



**Centre for
Ecology & Hydrology**

NATURAL ENVIRONMENT RESEARCH COUNCIL



32nd Task Force Meeting

18 - 21 February 2019

Targoviste, Romania



Valahia University of Targoviste

Programme



Organizers:

**ICP Vegetation Programme Coordination Centre
Centre for Ecology & Hydrology
Bangor, UK**

Dr. Harry Harmens, Dr. Felicity Hayes, Dr. Katrina Sharps

Local organizers:

Valahia University of Targoviste

*Assoc. Prof. Claudia Stihi, Prof. Cristiana Radulescu,
Assoc. Prof. Calin D. Oros, Lect. Oana Catalina Bute,
Dr. Ioana Daniela Dulama, Dr. Sorina Geanina Stanescu,
Madalina Maria Oachesu, Ioan Alin Bucurica*

Local financial support is provided by



Targoviste City Municipality



Valahia University of Targoviste

PROGRAMME

Venue: International Conference Center - Valahia University of Targoviste, 39 Maior Ion Alexandrescu Street, 130021, Targoviste

Monday 18th February, 2019

17:00 – Registration at International Conference Center

18:30 – Welcome reception and putting up posters

Tuesday 19th February, 2019

- *Plenary sessions in the red room*
- *Ozone sessions in the blue room*
- *Moss survey sessions in the green room*
- *Poster session (International Conference Center Hall)*

08:00 Late registration and putting up posters

Session 1: 9:00 – 10:45 Plenary Chair: **Claudia Stihl**

09:00 Welcome address + presentation

Cristinel Mortici – Dean of Faculty of Sciences and Arts, Valahia University of Targoviste.

Dorela Mirica – Delegate of Environmental Protection Agency, Dambovitza County.

09:20 *Harry Harmens et al.* – Achievements of the ICP Vegetation in 2018 and future workplan (2019-2021).

09:45 *Marina Frontasyeva et al.* – Merits and drawbacks of passive moss biomonitoring used to study atmospheric deposition: Results of moss survey 2015/16.

10:05 *Klaudia Borowiak et al.* – Air monitoring system in selected countries and possibilities to start air biomonitoring of ozone and heavy metals.

10.35 General discussion

10:45 – 11:30 Coffee/tea and poster viewing (with authors at poster)

Session 2: 11:30 – 13:00 (Two parallel sessions: **Ozone** and **Moss survey**)

Session 2a: **Ozone - Ozone flux modelling and the role of soil moisture**
Chair: **Rocio Alonso**

11:30 *David Simpson* – Modelling ozone fluxes with the EMEP MSC-W Model – Status and future development.

- 11:50 *Ignacio González Fernández et al.* – Modelling the influence of soil moisture on ozone dose under water-limited climatic conditions.
- 12:10 *Gina Mills, Katrina Sharps et al.* – Closing the global ozone yield gap: Quantification and co-benefits for multi-stress tolerance.
- 12:30 *Harry Harmens et al.* – Can deficit irrigation mitigate impacts of ozone on wheat yield?
- 12:50 General discussion

Session 2b: Moss survey - Trends

Chair: Marina Frontasyeva

- 11:30 *Konstantin Vergel et al.* – Moss biomonitoring in Russia: overview of the 2015/2016 moss survey.
- 11:50 *Gergana Hristozova et al.* – Atmospheric deposition trends in Bulgaria over a 20-year period of participation in the European moss survey programme (1995/6-2015/6).
- 12:10 *Pranvera Lazo et al.* – The metal atmospheric deposition in Albania (2010 – 2015 moss survey).
- 12:30 *Zaida Kosonen et al.* – Anthropogenic vs. geogenic origin of elements in Swiss moss samples between 1995 and 2015.
- 12:50 General discussion

13:00 – 14.00 Lunch (Hotel Nova Restaurant)

Session 3: 14:00 – 15:30 (Two parallel sessions: Ozone and Moss survey)

Session 3a: Ozone – Impacts on food production

Chair: Katrina Sharps

- 14:00 *Håkan Pleijel et al.* – Ozone impact on wheat in Europe, Asia and North America - a comparison.
- 14:20 *Jérôme Schneuwly et al.* – Estimation of ozone induced yield losses of wheat and potato in Switzerland using the DO₃SE model.
- 14:40 *Felicity Hayes et al.* – Dose-response relationships for African crops.
- 15:00 Some short poster presentations and general discussion. For list of ozone poster presentations, see final page.

Session 3b: Moss survey – Biomonitoring with mosses and lichens

Chair: Cristiana Radulescu

- 14:00 *Julian Aherne et al.* – Moss as a biomonitor of atmospheric microplastic deposition.
- 14:20 *Stefano Loppi* – Mosses and lichens as bioaccumulators of airborne elements: What do we really measure? In addition, are these biomonitors suitable in environmental forensics?
- 14:40 *Carmen Iacoban et al.* – Nitrogen deposition in Romania. Levels determined within ICP Vegetation and ICP Forests.

15:00 *Luca Paoli et al.* – Air pollution still limits epiphytic recolonization: Heavy metals and ecophysiological parameters in threatened forest macrolichens of Central Europe.

