implications for sustainability of more intensive biomass utilization. *Forest Ecology and Management* 311: 17-28. \*

Rieder, S.R., Tipping, E., Zimmermann, S., Graf Pannatier, E., Waldner, P., Meili, M., Frey, B., 2014: Dynamic modelling of the long term behaviour of cadmium, lead and mercury in Swiss forest soils using CHUM-AM. *Science of the Total Environment* 468–469: 864-876.

Starr, M., Lindroos A.-J., Ukonmaanaho, L., 2014: Weathering release rates of base cations from soils within a boreal forested catchment: variation and comparison to deposition, litterfall and leaching fluxes. *Environmental Earth Sciences*, doi 10.1007/s12665-014-3381-8.

Verstraeten, A. De Vos, B., Neiryneck, J., Roskams, P., Hens, M., 2014: Impact of air-borne or canopy-derived dissolved organic carbon (DOC) on forest soil solution DOC in Flanders, Belgium. *Atmospheric Environment* 83: 155-165.

#### Ground Vegetation and Biodiversity

Buriánek, V., Novotný, R., Hellebrandová, K., Šrámek, V., 2013: Ground vegetation as an important factor in the biodiversity of forest ecosystems and its evaluation in regard to nitrogen deposition. *Journal of Forest Science* 59: 238-252.

Dirnböck, T., Grandin, U., Bernhardt-Römermann, M., Beudert, B., Canullo, R., Fosius, M., Grabner, M.-T., Holmberg, M., Kleemola, S., Lundin, L., Mirtl, M., Neumann, M., Pompei, E., Salemaa, M., Starlinger, F., Staszewki, T., Uziębło, K.A., 2013: Forest floor vegetation response to nitrogen deposition in Europe. *Global Change Biology*, doi: 10.1111/gcb.12440.

Giordani, P., Calatayud, V., Stofer, S., Seidling, W., Granke, O., Fischer, R., 2014: Detecting the nitrogen critical loads on European forests by means of epiphytic lichens. A signal-to-noise evaluation. *Forest Ecology and Management* 311: 29-40. \*

Seidling, W., Travaglini, D., Meyer, P., Waldner, P., Fischer, R., Granke, O., Chirici, G., Corona, P., 2014: Dead wood and stand structure – relationships for selected plots in forests across Europe. *iForest*, doi: 10.3832/ifor1057-007.

#### Meteorology

von Arx, G., Dobbertin, M., Rebetez, M., 2013: Detecting and correcting sensor drifts in long-term weather data. *Environmental Monitoring and Assessment* 185: 4483-4489.

von Arx, G., Graf Pannatier, E., Thimonier, A., Rebetez, M., 2013: Microclimate in forests with varying leaf area index and soil moisture: Potential implications for seedling establishment in a changing climate. *Journal of Ecology* 101: 1201-1213.

\*: Publications in a special issue of 'Forests Ecology and Management'

#### **Reports/leaflets**

Rupel, M., Žlindra D., Špenko, M., Rotar, M., 2013: Passive monitoring of air pollution: a documentary film. <http://www.gozdis.si/novice/spremljanje-onesnazil-v-ozracju-film-2014-02-21/>

Vilhar, U. (ed.), 2013: Workshop "Intensive monitoring of forest ecosystems": conference proceedings. Ljubljana: Gozdarski inštitut Slovenije, 130 p. <http://www.gozdis.si/novice/delavnica-o-intenzivnem-spremljanju-stanja-gozdov-2013-09-20/>

Fürst, A., 2014: Technical Report QA-R Foliar 14: 16th Needle/Leaf Interlaboratory Comparison Test 2013/2014. Federal Research and Training Centre, Natural Hazards and Landscape, Forest Foliar Co-ordinating Centre, Vienna/Austria, 43 p. + Annex.

Michel, A., Seidling, W., Lorenz, M., Becher, G. (eds.), 2014: Forest condition of in Europe: 2013 Technical Report of ICP Forests. Report under the UNECE Convention on long-range transboundary air pollution (CLRTAP). Thünen Working Paper (Braunschweig), Vol. 19, 134 p.

