

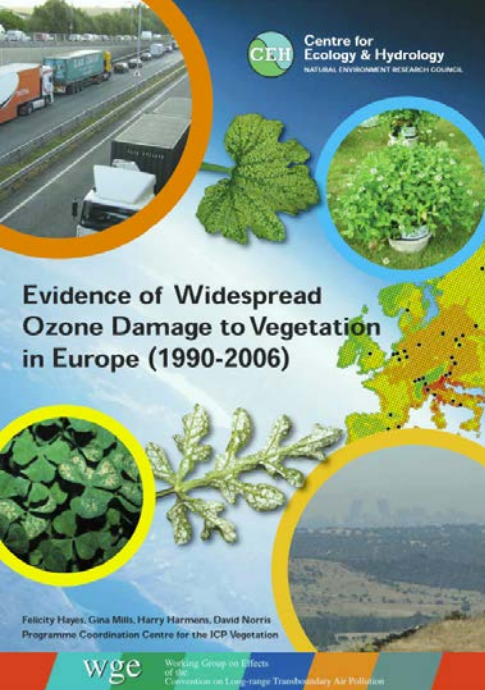


New ICP Vegetation smart-phone App for recording incidences of ozone injury on vegetation

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Centre for Ecology & Hydrology, UK

With financial support from Department for Environment, Food and Rural Affairs (Defra), Natural Environment Research Council (NERC), Trust Fund (UNECE)



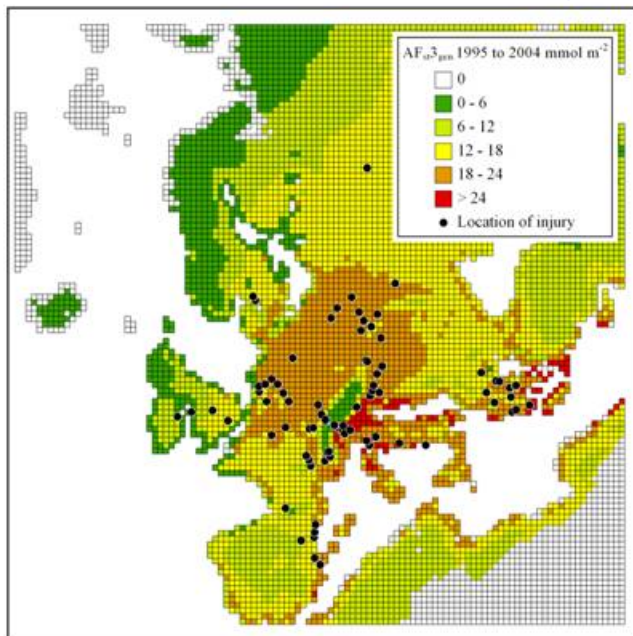
ICP Vegetation 'Evidence Report'

Hayes et al., 2007; Mills et al., 2011: Global Change Biology

Over 500 records of ozone-induced damage in ambient air in 16 European countries:

- ☐ There is widespread occurrence of ozone damage to crops and (semi-)natural vegetation across Europe
- ☐ Flux-based risk assessment better predictor of effects

Flux-based ozone risk map



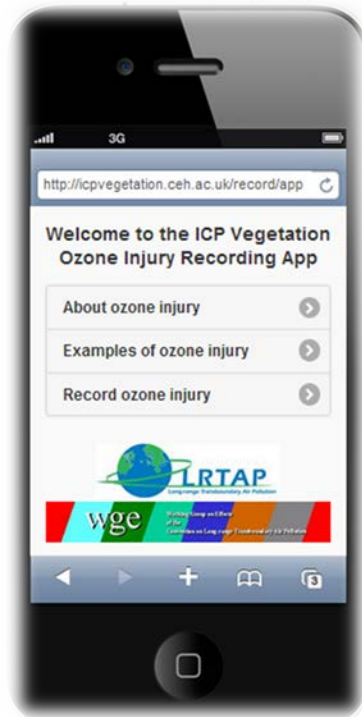
Impact on LRTAP Convention policy (ECE/EB.AIR/96, paragraph 23d):

