



Seeking PhD and MS students for a funded project on Fire Ecology, Plant-Wildlife Interactions, and coupled Terrestrial-Aquatic Succession.

Starting in spring or summer of 2021 at Brigham Young University in Provo, Utah.

Position open until filled. Send CV and letter of interest to benabbott@byu.edu

Project Background: This collaborative project investigates the effects of changing wildfire regimes on terrestrial and aquatic ecosystems in the western US. It brings together university researchers, government scientists, and a team of dynamic graduate and undergraduate students to investigate succession in natural and managed forest ecosystems across Utah. Students will apply methods from ecology, hydrology, and molecular biology, including assessments of forest regeneration and recruitment, wildlife activity and behavior using radio-collars and networks of wildlife cameras, environmental DNA analysis, and hydrochemical response of burned watersheds. Field work will be focused on a >600 km² megafire complex in central Utah that burned in 2018. Two or more positions are available, with potential start dates ranging from spring of 2020 to 2021.

1. The first position is terrestrially focused, investigating the impacts of fire size and severity on wildlife movement and behavior and its cascading effects on forest regeneration across a gradient of plant community types (aspen-conifer, oak-maple, Pinyon-Juniper). The project also includes a collaboration with the US Forest Service examining the effects of large-scale prescribed fire and mechanical treatments to restore aspen forests that are experiencing regeneration failure due to chronic herbivory. Lab work will involve plant trait analysis including defense chemistry expression, and wildlife and habitat analysis and assessment using GIS.
2. The second position is focused on disturbance and succession in surface water networks. The student will lead research that uses environmental DNA, stream metabolism, high-frequency water chemistry sensors, and hydrological metrics to explain patterns of recolonization and recovery. This research will address fundamental ecological questions of scale-dependence of disturbance magnitude and frequency, as well as applied questions of ecological resilience in habitat that has been fragmented by multiple human and natural disturbances.

Students will develop interdisciplinary projects in a collaborative and positive team environment, together working to improve understanding and management of rapidly changing ecosystems.

Additional info on project and research group: <https://pws.byu.edu/st-clair-lab/st-clair-lab>, <https://benabbott.byu.edu>, <https://frandsen.byu.edu/>, https://youtu.be/P6pl8BJxg_A