Mills, G., Sharps, K., Schaub, M., 2014: Have you seen these ozone injury symptoms? Brochure for ozone injury smart-phone App, produced by ICP Vegetation in collaboration with ICP Forests EP on Ambient Air Quality, 8 p.

### **Proceedings of Scientific Conferences**

Ferretti, M., De Vos, B., Fischer, R., Hansen, K., Schaub, M. (committee), 2013: ICP Forests - today's evaluation and future monitoring. 2<sup>nd</sup> ICP Forests Scientific Conference, 28-29 May 2013, Belgrade, Serbia, 61 p.

Seidling, W., Ferretti, M., Michel, A., Micholopoulos, P. (eds.), 2014: Impact of nitrogen deposition and ozone on the climate change mitigation potential and sustainability of European forests, Abstracts. 3rd ICP Forests Scientific Conference, Athens, Greece, 26-28 May 2014, Hellenic Agricultural Organization Demeter, Institute of Mediterranean Forest Ecosystems and Forest Products Technology, Athens/Greece and Thünen Institute of Forest Ecosystems, Eberswalde/Germany, 2014, 32 p.

**Website:** <http://icp-forests.net>.

## **II. The Coordination Centre for Effects and the ICP Modelling and Mapping**

### **UNECE Reports and documentation:**

ECE/EB.AIR/WG.1/2013/14, report & brochure - Benefits of air pollution control for biodiversity and ecosystem services;

ECE/EB.AIR/2013/8 - Guidance document on health and environmental improvements using new knowledge, methods and data;

ECE/EB.AIR/WG.1/2014/3 - Joint report WGE;

ECE/EB.AIR/WG.1/2014/10 - Technical ICPM&M and CCE report: "no net loss of biodiversity" in ecosystems related to air pollution: observations, indicators and modelling. Response to the 2012-2014 call for data.

Contribution to ICP-Vegetation report "Air Pollution: Deposition to and impacts on vegetation in (South-)East Europe, Caucasus, Central Asia (EECCA/SEE) and South-East Asia", ICP-V (2014), ([http://icpvegetation.ceh.ac.uk/publications/documents/CEHOzoneReport2014\\_webhighres.pdf](http://icpvegetation.ceh.ac.uk/publications/documents/CEHOzoneReport2014_webhighres.pdf))

DRAFT update of the Modelling and Mapping Manual. In prep.

CCE Status report 2014 (in prep; finalisation in 2014 depends on the latest NFC replies to the 2012-2014 call for data) as agreed by the thirtieth session of the TF M&M (Rome, 7-10 April 2014)

Contribution to the EU: In collaboration with ICPs F, V, W, IM the ICP M&M (CCE) contributed to a draft text for the ANNEX V on monitoring requirements as part of the review and revision by the EU of the NEC Directive.

### **Open publications, book chapters and reports:**

Aherne J, Posch M, 2013. Impacts of nitrogen and sulphur deposition on forest ecosystem services in Canada. *Current Opinion in Environmental Sustainability* 5, 108-115

Amann M, Borcken-Kleefeld J, Cofala J, Hettelingh J-P, Heyes C, Höglund-Isaksson L, Holland M R, Kiesewetter G, Klimont Z, Rafaj P, Posch M, Sander R, Schöpp W, Wagner F, Winiwarter W, 2014. The final policy scenarios of the EU Clean Air Policy Package. TSAP Report #11, version 1.1a, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria, 45 pp; [www.iiasa.ac.at/web/home/research/researchPrograms/MitigationofAirPollutionandGreenhousegases/TSAP-reports.en.html](http://www.iiasa.ac.at/web/home/research/researchPrograms/MitigationofAirPollutionandGreenhousegases/TSAP-reports.en.html)