15:20 General discussion

15:30 – 16.00 Coffee/tea and poster viewing

Session 4: 16:00 – 17:30 (Two parallel sessions: Ozone and Moss survey)

Session 4a: Ozone – Discussion session (1) Chair: Felicity Hayes

16:00 Sabine Braun – Uncertainty analysis of ozone flux with phenological models.

16:20 General discussion on new developments, future ozone work and outreach activities including:

- Monitoring ozone impacts on vegetation, including contributions of EU Member States to National Emission Ceilings Directive;
- Photosynthesis-based DO3SE model, incorporation of ozone impacts in crop growth models, damage functions for trees in terrestrial biosphere models;
- New ozone research (e.g. pasture quality, impacts on pollination, ozone removal by vegetation in urban areas, BVOCs);
- ICP Vegetation Asia;
- Interactions with climate change.

Some short poster presentations will be included here on relevant subjects mentioned above. For a list of ozone poster presentations, see final page.

Session 4b: Moss survey – Results of recent surveys Chair: Hilde Uggerud

16:00 *Inga Zinicovscaia et al.* – Moss biomonitoring of atmospheric deposition study of minor and trace elements in the Republic of Moldova.

16:20 *Gevorg Tepanosyan et al.* – Moss trace element contents and spatial distribution peculiarities in Armenia.

16:40 *Omar Chaligava et al.* – Atmospheric deposition study of major and trace elements in Georgia based on moss analysis.

17:00 *Chrysoula Betsou et al.* – Mosses as biomonitors of trace elements in Greece.

17:20 General discussion.

Wednesday 20th February, 2019

Session 5: 08:30 – 10:30 (Two parallel sessions: Ozone and Moss survey)

Session 5a: Ozone – Interactions with nitrogen Chair: Håkan Pleijel

08:30 *Håkan Pleijel* – Introduction and progress with data collation literature?

08:40 *Yasutomo Hoshika et al.* – Nutritional availability changes ozone dose-response relationships in poplars.

- 09:00 *Rocio Alonso et al.* – Sensitivity of Mediterranean mountain top herbaceous communities to ozone and nitrogen deposition.
- 09:20 *Victoria Bermejo et al.* – Ozone and nitrogen effects on fungal wheat diseases.
- 09:40 General discussion on new chapters for Scientific Background Document B, further developments regarding ozone critical levels and potential contributions to review of empirical nitrogen critical loads (with ICP Modelling & Mapping).

Session 5b: Mosses – Preparations 2020 survey **Chair: Harry Harmens**

- 08:30 *Alexander Uzhinkiy et al.* – Is it possible to predict heavy metal atmospheric deposition and when it could be useful?
- 08:50 *Alexander Uzhinkiy et al.* – Mobile application for ICP Vegetation moss sampling sites management.
- 09:10 Discussion on above presentations and preparations for 2020 moss survey:
- Amendments to moss survey biomonitoring protocol;
 - Call for data, data submission and participation;
 - Monitoring in Eastern Europe and beyond (background sites, inclusion of nitrogen, confounding factors);
 - Schedule 2020 survey (learn from past experiences);
 - Depository of past data & data paper;
 - Reporting back decisions & recommendations, future workplan.

10:30 – 11:00 Coffee/tea and poster viewing

Session 6: 11:00 – 13:00 (Two parallel sessions: Ozone and Moss survey)

Session 6a: Ozone – Discussion session (2) **Chair: Felicity Hayes**

- 11:00 *Felix Leung et al.* – Ozone garden: An experiment to examine the harmful effects of urban air pollution on ecosystems in South China.
- 11:20 *Valda Araminiene et al.* – Trends and inter-relationships of ground-level ozone metrics and forest health in Lithuania.
- 11:40 Final general discussions (see session 4a) and feedback to plenary, including future workplan.

Session 6b: Moss survey – Biomonitoring studies **Chair: Julian Aherne**

- 11:00 *Guntis Tabors et al.* – Spatial distribution of heavy metal pollution in moss (*Pleurozium schreberi*) and in soil O horizon in Latvia
- 11:20 *Stefan Fränzle et al.* – Chitin adsorption in environmental monitoring: not an alternative to moss monitoring but a method providing (lots of) bonus material/information.
- 11:40 *Nikolina Gribacheva et al.* – Heavy metal deposition monitoring in a mountain area with local emitters: a case study from Bulgaria.

- 12:00 *Oldřich Motyka* – Proper imputation of sub-limit and missing values in biomonitoring studies.
- 12:20 *Fabrizio Monaci et al.* – Native and transplanted aquatic moss (*Platyhypnidium riparioides*) for assessing long-term metal(loid) impacts from abandoned mines.
- 12:40 General discussion and feedback to plenary.

13:00 – 14:00 Lunch (Hotel Nova Restaurant)

Session 7: 14:00 – 15:30 Final plenary session **Chair: Harry Harmens**

- Reporting back from ozone (Felicity Hayes) and moss survey sessions (Marina Frontasyeva): decisions and actions;
- Medium-term work plan ICP Vegetation 2019 – 2021 and beyond;
- Decisions and recommendations of the 32nd Task Force Meeting;
- 33rd ICP Vegetation Task Force Meeting;
- Other business.

