

# Tracing air pollution and climate change effects on forest ecosystems: trend and risk assessments



5<sup>th</sup> ICP Forests Scientific Conference  
10-12 May 2016 - Luxembourg

Abstracts



# **Tracing air pollution and climate change effects on forest ecosystems: trend and risk assessments**

5<sup>th</sup> ICP Forests Scientific Conference  
10–12 May 2016 – Luxembourg

Abstracts

## **ViburNeT – The *Viburnum lantana* ozone biological response Network in Trentino, Italy\***

*Elena Gottardini<sup>1</sup>, Fabiana Cristofolini<sup>1</sup>, Antonella Cristofori<sup>1</sup>, Marco Ferretti<sup>2</sup>*

<sup>1</sup>Fondazione Edmund Mach, Research and Innovation Center, Italy, elena.gottardini@fmach.it;

<sup>2</sup>TerraData environmetrics, Italy, ferretti@terradata.it

A network based on the native, widely distributed ozone sensitive species *Viburnum lantana* L. was installed in 2010 in Trentino, Northern Italy (Gottardini et al., 2014). The network was planned over the entire Trentino region ( $6 \times 10^3$  km<sup>2</sup>) to detect the biological response of vegetation to tropospheric ozone on the basis of visible foliar symptoms. Sites were selected according to a stratified (two elevation ranges x three ozone exposure ranges) random sampling design: originally, 30 sites were selected and visited in 2010; subsequently, a subsample of 10 sites was retained and visited in 2012, 2014 and 2015.

The full survey undertaken in 2010 allowed to detect a significantly higher frequency of symptomatic plants at sites with higher estimated ozone exposure (Gottardini et al., 2014). Subsequent surveys carried out in 2012 and 2014 confirmed the previous results. In 2015, the very hot and dry summer could have affected plants' response: where soil moisture conditions were very dry, frequency of symptomatic plants resulted significantly lower than in moderately dry situations. Symptoms data were further evaluated in relation to ozone levels in the region measured by the six conventional monitors of the local Environmental Protection Agency. The time pattern of mean frequency of symptomatic plants over the period 2010–2014 is consistent with the April–July mean ozone concentrations.

*\*Activity partially supported by Servizio Foreste e fauna, Autonomous Province of Trento (Italy).*