- ☐ Flux-based method recommended for Protocol Revision and now included in integrated assessment modelling
- ☐ Impacts of ozone on vegetation to be considered in addition to health impacts

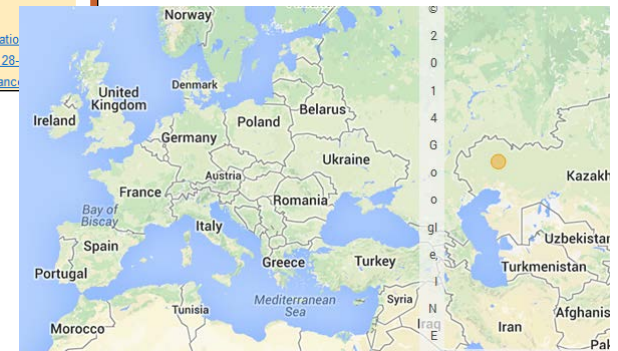
New Smart phone App (<http://icpvegetation.ceh.ac.uk>)

Recording incidences of leaf ozone injury

Smart-phone App
linked to ICP
Vegetation web site



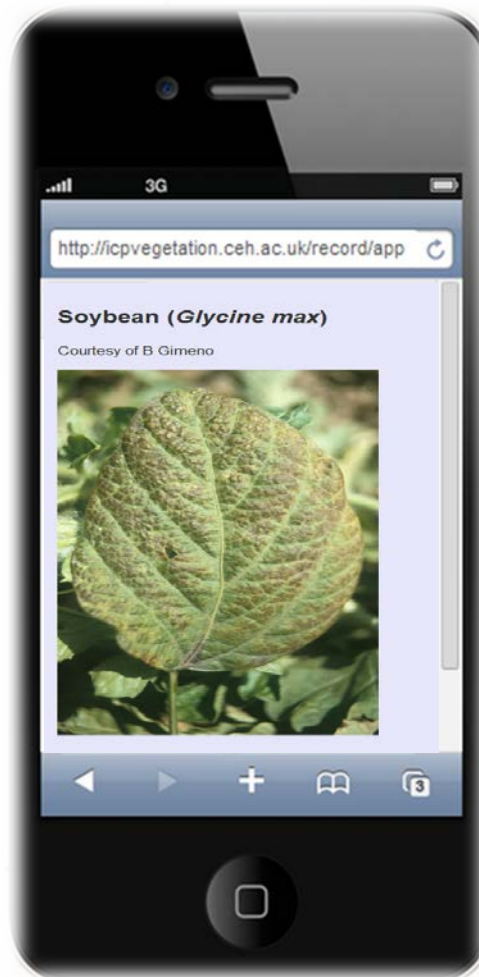
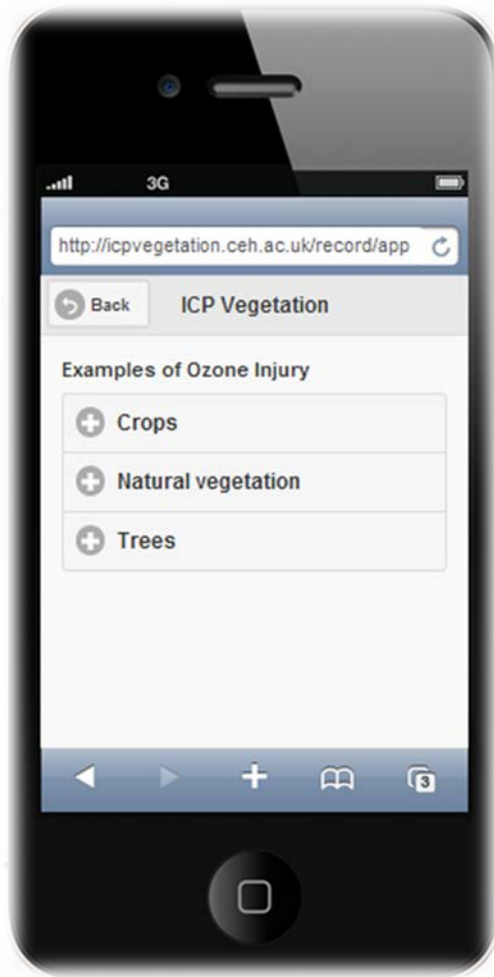
Location on interactive map



