

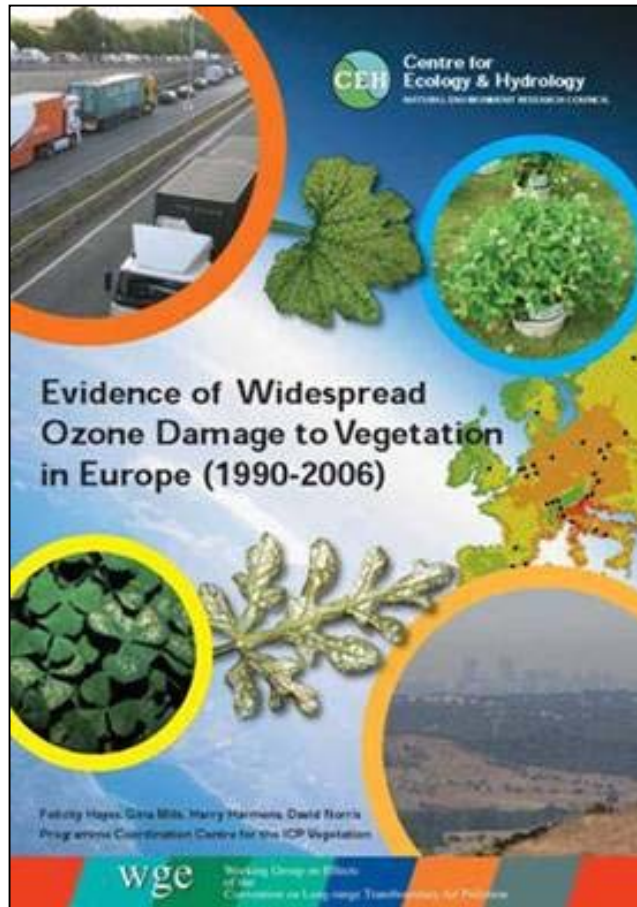


New ICP Vegetation smart-phone App for recording incidences of ozone injury on vegetation

Katrina Sharps, Gina Mills, Jim Bacon*, Harry Harmens, Felicity Hayes

CEH Bangor, *CEH Lancaster

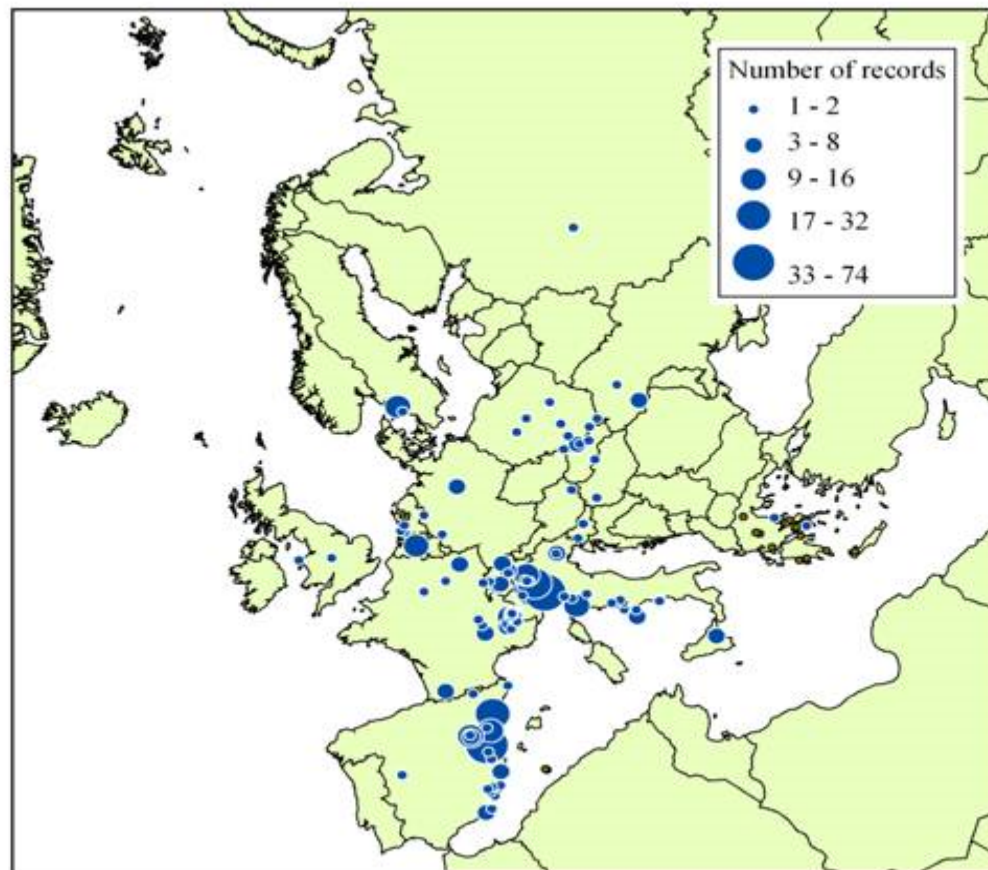
ICP Vegetation 'Evidence Report'



