

Project Number 282910

ÉCLAIRE

**Effects of Climate Change on Air Pollution Impacts and Response
 Strategies for European Ecosystems**

Seventh Framework Programme

Theme: Environment

**D14.1 Synthesis of applicable data on impacts of ozone on
 photosynthesis, stomatal conductance and plant functioning**

Due date of deliverable: **01/04/2012**
 Start Date of Project: **01/10/2011**

Actual submission date: **01/09/2013**
 Duration: **48 months**

Organisation name of lead contractor for this deliverable : **ALTERRA**

Project co-funded by the European Commission within the Seventh Framework Programme		
Dissemination Level		
PU	Public	<input type="checkbox"/>
PP	Restricted to other programme participants (including the Commission Services)	<input checked="" type="checkbox"/>
RE	Restricted to a group specified by the consortium (including the Commission Services)	<input type="checkbox"/>
CO	Confidential, only for members of the consortium (including the Commission Services)	<input type="checkbox"/>

1. Executive Summary

This deliverable is carried out as a joint activity with WP9 and thus relates to D9.3 Completed database and results of meta-analysis. The scientific literature on the impacts of ozone on photosynthesis, stomatal conductance and plant functioning has been systematically searched for data of relevance to modelling in C3 and C4. Data has been collated into the MS ACCESS database developed under WP9 and made available for use within ECLAIRE. In addition, data from an existing database on tree –N responses has been made available by incorporation into the template developed under WP9.

Objectives:

This deliverable relates to: Objective 14.1. To further develop dynamic global vegetation models (DGVMs) and dynamic soil vegetation models (DSVMs) by including interacting effects of nitrogen, ozone and climate on modelled ecosystem productivity. This included specifically the improvement of existing leaf level O₃ uptake models in the DGVMs and because of this, a contribution has been made to a meta-analysis in WP 9 by contributing to a synthesis of applicable data on impacts of ozone on photosynthesis, stomatal conductance and plant functioning by a literature review

2. Activities:

Systematic searching of the scientific literature on effects of ozone, alone and in combination with other stresses including N and climate change, on photosynthesis, stomatal conductance and plant productivity. Agreed strings of search terms were entered into Web of Science .

3. Results:

259 Papers were identified as containing potentially useful data. Following more detailed consideration of the abstract of these papers for relevance, data was extracted from a selection and placed into the template developed in WP9. Synthesis of this data will be presented at the GA in Zagreb. Data from an existing database on tree-N responses was also incorporated.

4. Milestones achieved:

There are no specific milestones for this activity within C4. The next stage of using the data in the further development of models will be discussed at the GA in Zagreb.

5. Deviations and reasons:

This deliverable is delayed as it was so closely connected to WP9 of which D9.3 was scheduled at month 24 only. Actually, the scheduled time was too early in view of the large effort put in data mining. Within C4, some resources for this activity were diverted into other more pressing model development needs, resulting in only a few papers being mined for data on ozone effects on trees.

6. Publications:

None

7. Meetings:

Deliverable discussed at the GA in Edinburgh and in telecoms since then.

8. List of Documents/Annexes:

None