Data Submitted (UTC 11): 1/7/2020 5:58:25 AM
First name: Rebecca
Last name: Evans
Organization:
Title:
Comments: I have been working on Mount St. Helens since 2015 first for my Masters and now my PhD. My research seeks to understand the controls and mechanisms of soil carbon sequestration. Soil carbon (C) storage is a critical component of forecasting terrestrial feedbacks to climate change. Because of the legacy of older soil organic matter, the dynamic and complex processes linking old and new soil C confound our understanding of the mechanistic relationships between C and soil nutrients in ecosystem development. As a consequence, substantial uncertainty exists in how soil C is initially stabilized in soils and potential feedbacks between developing nutrient cycles and soil C stabilization. Mount St. Helens provides a rare opportunity to investigate abiotic and biotic processes controlling soil C development. Substantial uncertainty exists in how soil C is initially stabilized in soils and potential feedbacks between developing nutrient cycles and soil C stabilization. My research goal is to identify the mechanistic relationships between plant, microbial, and mineral processes. Mount St. Helens offers the perfect opportunity to answer these long held yet fundamental questions thanks to a wealth of pilot data, proximity to excellent research universities, and a group of connected and dedicated scientists.
The Mount St. Helens eruption, and the science that followed, transformed the public's understanding of the landscape of the Pacific Northwest and our perception of the relationship between humans and nature. Over the ensuing 40 years, scientists have studied the return of plants and animals and ecosystem development. The results of these studies have been eagerly consumed by the public, inspired young people to explore scientific careers, and emphasized the importance of science to the general public. My work will introduce the public to the mysterious and fascinating world of fungi and educate the public about fungal roles in soil and plant communities and threats to fungal diversity. This work provides an opportunity to bring fungal science and appreciation to the public via the hundreds of thousands of people who visit Mount St. Helens every year to learn about the ecology and geology of this unique landscape.
The global scientific community studying the effects of disturbance and mitigation strategies for global change agents have relied on places like Mount St. Helens to understand fundamental ecosystem processes, threats to biodiversity, and restoration techniques. My work will help to fill the gap in knowledge as to the role fungi play in plant-soil interactions and how current global change agents threaten the understudied soil mycological community. Threats such as the proposed road will impact my study by disturbing my study sites, introducing non-native species, disturbing soil and increased erosion. I also fear that this is only the beginning and soon public vehicles, bikes, and domestic animals will be allowed on the pumice plain ruining our unique opportunity to study succession and ecosystem development.
I work with non-profit organizations such as The Mount St. Helens Institute which connects people with the science and natural history of Mount St. Helens through stewardship, education, and exploration. For the past two summers I participated in the institute's "Ecology Camp" which engages high school students, from around the country and locally, in real world ecological research. In an interactive setting I taught students about how ecosystems come back from destruction, nitrogen fixation, nitrogen deposition, invasive species, and the importance of fungi in all terrestrial systems. Students participated in collecting soils and observing ecosystem development in my experimental plots on Mount St. Helens. Conservation of Mount St. Helens in its natural state will enable continued education for future stewards of our planet and interconnected society.
Mount St. Helens offers an extremely unique opportunity to study processes we cannot understand in other extant ecosystems. Mount St. Helens brings hundreds of thousands of visitors to witness an ecosystem untouched by man and connect to our innate interest in the origin of life. Mount St. Helens' pumice plain has been set aside for hikers and research only. There are very few places where researchers have the opportunity to observe and experiment in natural systems. Decades of research has produced fundamental understanding of diversity, long-term data sets to study the ecological patterns and processes of species survival and colonization. Geological findings and improved seismic monitoring have borne from Mount St. Helens' eruption. The area set aside for research and uninhibited hiking is paramount for our understanding of how our world works and increased knowledge of science for the general public. We must protect this landscape from invasive

encroachment by a man made road as it will ruin the incredible long term experiments and future opportunities to do meaningful research.