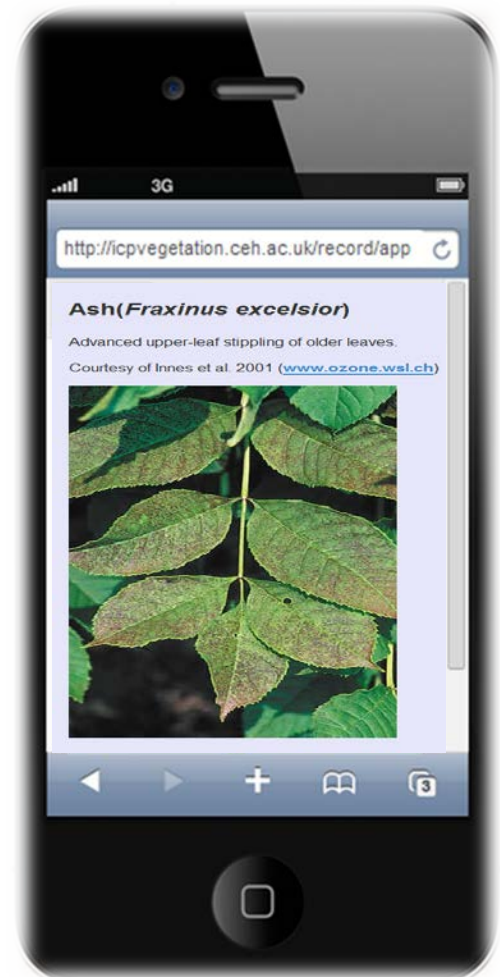
Purpose:

- (1) Quantify extent of damage in changing profile
- (2) Validate risk maps
- (3) Possibility of quantifying aesthetic effects of ozone

Examples of ozone injury



Soybean



Ash

Ozone injury brochure*

* Available in English and Russian

Trees

Crops



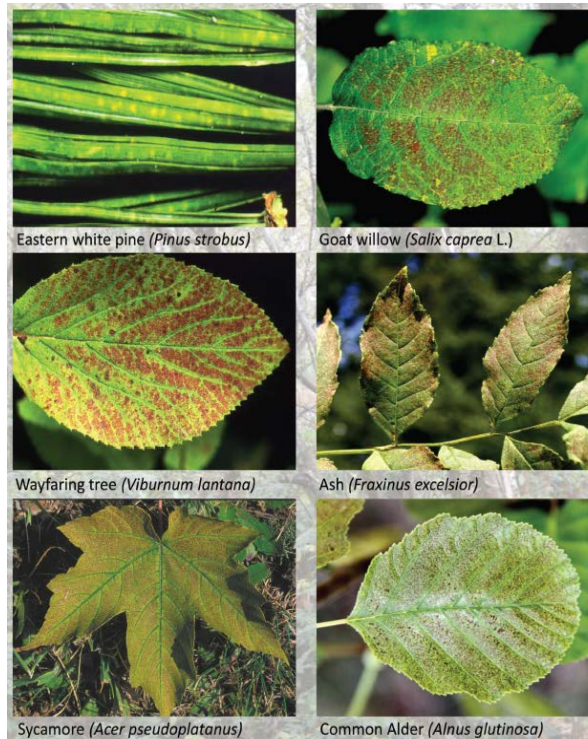
CEH Centre for Ecology & Hydrology
NATURAL ENVIRONMENT RESEARCH COUNCIL

LRTAP
Long Range Transboundary Air Pollution

Have you seen these ozone injury symptoms?