Amann M, Bertok I, Borcken-Kleefeld J, Cofala J, Hettelingh J-P, Heyes C, Holland M R, Kiesewetter G, Klimont Z, Rafaj P, Paasonen P, Posch M, Sander R, Schöpp W, Wagner F, Winiwarter W, 2013. Policy scenarios for the revision of the Thematic Strategy on Air Pollution. TSAP Report #10, version 1.2, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria, 63 pp; [www.iiasa.ac.at/web/home/research/researchPrograms/MitigationofAirPollutionandGreenhousegases/TSAP-reports.en.html](http://www.iiasa.ac.at/web/home/research/researchPrograms/MitigationofAirPollutionandGreenhousegases/TSAP-reports.en.html)

Clair TA (et al.) 2014. The Critical Loads and Levels Approach for Nitrogen, Chapter 50 in: MA Sutton, KE Mason, LJ Sheppard, H Sverdrup, R Haeuber, WK Hicks (eds): Nitrogen Deposition, Critical Loads and Biodiversity. Springer, pp. 411-424; ISBN 978-94-007-7938-9

- De Vries W, Hettelingh J-P, Posch M (eds.) Critical loads and dynamic risk assessments of nitrogen, acidity and metals for terrestrial and aquatic ecosystems. To be submitted to Springer in July 2014.
- De Vries W, Posch M, Reinds GJ, Hettelingh J-P, 2014. Quantification of impacts of nitrogen deposition on forest ecosystem services in Europe. Chapter 43 in: MA Sutton, KE Mason, LJ Sheppard, H Sverdrup, R Haeuber, WK Hicks (eds): Nitrogen Deposition, Critical Loads and Biodiversity. Springer, pp. 411-424; ISBN 978-94-007-7938-9
- De Vries W, Goodale C, Erisman JW, Hettelingh J-P, 2014. Impacts of Nitrogen Deposition on Ecosystem Services in Interaction with Other Nutrients, Air Pollutants and Climate Change, Chapter 41 in: MA Sutton, KE Mason, LJ Sheppard, H Sverdrup, R Haeuber, WK Hicks (eds): Nitrogen Deposition, Critical Loads and Biodiversity. Springer, pp. 411-424; ISBN 978-94-007-7938-9
- Granath G, Limpens J, Posch M, Muecher S, de Vries W, 2014. Spatio-temporal trends of nitrogen deposition and climate effects on Sphagnum productivity in European peatlands. *Environmental Pollution*, 187, 73-80
- Hettelingh J-P, Posch M, Velders JM, Ruysenaars, Adam M, de Leeuw, F, Lükewille A, Maas R, Sliggers J, Slootweg J, 2013. Assessing interim objectives for acidification, eutrophication and ground-level ozone of the EU National Emissions Ceilings Directive with 2001 and 2012 knowledge, *Atmospheric Environment* 75: 129-140
- Hettelingh J-P, De Vries W, Posch M, Reinds GJ, Slootweg J, Hicks WK, 2014. Development of the critical loads concept and current and potential applications to different regions of the world. Chapter 30 in: MA Sutton, KE Mason, LJ Sheppard, H Sverdrup, R Haeuber, WK Hicks (eds): Nitrogen Deposition, Critical Loads and Biodiversity. Springer, pp. 281-294; ISBN 978-94-007-7938-9
- Hettelingh J-P, Posch M, 2014. Effects of Air Pollution on European Ecosystems: Past and future exposure of European freshwater and terrestrial habitats to acidifying and eutrophying air pollutants, European Environment Agency, Technical report 11/2014 prepared by the CCE with contributions from the ETC-ACM and the EEA, <http://www.eea.europa.eu/publications/effects-of-air-pollution-on>
- Holmberg M, Vuorenmaa J, Posch M, Forsius M, Lundin L, Kleemola S, Augustaitis A, Beudert B, de Wit HA, Dirnböck T, Evans C D, Frey J, Grandin U, Indrikson I, Kram P, Pompei E, Schulte-Bisping H, Srybny A, Vana M, 2013. Relationship between critical load exceedances and empirical impact indicators at Integrated Monitoring sites across Europe. *Ecological Indicators* 24, 256-265
- Kopáček J, Hejzlar J, Porcal P, Posch M, 2014. Sulphate leaching from diffuse agricultural and forest sources in a large central European catchment during 1900-2010. *Science of the Total Environment*, 470/471, 543-550
- Rowe EC, Tipping E, Posch M, Oulehle F, Cooper DM, Jones TG., Burden A, Hall J, Evans CD, 2014. Predicting nitrogen and acidity effects on long-term dynamics of dissolved organic matter. *Environmental Pollution*, 184, 271-282
- Simpson D, Andersson C, Christensen JH, Engardt M, Geels C, Nyiri A, Posch M, Soares J, Sofiev M, Wind P, Langner J, 2014. Impacts of climate and emission changes on nitrogen deposition in Europe: a multi-model study. *Atmospheric Chemistry and Physics* 14, 6995-7017

