

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: The effects of terrestrial carbon inputs on lake productivity and phytoplankton communities along an elevational gradient in the Colorado Rockies

Discipline: Natural
Type of Project: Technical Assistance/Research
Funding Agency: National Park Service
Other Partners/Cooperators: University of Colorado, Boulder
Student Participation: Yes
Effective Dates: 5/1/2016 - 12/21/2017
Funding Amount: \$11,000

Investigators and Agency Representative:

NPS Contact: Paul McLaughlin Ecologist National Park Service Rocky Mountain National Park 1000 Highway 36 Estes Park, CO 80517 970-586-1282 Fax 970-586-1392
Paul_mclaughlin@nps.gov

Investigator: Kim Vincent, PhD student Research Assistant VI CU Boulder, Institute for Arctic and Alpine Research 4001 Discovery Drive, Boulder, Colorado 80303 805-748-3674
kim.vincent@colorado.edu

Project Abstract: The research aims specifically to understand the impacts of terrestrial carbon inputs on lake productivity (as measured by chlorophyll-a concentration) and the diversity and abundance of phytoplankton in lakes below and above treeline. I hypothesize that lake productivity and the diversity and abundance of phytoplankton will be lower above treeline than below treeline. Understanding the impacts of carbon inputs to lakes will be important in the context of a warming climate with the potential for encroaching vegetation. Treeline does not always behave in the manner one might expect under warming climate conditions; thus, it will be critical to compare historic data with contemporary data to determine if treeline is moving upward in elevation, vegetation is becoming denser, or no changes have occurred.

Keywords: Carbon inputs, lakes, productivity, phytoplankton, elevation, Rocky Mountain National Park, University of Colorado- Boulder