

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Characterizing air quality in Theodore Roosevelt and Rocky Mountain National Parks

Discipline: Natural
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Student Involvement: Yes, GRA
Effective Dates: 9/1/2015 - 1/31/2107
Funding Amount: \$410,048

Investigators and Agency Representative:

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Project Abstract: The goal of the project is to improve our understanding of the sources, transport, atmospheric transformation, deposition, and impacts of air pollutants in U.S. National Parks. The project efforts are designed to complement measurements from routine monitoring networks (e.g. Interagency Monitoring of Protected Visual Environments (IMPROVE), Ammonia Monitoring (AMon), National Atmospheric Deposition Program, (NADP), Clean Air Status and Trends Network (CASTNet)) to provide more detailed characterization of air quality problems in particular parks and regions and to identify key gaps associated with current air quality and deposition monitoring strategies. These results are critical for understanding the role and contributions of agricultural activities and energy develop on air quality in our National Parks.

Specific objective of this work are to (1) provide an assessment of winter air quality in the Bakken formation region of western North Dakota, including air quality impacts of oil and gas development in the region, (2) leverage the large investments from NASA, NSF, and the State of Colorado in the FRAPPE and DISCOVER-AQ campaigns to better characterize pollution transport from the Front Range to RMNP (3) provide new insights into the transport, deposition, and potential re-emission of reactive N species in RMNP, (4) provide new information concerning the nationwide and regional deposition balance between oxidized and reduced nitrogen.

Keywords: Colorado State University, NPS-Air Resources Division, Rocky Mountain National Park, Theodore Roosevelt National Park, Bakken Formation Region, air quality