

Evaluating the impact of wildfires on atmospheric ammonia concentrations in the US using satellite measurements

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Biomass burning is a major source of atmospheric ammonia. This study will utilize satellite observations of wildfires and ammonia across the Continental United States (CONUS) during a five year period (2010-2014). NASA's Fire Information for Resource Management System (FIRMS) will be utilized to obtain archived fire locations in the US obtained from the Moderate Resolution Imaging Spectroradiometer (MODIS) sensor on NASA's Earth Observing System satellites (Terra and Aqua). MODIS will also be utilized to obtain area burn and biomass loading, while NOAA's Advanced Very High Resolution Radiometer (AVHRR) is being used to determine the vegetation cover. The objective of this study is to quantify both trends in ammonia emissions from biomass burning as well as trends in wildfire activity and frequency from 2010 to 2014 across the continental US and then compare these emissions for each state in the United States (US). These ammonia emissions will then be compared with the US EPA National Emissions Inventory (NEI) for 2011 and 2014.