15:30 – 16:00 Coffee/tea and taking down posters

- 16:00** Visit to Chindia Tower and the Royal Court of Targoviste (15 minutes' walk from the International Conference Center)
- 19:30** Conference Dinner at Hotel Nova Restaurant

Thursday 21st February, 2019

Excursion to Bran and Peles Castles in the Carpathians Mountains (Departure from Hotel Nova at 8:30; Arrival at Hotel Nova up to 20:00).

LIST OF POSTERS

OZONE

Author(s)	Title
Araminiene, V. et al.	Ozone impacts on insects
Ashworth, K. et al.	Ozone impacts on respiration and photosynthesis rates in three contrasting forest ecosystems
Calatayud, V. et al.	Project ELEMENTAL: Ozone fluxes in Mediterranean vegetation
Dell'Orso, A., Alonso, R. et al.	DNA integrity and ecophysiological responses of Spanish populations of <i>Ulmus glabra</i> to increasing ozone levels
Dolker, T. & Agrawal, M.	Assessment of two tropical grassland plants i.e. <i>Panicum maximum</i> and
Eghdami, H. et al.	Time series (1998-2015) of ozone flux on forest in Rhineland Palatinate (Germany)
Fusaro L., Salvatori E. et al.	Modelling ozone uptake by urban and peri-urban forest: A case-study in the Metropolitan city of Rome, Italy
Hayes, F. et al.	Evidence of impacts of ozone on ecosystem services of grasslands
Leung, F.P.K et al.	Quantifying the impact of present-day and future tropospheric ozone on crop productivity at global and regional scale using JULES-CROP
Neiryneck, J. & Verstraeten, A.	Ozone deposition over a mixed suburban temperate forest
Paoletti, E., Hoshika, Y. et al.	Towards the definition of epidemiologically-based stomatal-flux critical levels for
Roberts, H.	Do biogenic VOCs protect plant productivity under multiple environmental stress?
Sharps, K. et al.	Smart-phone app for recording incidences of ozone injury on vegetation

Short presentations are given on poster titles in blue.

MOSS SURVEY

Aleksiyenak, Y., Frontasyeva, M.V. et al.	Data interpretation from Belarussian moss surveys using different statistical approaches
Aničić Urošević, M. et al.	Assessment of anomalies in distribution of rare earth elements across Serbia using moss biomonitring
Bekteshi, L., Lazo, P. et al.	Assesment of air quality in Albania based on atmospheric deposition of trace elements in coastal and inland areas
Budka A. et al.	Heavy metal accumulation in <i>Taraxacum officinale</i> L. at urban areas
Bukharina, I.L., Frontasyeva, M.V. et al.	Moss monitoring of trace elements in the Republic of Udmurtia, Russia
Dalelova A.M, Omarova N.M., Frontasyeva M.V.	Investigation atmospheric deposition of heavy metals in north and west region of the Republic of Kazakhstan using the method of moss-biomonitoring
El Shall, A., Bellini, E. et al.	Intracellular response to cadmium in the moss <i>Leptodictyum riparium</i>
Ene, A., Stihl, C. et al.	Nuclear and atomic techniques used for heavy metal pollution investigations in agroecosystems
Frontasyeva M.V., Abdusamadzoda, D. et al.	Air pollution study in different regions of Tajikistan using the moss biomonitring techniques, NAA and AAS
Gorelova S.V., Frontasyeva M.V. et al.	Trends of atmospheric deposition in Central Russia: Tula region (2015-2016)
Koroleva, Y., Bakhriz, B. et al.	PAHs measurements in moss <i>Pleurozium schreberi</i> in Kaliningrad region
Krakovská, A. et al.	Identification of the pollution sources by moss biomonitring in the Upper Silesia region
Madadzada, A., Frontasyeva, M.V. et al.	Atmospheric deposition of trace elements in Guba region (Azerbaijan)
Marku, E. & Nuro, A.	Preliminary study of some organic pollutants in moss and pine needles in Tirana region, Albania
Mehrabova, M.A. et al.	Biomonitoring of air pollution in Azerbaijan
Moraru, S.S., Ene, A. et al.	Relation between land use, industrial activity and metal accumulation in plants
Movsisyan N., Tepanosyan, G. et al.	Estimation of atmospheric fallout radionuclides activity using mosses: Armenia
Nuhuyeva, Sh.S. et al.	Biomonitoring of atmosphere air in important ecotourism regions of Azerbaijan
Qarri, F. et al.	Biomonitoring of toxic metal air pollution using mosses in Albania
Radulescu C. et al.	Microclimatic monitoring and environmental impact assessment on heritage materials of Tropaeum Traiani Monument, Adamclisi
Stihl, C. et al.	Moss biomonitring in Romania as integrated in European surveys: continuity, extending and perspectives
Štrbová, K. et al.	Missing values in biomonitring data: Example from biomonitring survey in Belarus
Svozilík, V. et al.	Verification of the air pollution mathematical modelling results using special monitoring and analytical methods

* *Recommended poster size: A1 (ISO 216)*