

**Project Completion Report  
Rocky Mountains Cooperative Ecosystem Studies Unit (RM-CESU)**

**Project Title:** Environmental History of Invasive Exotic Species to Inform Responsible Restoration Practices in Rocky Mountain National Park Research Area

**Project Code:** Task Agreement Number P13AC00674 Under Cooperative Agreement P14AC00749

**Type of Project (Research, Technical Assistance or Education):** Technical Assistance

**Funding Agency:** United States Department of the Interior National Park Service

**Partner University:** Colorado State University

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\*Note: original PI was Mark T. Fiege. Upon his departure from CSU, Adrian Howkins became PI. Upon his departure from CSU, Sarah Payne became PI.

**Start Date of Project:** August 1, 2013

**End Date of Project:** June 30, 2018

**Funding Amount:** \$150,004

**Project Summary:**

Humans have actively introduced exotic species into Rocky Mountain National Park since the 1850s. The purpose of this long-term project was to use the discipline of Environmental History to help park managers, the public, and students to better understand the complex interplay among humans and non-human nature at Rocky Mountain National Park (ROMO). Students and faculty used environmental history to assist the park with their management, decision-making processes, and removal of exotic species. In 2014, a team of four CSU student interns produced a detailed series of Environmental History briefs focused on the most problematic exotic/invasive plant species identified by the park and assisted with restoring areas affected by prescribed burns of slash piles. In addition, graduate students in environmental history served as crew members on ROMO's vegetation crew in the summers of 2016 and 2017. In the final year of the project (academic year 2017-18), CSU researchers produced "An Environmental History of Invasive and Exotic Species in Moraine Park Campground: An Invasive Species Report," which is a 34-page report that includes historic context for invasive species, applicable cultural and natural resource laws, assessments of potential impacts of invasive species, as well as maps and illustrations from RMNP's museum storage facility and the park's historic photograph collections.

This project has also supported the work of the Public Lands History Center's annual Parks as Portals to Learning Field Workshop (PPL), now in its sixth year. The PLHC and ROMO collaboratively developed a pilot PPL workshop in 2013, with the goal of building bridges between academic research and day-to-day resource management. In its second year (2014), 10 students from liberal arts and natural resources disciplines observed conditions and collected data on specific problems park staff regularly deal with—invasive species, effects of wildfires, visitor expectations. They presented solutions and entered into dialog with park managers. In 2015, PPL's participants studied the environmental history of Moraine Park in Rocky Mountain National Park, focusing on the connections between the area's environmental history and current problems in resource disturbance and management. The goals of the 2015 PPL included breaking down the barriers to collaborative interdisciplinary efforts to address the park's contemporary sustainability issues, such as climate change, air quality, and elk-vegetation dynamics. In 2016, PPL continued this focus on Environmental History, and participants developed an Esri Story Map on Horseshoe Park, narrating more than ten thousand years of interactions between nature and humans. The 2017 PPL took a slightly different approach, involving repeat photography at Horseshoe Park based on historic images from the park's archives as a method to document and analyze environmental change over time. IN each of its years, students who have served on the vegetation or exotics crew throughout the summer have also served as leaders at PPL, bringing their unique insights after having completed a summer of manual labor in the park and learning about park management issues through hands-on experience.

**Number of students participating in this project: undergraduates, graduate students, degrees conferred.**

#### 2013

Pilot PPL 6 students: Kim Bauer (MA, History); Ryan Evans (Business Administration); Erica Patterson (Fish, Wildlife, Conservation Biology); Joel Scherer (MA History); Nicholas Shannon (Natural Resource Management); Kaitlyn Simcox (MA, Anthropology)

#### 2014

Exotics Crew 4 students: Ellen Blankers (MA, History), Nicholas Shannon (BS Natural Resource Management), Alison Foster (BS, Ecology), Kim Bauer (MA, History)  
PPL 10 students: Ellen Blankers (MA, History), Kim Bauer (MA, History), Nic Gunvaldson (MA, History), Saleh Dadjouy (MS, Conservation Leadership), Julie Sabattis (MS, Conservation Leadership), Jordan Cooper (MA, History), Emma Fajardo Emma, Tessa Moening (MA, History), Laura Wingate (BA, Art), Gabriel Lewis (BA, History)

#### 2015

Exotics Crew: NONE

PPL 7 students: Mark Boxell (MA, History), Will Wright (MA, History), Poppie Gullet (BA, History), Jaci Wells (MA, History), Steve Chignell (MA Geography), Katelyn Weber (MA, History), Sean Fallon (BA, History).

#### 2016

Exotics Crew 3 students: Maggie Moss Jones (MA, History), Mark Boxell (MA, History), Sean Fallon (MA, History)

PPL 6 students: Evelin Preciado (BS, Environmental Sociology), Mary Franke (BA, History), Poppie Gullet (MA, History), Sam Iven (MA, History), Maggie Moss Jones (MA, History), Sean Fallon (MA, History).

## 2017

Exotics Crew 2 students: Katie Oldberg (MA, History), Elizabeth Henke (MA, History)

PPL 7 students: Katie Oldberg (MA, History), Elizabeth Henke (MA, History), Hannah Ashley (MA, History), Kim Disney (BA, History), Ben Lee (MA, History), Patrick Hoehne (MA, History), Dillon Maxwell (MA, History).

## 2018

3 Researchers and 1 authors of “An Environmental History of Invasive and Exotic Species in Moraine Park Campground: An Invasive Species Report”: Katie Oldberg (MA, History), Dustin Clark (MA, History), Natalie Walker (MA, History)

### **Lessons Learned from this project:**

Students gained tremendous experiences while working directly with park staff either on vegetation crews, in the PPL workshop, or while researching for the invasive reports and briefs. The development of the PPL workshop through this project has led to seven years of highly effective exposure of students to the real-world circumstances faced by park staff, and exposure of park staff to the ideas and contributions of environmental history. PPL grew out of conversations among CSU Professor Mark Fiege and Ben Bobowski, chief of resource stewardship at Rocky Mountain National Park, and Ben Baldwin, Research Learning Specialist with the Continental Divide Research Learning Center. All three men have since moved on to work at new institutions/parks yet the PPL workshop has continued to ignite the imagination of park staff, faculty, and students. The PLHC plans to continue holding PPL workshops, and hopes to expand the model to other parks in the future.