Achievements of ICP Vegetation* in 2014 & plans for the future

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ECE/EB.AIR/WG.1/2014/3, 8, 13

33rd Session WGE, 17 – 19 Sept. 2014, Geneva
27th ICP Vegetation TFM, Paris


- 84 experts from 22 countries attended the meeting

- 28 January: one-day ozone critical levels workshop to review current status and make recommendations for amendments to Chapter 3 of the Modelling and Mapping Manual: ‘Mapping critical levels for vegetation’. Discussion and recommendation finalised during TFM.
No changes to the existing critical levels

Annexes:
- Parameterisation ozone flux model for grapevine, maize, soybean, sunflower, poplar
- Revised parameterisation wheat Mediterranean
- References to published flux models for local scale application

Text related to integrated assessment modelling (Section III.5.2.6) updated:
- New terminology for the simplified generic ozone flux – **POD$_Y$IAM** will replace **POD$_Y$gen**

**POD$_Y$ = Phytotoxic Ozone Dose above a flux threshold of $Y$ nmol m$^{-2}$ s$^{-1}$**
For use in scenario analysis and optimisation runs within GAINS to provide indication of potential effects on wheat yield under non-limiting water availability

- Two parameterisations flux model: 1) Northern & Central Europe, 2) Mediterranean areas (as defined in the M&M Manual)

- New POD$_3$IAM – effect relationship for use in integrated assessment modelling at European scale only (for effects of ozone on wheat, 90 d exposure period)

- Critical level: 8 mmol m$^{-2}$ (representing 5% yield decline)
ICP Vegetation, March 2014

With contributions from:

- **CCE** (critical loads data & maps)
- **EMEP/MSC-West** (ozone flux and concentration)
- **EMEP/MSC-East** (HM and POPs data and maps)
- **SEI-York** (South-East Asia)

*Minor text amendments doc. 13*

Report will be translated into Russian too.
New Smart phone App (1.1.17(a))

Recording incidences of leaf ozone injury

Purpose:
(1) Quantify extent of damage in changing profile
(2) Validate risk maps

Available at: http://icpvegetation.ceh.ac.uk
Smart phone App. set up

• Registration
• Level of experience
• Permission to use data
• Date and location
• Broad vegetation type & species (crops, trees, grassland, heathland, wetland & coastal)
• Upload photos of damage
• Symptoms of ozone injury
• Evidence of other injury
• Weather
• Ozone pollution (if known)
Species include:
- Snap bean
- Cutleaf coneflower
- Common or Tall milkweed

Ozone leaf injury brochure (1.1.17(a))

Have you seen these ozone injury symptoms?

If you have, let us know using our new smartphone App and website http://icpvegetation.ceh.ac.uk

Available in English and Russian

Trees

- Eastern white pine (Pinus strobus)
- Goat willow (Salix caprea L.)
- Wayfaring tree (Viburnum lantana)
- Ash (Fraxinus excelsior)
- Sycamore (Acer pseudoplatanus)
- Common Alder (Alnus glutinosa)

Crops

- Wheat (Triticum aestivum)
- Soybean (Glycine max)
- Potato (Solanum tuberosum)
- Grape (Vitis vinifera)

In collaboration with ICP Forests Expert Panel on Ambient Air Quality

33rd Session WGE, 17 – 19 Sept. 2014, Geneva
• How will climate change alter the threat of air pollution on ecosystems?
• Measurements, models, innovative risk assessment and the economic implications
• Focus on N and O₃ and their interaction with other pollutants
• ‘New’ experiments, and existing datasets from current/recent experiments across Europe

28 Sept – 2 Oct: Annual ECLAIRE Meeting, Budapest, Hungary

Integrated risk assessment and policy tools, including (economic) valuation
Outreach to Asia (1.1.10(c))

- ‘Ozone and Plants’ conference, 18 – 21 May, Beijing, China (Chinese Academy of Sciences, IUFRO, ICP Vegetation, TF HTAP)
- 102 experts, 17 countries; China active in research ozone impacts on vegetation

**Important recommendations:**

- Communicate to stakeholders – such as crop breeders, farmers and policy makers – the threat of ozone pollution to food security, carbon sequestration and other ecosystem services affecting human wellbeing
- Collate further field-based evidence for ozone impacts on vegetation and develop critical levels under Asian conditions using Asian species/cultivars

Further collaboration with HTAP

- Flux-based ozone impacts on vegetation in next HTAP assessment:
  - Global maps: potential sensitivities of vegetation using fluxes
  - Compare with concentration-based methods for crops & forests
  - What is the robustness of impacts assessment methodology used in Europe or USA for regions such as Asia?

- Discussing outlines for collaborative papers
Annual activities:

- Report on supporting evidence ozone impacts on vegetation (1.1.17(a))
- Report on progress with the moss survey 2015/2016 (1.1.19)
- Contributions to common workplan items of the WGE (1.1.10)

2015:

- Report on implications of rising background ozone for vegetation in Europe (1.1.17(d)) – feed into WGE trends report
- Report on the interacting effects ozone and N and climatic stresses on vegetation (1.1.17(b))

Tentatively for 2016:

- Report on field-based evidence of ozone impacts on vegetation
- Report on ozone impacts on biodiversity
- Ozone critical levels workshop
Medium-term workplan (2)

**Tentatively for 2017:**
- Report on revised ozone risk assessments methods
- Revision of Chapter 3 of the Modelling and Mapping Manual

28th ICP Vegetation Task Force meeting, 3 – 5 February 2015, Rome, Italy

31st ICP Modelling and Mapping Task Force meeting, 25th CCE workshop, 20-23 April 2015, Zagreb, Croatia, with session on ozone and nitrogen interaction impacts on vegetation

33rd Session WGE, 17 – 19 Sept. 2014, Geneva
Involvement EECCA countries (1.1.10(b))

- Translation reports and brochures in Russian
- New Moss Survey Coordination Centre: Joint Institute for Nuclear Research (JINR), Dubna, Russian Federation. **Lead: Marina Frontasyeva**

For further details: see Annual Report 2013/2014

[http://icpvegetation.ceh.ac.uk](http://icpvegetation.ceh.ac.uk)