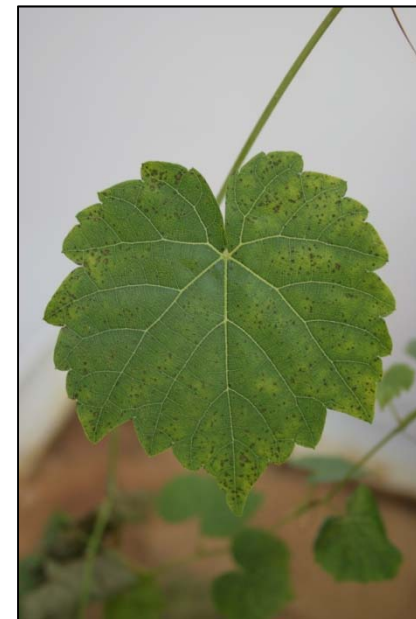
Hayes et al., 2007. CEH Bangor.

- Over 500 records of visible injury in ambient air
- Records from 16 European countries
- 30 crop species including bean, potato, onion, watermelon, grapevine, from 12 countries
- Approx 80 species of (semi-)natural vegetation, from 14 countries

Records of ozone injury



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



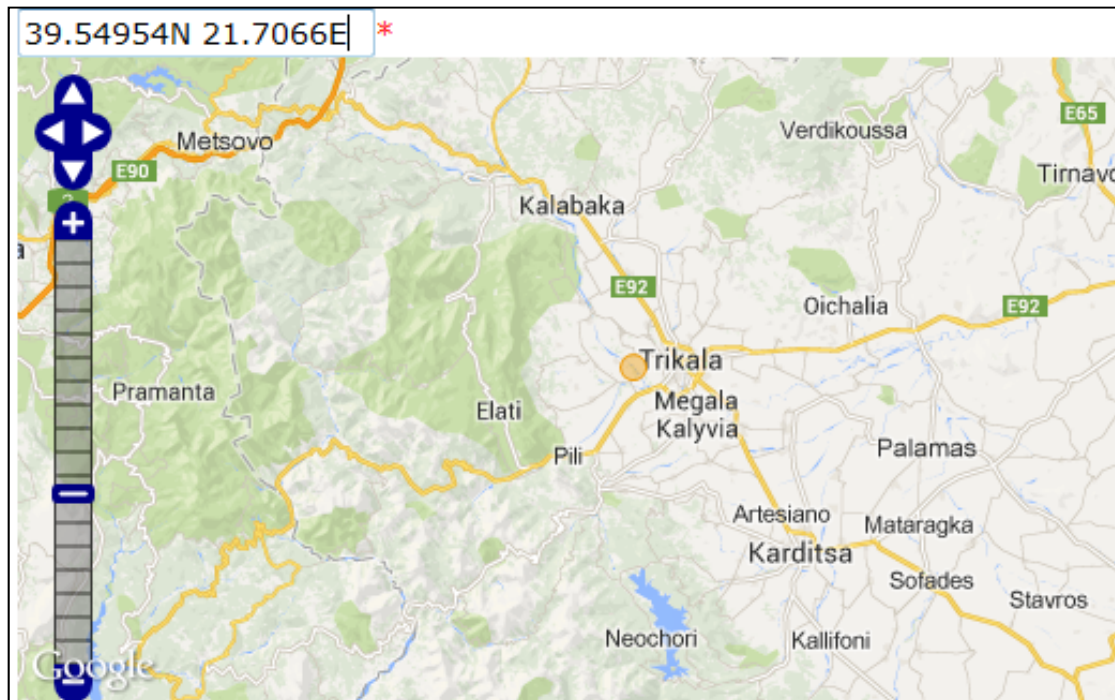
New smart phone App



- Web-App recording system
- Suitable for iPhones and Android phones
- Downloaded from ICP Vegetation web-page

New smart phone App

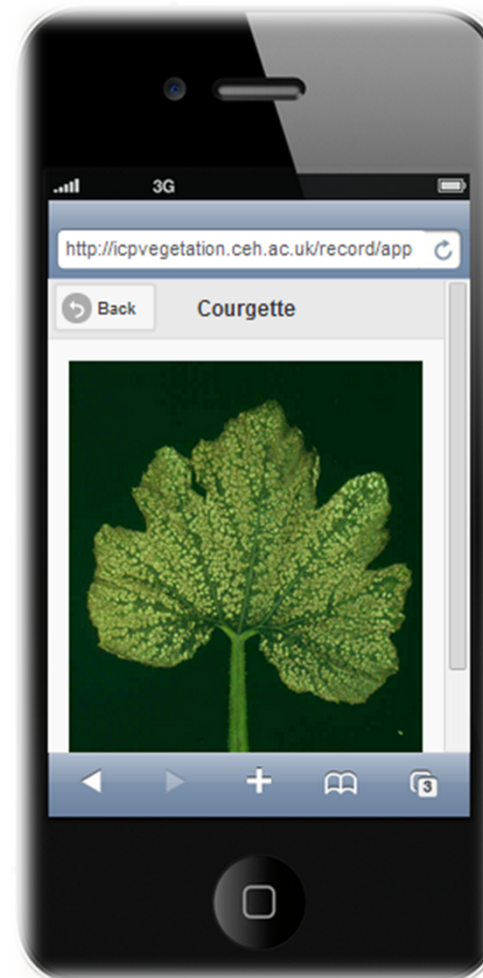
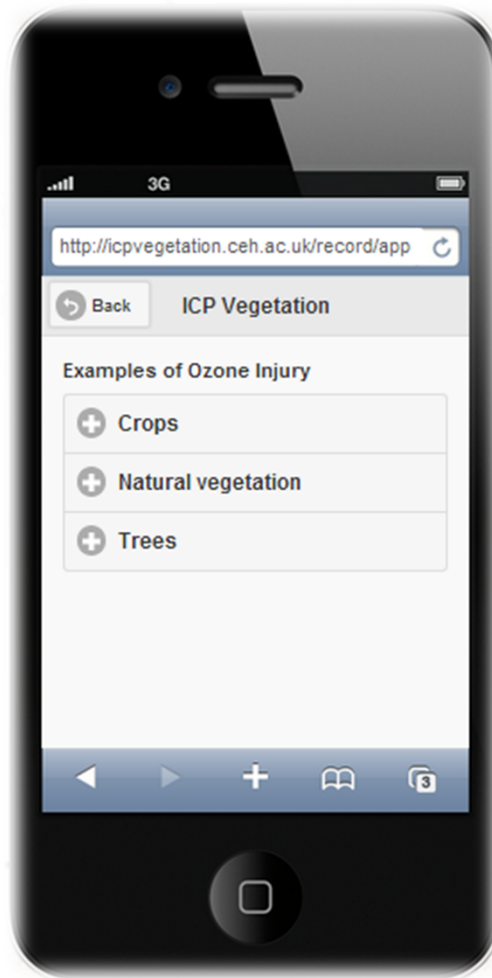
Location