If you have, let us know using our new smart-phone App and website
<http://icpvegetation.ceh.ac.uk>

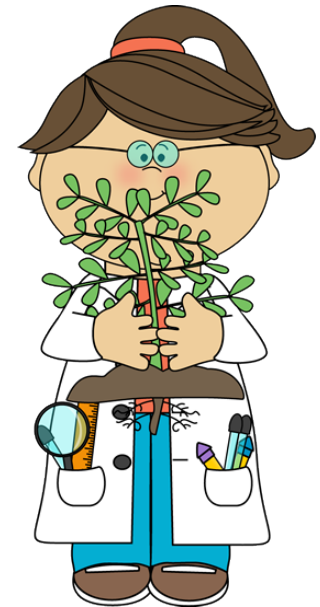
wge Working Group on Effects of the Convention on Long-range Transboundary Air Pollution



In collaboration with ICP Forests Expert Panel on Ambient Air Quality

Smart phone App: Step by Step

- Go to website: <http://icpvegetation.ceh.ac.uk>
- Registration (or log in)
- Asking for level of experience
 - No previous knowledge
 - Experience of recognising plant diseases and insect damage
 - Ozone effects specialist with < 2 years experience
 - Ozone effects specialist with > 2 years experience





Smart phone App: Step by Step

- Asking for permission to use data
 - Research purposes only, including exact location
 - Research purposes only, including location as grid square
 - Research purposed only, excluding exact location or grid square

After registering, you can:

- Download the App (link on Record home page)
- Or fill in online form
- Also use the App offline

Vegetation type and species



- Crops
- Trees
- Grassland
- Heathland
- Wetland and coastal

Leaf injury symptoms

- Upload photos of injury, then answer the following questions:



Colour?



In between veins?



Which leaf surface?



Older leaves more affected?

- ☐ Is there evidence of other damage, for example pests or diseases?

Additional information

- Weather

- In the last week, max. temp has been on average:
<20 °C, 20-30°C, >30°C?



- In the last week, has there been rain on:
0 days, 1-3 days, >3 days?



- Ozone pollution?

- What was the maximum O₃ concentration in the last week?
(<50ppb, 50-80ppb, >80ppb)

- On how many days did the O₃ concentration exceed 50ppb?
(0, 1-3, >3)

Recording summary

International Cooperative Programme on Effects of Air Pollution on Natural Vegetation and Crops