#### **Minutes of the Task Force meeting (Rome, 7-10 April 2014)**

Le Gall, Anne Christine, Hettelingh, Jean Paul and participants to the meetings (2014) Report International Cooperative Programme on Modelling and Mapping of Critical Loads and Levels and Air Pollution Effects, Risks and Trends, DRAFT Chair's REPORT of 24th CCE Workshop and the 30th meeting of the Programme Task Force 7th-10th April 2014 in Rome, Italy. Available on [www.icpmapping.org/](http://www.icpmapping.org/).

**Websites:** <http://wge-ccc.org/Publications> and [www.icpmapping.org/](http://www.icpmapping.org/)

### **III. ICP Waters**

#### **UNECE reports and documentation::**

ECE/EB.AIR/WG.1/2013/3 - Joint report WGE;

ECE/EB.AIR/WG.1/2013/6 - technical report ICP Waters

ECE/EB.AIR/WG.1/2013/14 - report & brochure - Benefits of air pollution control for biodiversity and ecosystem services

**ICP Waters reports**

ICP Waters report 116/2013. Escudero, C. Intercomparison 1327: pH, Conductivity, Alkalinity, NO<sub>3</sub>-N, Cl, SO<sub>4</sub>, Ca, Mg, Na, K, TOC, Al, Fe, Mn, Cd, Pb, Cu, Ni and Zn.

ICP Waters Report 115/2013 - Effects of long-range transported air pollution on freshwater ecosystem services. Holen, S., R.F. Wright, I. Seifert.

ICP waters report 114/2013- Biodiversity in freshwaters: temporal trends and response to water chemistry. Velle, G., Telford, R.J., Curtis, C., Eriksson L., Fjellheim A., Frolova M., Fölster J., Grudule N., Halvorsen G.A., Hildrew A., Hoffmann A., Indriksone I., Kamasová L., Kopáček J., Orton S., Krám P., Monteith D.T., Senoo T., Shilland E.M., Stuchlík E., Wiklund M.L., de Wit, H., Skjelkvaale B.L.

ICP Waters Report 113/2013 - Biological intercalibration: Invertebrates 1612. Fjellheim, A., Johannessen, A. and Landås, T.S.

ICP Waters Report 112/2013 Proceedings of the 28th Task Force meeting of the ICP Waters Programme in Verbania Pallanza, Italy, October 8 – 10, 2012. Skjelkvåle, B.L., Wathne, B.M., de Wit, H. and Michela Rogora (eds.)

**Scientific paper**

Øyvind A. Garmo and others. 2014. Trends in Surface Water Chemistry in Acidified Areas in Europe and North America from 1990 to 2008. *Water Air & Soil Pollution*, 225: 1880

**Other**

Contribution to report from Saltsjöbaden V workshop: “Saltsjöbaden V - Taking international air pollution policies into the future” (see [www.saltsjobaden5.ivl.se/](http://www.saltsjobaden5.ivl.se/))

**Website:** [www.icp-waters.no](http://www.icp-waters.no).

**IV. ICP Vegetation****Scientific papers**

Harmens, H., Schnyder, E., Thöni, L., Cooper, D.M., Mills, G., Leblond, S., Mohr, K., Poikolainen, J., Santamaria, J., Skudnik, M., Zechmeister, H.G., Lindroos, A.-J., Hanus-Ilmar, A. (Submitted). Relationship between site-specific nitrogen concentrations in mosses and measured wet bulk atmospheric nitrogen deposition across Europe. *Environmental Pollution*.