Photos

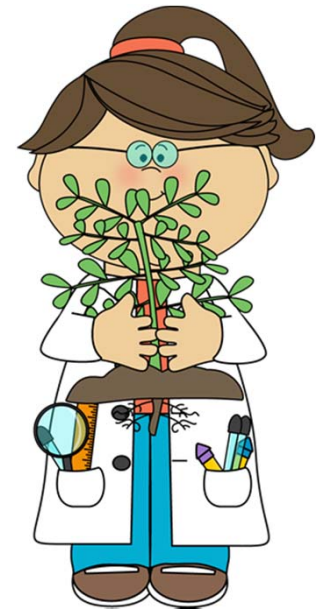


Examples of ozone injury



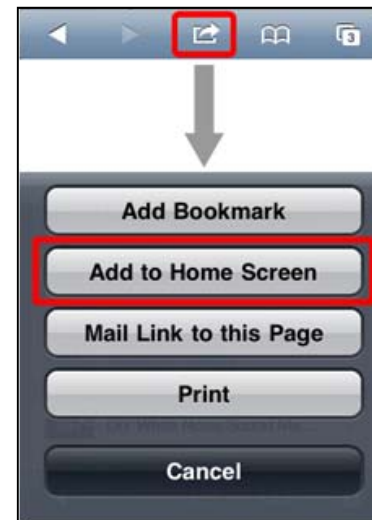
Smart phone App: Step by Step

- Go to website:
<http://icpvegetation.ceh.ac.uk/record/index>
- Registration (or log in)
- 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

- Permission to use data
 - Research purposes only, including exact location
 - Research purposes only, including location as 50 by 50km grid sq
 - Research purposed only, excluding exact location or grid square
- Download the App ('Mobile App' from Record menu)
- Or fill in online form



Smart phone App: Step by Step



- Date and location



Vegetation type and species



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

Leaf injury symptoms

- Upload photos, then:



Colour?



Interveinal?



Surface of the leaf?



Older leaves more affected?

Leaf injury symptoms

Evidence of:



Red spider mites

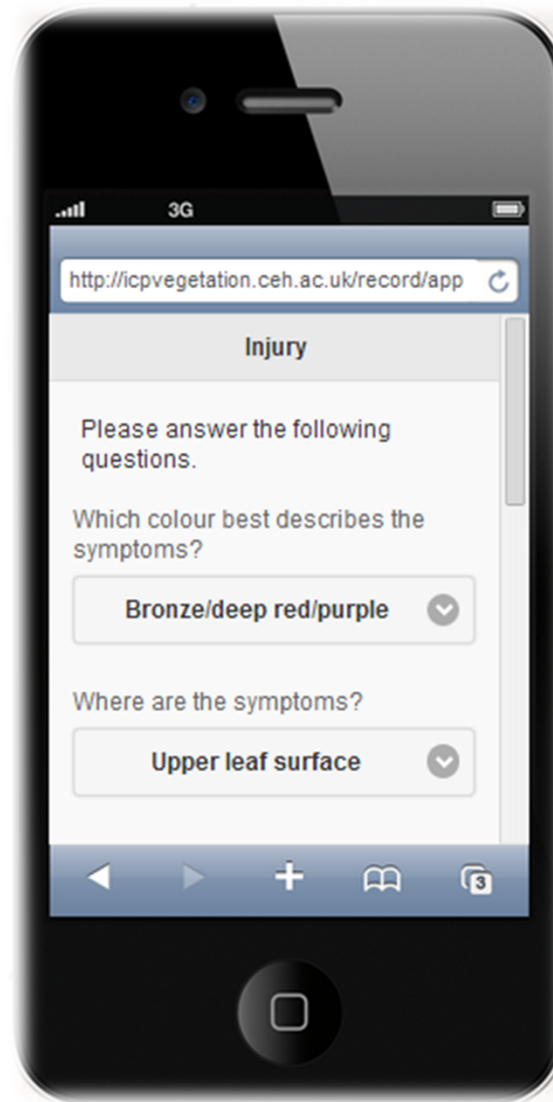


Powdery mildew (ash)



Fungal disease (tomato)

