

4. These loads and effects are used in integrated assessment modelling and provide guidance for setting the emission ceilings and/or reductions for Canada and the United States of America in annex II.

II. CRITICAL LOADS OF NUTRIENT NITROGEN

For Parties within the geographical scope of EMEP

5. Critical loads (as defined in article 1) of nutrient nitrogen (eutrophication) for ecosystems are determined in accordance with the Convention's Manual on methodologies and criteria for mapping critical levels/loads and geographical areas where they are exceeded. They are the maximum amount of eutrophying nitrogen deposition an ecosystem can tolerate in the long term without being damaged. All critical loads reported by Parties are summarized for use in the integrated assessment modelling employed to provide guidance for setting the emission ceilings in annex II.

III. CRITICAL LEVELS OF OZONE

A. For Parties within the geographical scope of EMEP

6. Critical levels (as defined in article 1) of ozone are determined to protect plants in accordance with the Convention's Manual on methodologies and criteria for mapping critical levels/loads and geographical areas where they are exceeded. They are expressed as a cumulative exposure over a threshold ozone concentration of 40 ppb (parts per billion by volume). This exposure index is referred to as AOT40 (accumulated exposure over a threshold of 40 ppb). The AOT40 is calculated as the sum of the differences between the hourly concentration (in ppb) and 40 ppb for each hour when the concentration exceeds 40 ppb.

7. The long-term critical level of ozone for crops of an AOT40 of 3000 ppb.hours for May-July (used as a typical growing season) and for daylight hours was used to define areas at risk where the critical level is exceeded. A specific reduction of exceedances was targeted in the integrated assessment modelling undertaken for the present Protocol to provide guidance for setting the emission ceilings in annex II. The long-term critical level of ozone for crops is considered also to protect other plants such as trees and natural vegetation. Further scientific work is under way to develop a more differentiated interpretation of exceedances of critical levels of ozone for vegetation.