Pleijel, H., Danielsson, H., Simpson, D., Mills, G. (2014). Have ozone effects on carbon sequestration been over-estimated? A new biomass response function for wheat. *Biogeosciences Discussions* 11: 5511-5531.

Schröder, W., Pesch, R., Schönrock, S., Harmens, H., Mills, G., Fagerli, H. (2014). Mapping correlations between nitrogen concentrations in atmospheric deposition and mosses for natural landscapes in Europe. *Ecological Indicators* 36: 563-571.

Schröder, W., Pesch, R., Hertel, A., Schönrock, S., Harmens, H., Mills, G., Ilyin, I (2013). Landscape-specific correlation between atmospheric depositions of Cd, Hg and Pb and their concentrations in mosses across Europe. *Atmospheric Pollution Research* 4: 267-274.

Simpson, D., Arneth, A., Mills, G., Solberg, S., Uddling, J. (Submitted). Ozone - the persistent menace; interactions with the N cycle and climate change. *Current Opinion in Environmental Sustainability*.

**Reports/leaflets/manuals**

Harmens, H., Mills, G. (Eds.). Air pollution: Deposition to and impacts on vegetation in (South-)East Europe, Caucasus, Central Asia (EECCA/SEE) and South-East Asia. ICP Vegetation Programme Coordination Centre, CEH Bangor, UK. ISBN: 978-1-906698-48-5.

Harmens, H., Mills, G., Hayes, F., Sharps, K., Norris, D. and the participants of ICP Vegetation. (2014). Air pollution and vegetation. ICP Vegetation annual report 2013/2014. ICP Vegetation Programme Coordination Centre, CEH Bangor, UK.

Mills, G. (Ed) (2014). Update of Chapter 3 ‘Mapping critical levels for vegetation’ of the ‘Manual on methodologies and criteria for modelling and mapping critical loads and levels and air pollution effects, risks and trends’. UNECE Convention on LRTAP.

Mills, G., Sharps, K., Harmens, H. (2014). Leaflet on ozone leaf injury symptoms – ‘Have you seen these ozone injury symptoms? With link to smart-phone App and ICP Vegetation website.

ICP Vegetation, 2014. Heavy metals, nitrogen and POPs in European mosses: 2015 survey. Monitoring manual. Moss Survey Coordination Centre, JINR, Dubna, Russian Federation and ICP Vegetation Programme Coordination Centre, CEH Bangor, UK. <http://www.jinr.ru> and <http://icpvegetation.ceh.ac.uk>

### **Task Force meeting, book of abstracts**

Harmens, H., Mills, G., Hayes, F., Castell, J.-F., Bethenod, O., Repelling, A., Leblond, S., Galsomies, L., Formisano, S. (2014). Programme and abstracts of the 27th Task Force Meeting of ICP Vegetation, 28-30 January 2014, Paris, France.

**Website:** <http://icpvegetation.ceh.ac.uk>.

## **V. ICP Integrated Monitoring**

### **Published scientific papers based on international ICP IM work**

Bringmark, L., Lundin, L., Augustaitis, A., Beudert, B., Dieffenbach-Fries, H., Dirnböck, T., Grabner, M-T., Hutchins, M., Kram, P., Lyulko, I., Ruoho-Airola, T. and Vana, M. (2013). Trace metal budgets for forested catchments in Europe – Pb, Cd, Hg, Cu and Zn. *Water Air Soil Pollution* 224:1502-16; doi: 10.1007/s11270-013-1502-8.

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Vuorenmaa, J., Kleemola, S., Forsius, M., Lundin, L., Augustaitis, A., Beudert, B., de Wit, H., Frey, J., Indriksone, I., Minerbi, S., Krám, P., Vána, M. (2013). Sulphur and nitrogen input-output budgets at ICP Integrated Monitoring sites in Europe. In: *ICP Integrated Monitoring 22nd Annual Report 2013. Reports of the Finnish Environment Institute 25/2013*, pp. 35-43. ISBN 978-952-11- 4207-9 (PDF). Available at [www.syke.fi/nature/icpim](http://www.syke.fi/nature/icpim).

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