Recording leaf injury symptoms



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

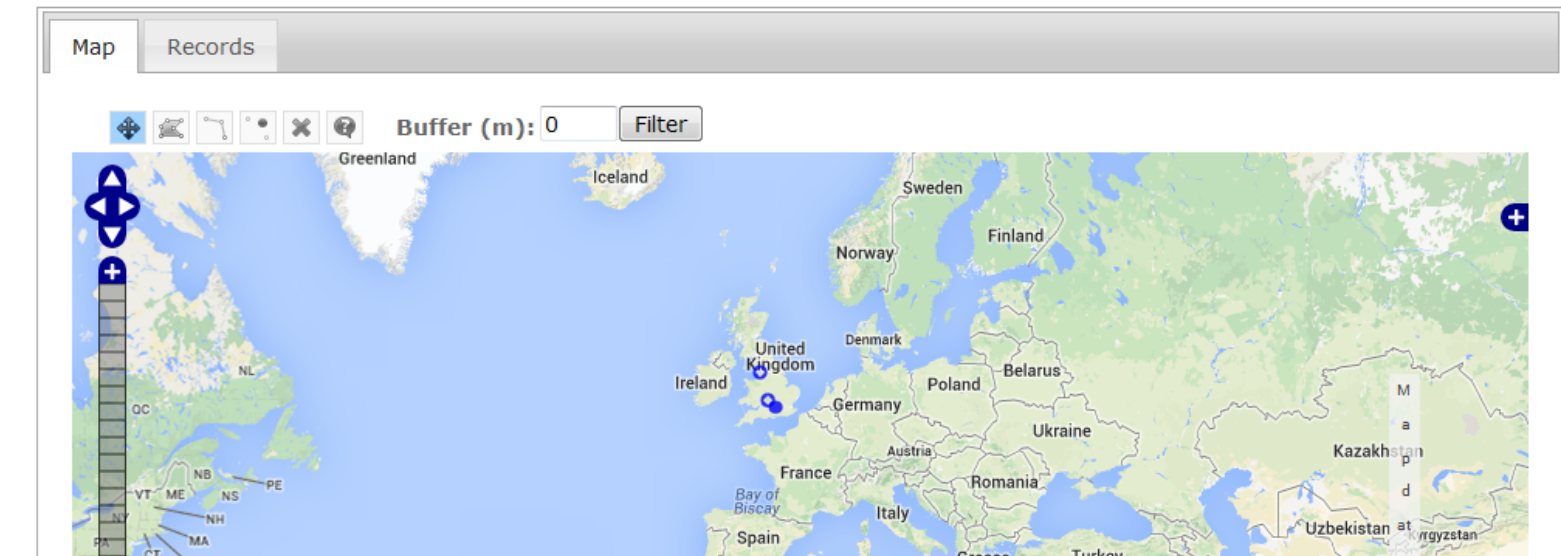


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Recording Summary

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.




Get involved!


Available for the use of participants during the forthcoming growing season



<http://icpvegetation.ceh.ac.uk/record/index>


Ozone injury brochure

 Centre for Ecology & Hydrology
NATURAL ENVIRONMENT RESEARCH COUNCIL

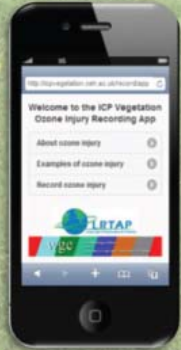
 LRTAP
Long-range Transboundary Air Pollution




**Have you seen these
ozone injury symptoms?**

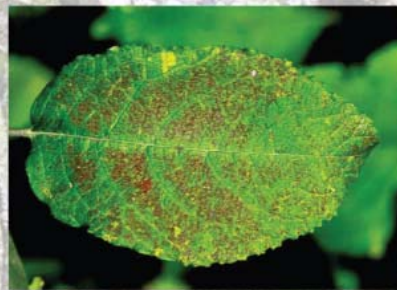



If you have, let us know
using our new smart-
phone App and website
<http://icpvegetation.ceh.ac.uk>





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



Eastern white pine (*Pinus strobus*)



Goat willow (*Salix caprea* L.)



Wavfaring tree (*Viburnum lantana*)


Ash (*Fraxinus excelsior*)


Wheat (*Triticum aestivum*)


Soybean (*Glycine max*)


Potato (*Solanum tuberosum*)


Grape (*Vitis vinifera*)

Acknowledgements

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Thank you for your attention!