

Preliminary Conceptual Model - Causes of Haze in Crescent Lake (CRES1)

Due to the reason that a whole year of aerosol data is not available, no analysis about the 20% worst haze days can be done. Based on the data available from 6/2002-8/2003, regional nitrate in the cool season, sulfate in the warm season are believed to be the important causes of haze. Organics and dust also have significant contributions to haze in July and August.

In Crescent Lake, the average $PM_{2.5}$ mass concentration during 6/2002-8/2003 is $4.6 \mu\text{g}/\text{m}^3$, and the average total light extinction coefficient (B_{ext}) is 38 Mm^{-1} (Visual Range $\sim 102 \text{ Km}$; Deciview ~ 13). Sulfate and nitrate are two of the largest contributors to haze, with an average contribution of 25% and 21%, respectively. Figure 2 indicates that sulfate in the warm season and nitrate in the cool season are the major causes of haze. Organics and dust are important in July and August.

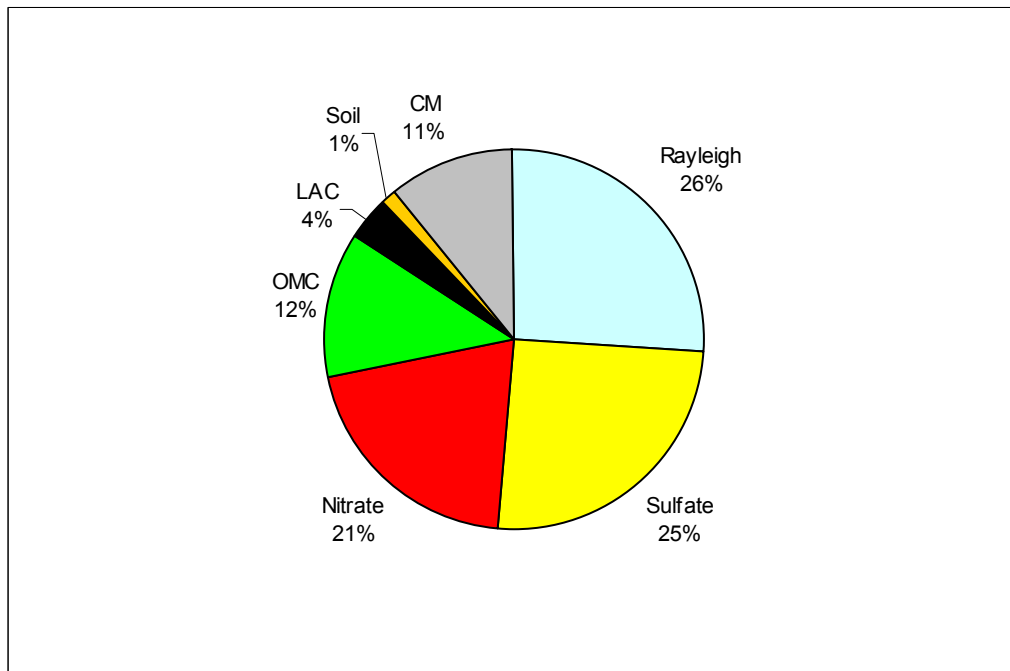


Figure 1. Average contributions of major aerosol chemical components to light extinction

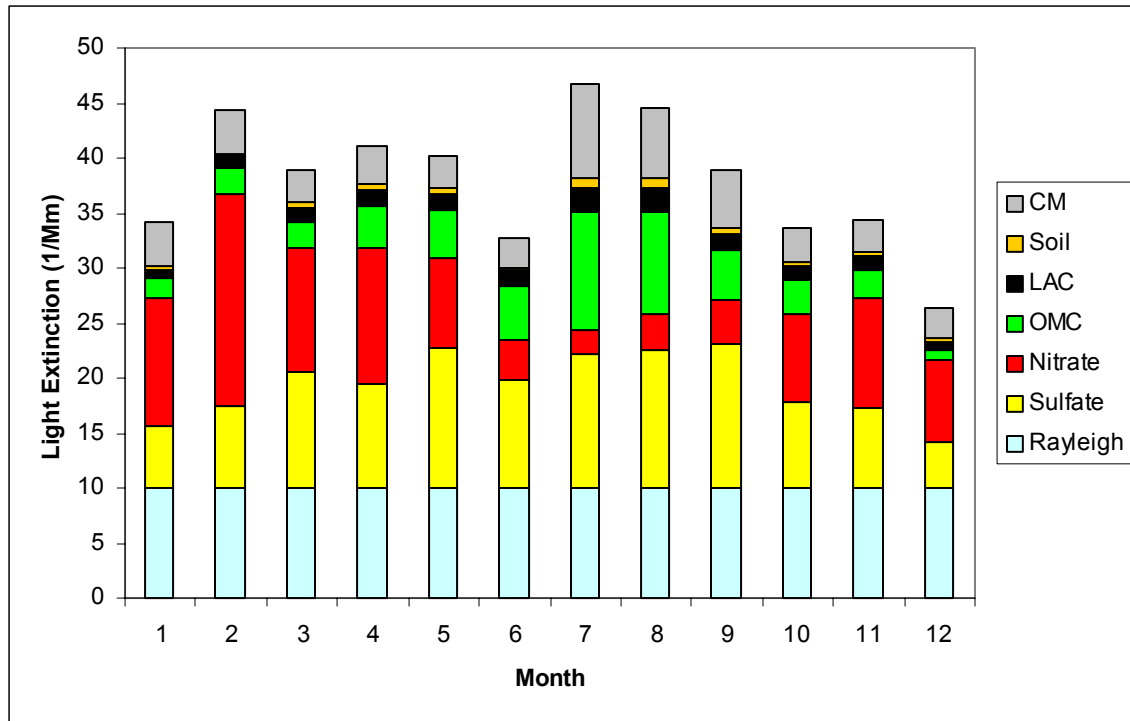


Figure 2. Average contributions of major aerosol chemical components to light extinction in each month