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**The Intermountain West and Ozone Standards**

**Abstract**

This study examines diurnal variations, and seasonal averages, for the purpose of identifying background ozone levels. With reliable background ozone data, we highlight episodic high events which can lead to National Ambient Air Quality Standard (NAAQS) violations. The United States Environmental Protection Agency has set NAAQS for tropospheric ozone due to the health hazard it can present to people and various ecosystems. Currently the NAAQS for ozone states that the fourth-highest annual maximum daily average 8-hour ozone concentrations must be 70 parts per billion per volume (ppbv) or lower, averaged over 3 years. High elevation regions of the Intermountain West (IMW) sometimes exceed average ozone concentrations of 70 ppbv. Storm Peak Laboratory (SPL) is located in one such region and has been selected as the site for the study. SPL is found near Steamboat Springs in Colorado at an elevation of 3208 meters, and has an ozone record going back to 1999. Our study has identified a number of events bringing ozone concentrations above 100 ppbv. Some years had higher ozone concentrations than others, for example 2017 was one of the better years with less than 2 hours of ozone above the 70 ppbv threshold. Asian emissions, regional oil and natural gas development, stratospheric ozone intrusion, and wildfire events will be examined as potential reasons for remote regions of the IMW to exceed the ozone standard. Identifying these high ozone events will help to form a more complete understanding of both anthropogenic and natural ozone impacts on high elevation regions. This information can also lead to improved policy decisions and abatement techniques.