

## **Project Summary**

### **Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Understanding the factors that influence boreal toad survival and response to population invasion by the amphibian chytrid fungus

**Discipline:** Natural  
**Type of Project:** Research  
**Funding Agency:** National Park Service  
**Other Partners/Cooperators:** Colorado State University  
**Students Involvement:** yes  
**Effective Dates:** 7/5/2017 - 5/31/2019  
**Funding Amount:** \$10,002

**Investigators and Agency Representative:**

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**Project Abstract:** The Boreal Toad (*Anaxyrus boreas boreas*) is currently listed as an endangered species in the state of Colorado and is petitioned for federal listing. A decision will be made by the US Fish and Wildlife Service by September 30, 2017 on whether to federally list the species as threatened or endangered under the Endangered Species Act. It is one of five amphibians native to Rocky Mountain National Park (RMNP); amphibian surveys and park records collected since 1915 document boreal toads breeding at ≥20 sites (Corn et al. 1997, park files). During the past 15 years, breeding has only been documented at six sites within the park (Lost Lake, Kettle Tarn, Spruce Lake, Big Meadows, Fay Lakes, and Mount Dickinson) and in 2016 breeding only occurred in four of these remaining sites. *Batrachochytrium dendrobatidis* (Bd), a fungal pathogen which causes an often-fatal disease in amphibians, has been credited as the cause of the recent and rapid declines of boreal toads within RMNP. Of the remaining six breeding sites three have tested positive for Bd. The objectives of this work are to understand factors that impact survival in early life stages of toads where management actions can be employed to improve successful reproduction. Additionally, we will analyze existing data from small adult populations during different stages of invasion by Bd. This study will be completed by a graduate student funded through a graduate research assistanceship. The project will provide the opportunity of attainment of an advanced degree by a young professional in the natural laboratory of Rocky Mountain National Park. This study will also benefit the scientific community and is of specific interest to the Boreal Toad Conservation Team.

**Keywords:** Boreal Toads (*Anaxyrus boreas*), amphibian chytrid fungus, Rocky Mountain National Park, Colorado State University