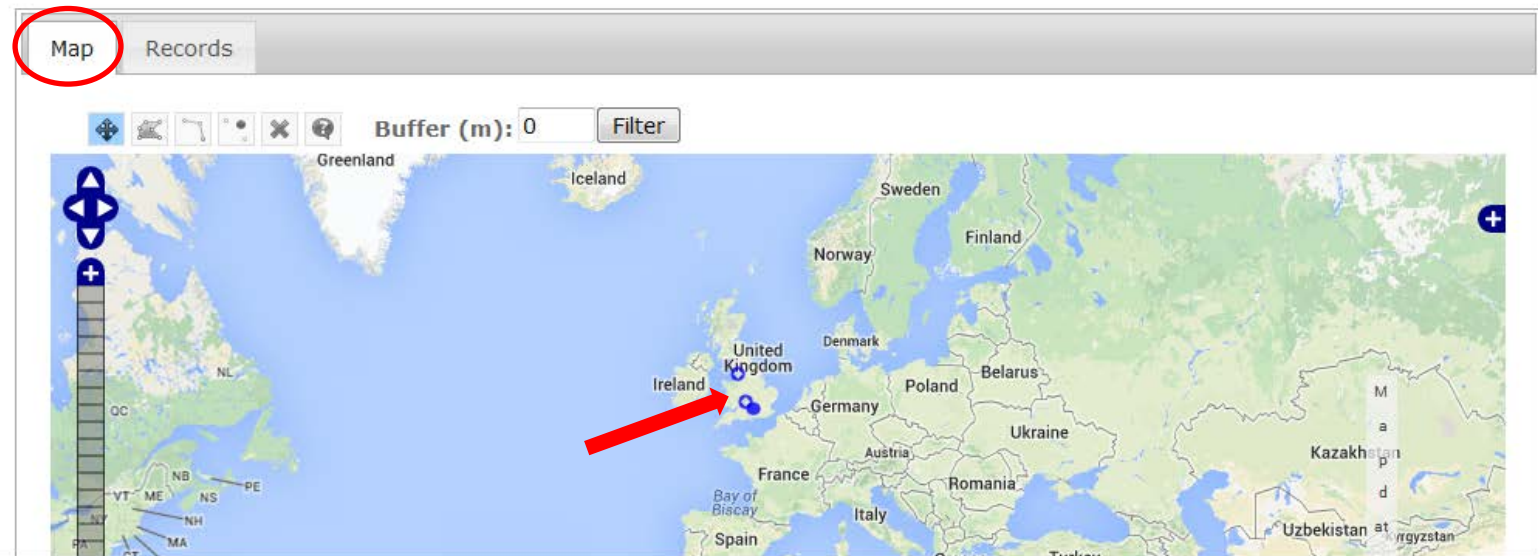


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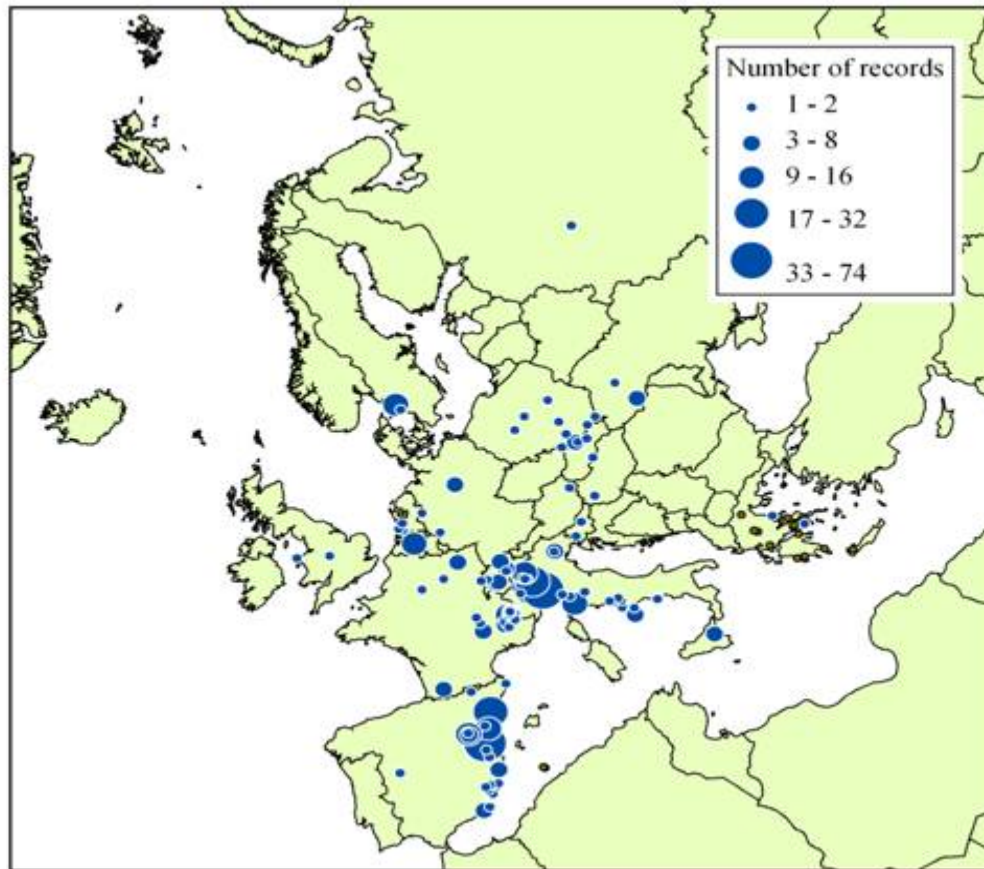
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Recording Summary

This is a summary of data collected by the Ozone Injury survey. If you have just submitted records, please note that it can take a few minutes for your records to appear on the reports.



Update 'Evidence report' in 2016



Locations of records of visible leaf injury attributed to ozone on crops, shrubs and (semi-) natural vegetation (Hayes et al., 2007)

- Add to field-based evidence of ozone impacts on vegetation globally and update 'Evidence report' in 2016
- 2014: experts, 2015: wider general public

Thank you for your attention!