

Cameron Peak Fire – Post-fire plant recovery research

Extension agent/specialist mentor name and county/region. Karen Crumbaker, Larimer County Extension.

Are there any other identified mentors (e.g. campus-based faculty/staff or other Extension personnel) associated with this project? Camille Stevens-Rumann, Assistant Professor, Warner College of Natural Resources; Pam Smith, Botanist, Colorado Natural Heritage Program.

In what region(s) will the student be working (county/region)? Larimer County

Please describe the proposed internship goals, scope, and objectives. This internship will focus on understanding early post-fire recovery of the Cameron Peak Fire. The objectives of this study are to: 1) quantify the plant communities one year post-fire in different forest types, 2) understand differences in native and non-native species abundances across a gradient of elevation and previous human impacts. The sites will be in the Arapahoe-Roosevelt National Forest near Cameron Pass (11,000') in spruce-fir forests, CSU Mountain Campus (9,000') in lodgepole pine forests, and private land at a lower elevation mixed-conifer forests. Up to ten plots will be set up in each forest type. By having research locations on private land, the intern will be able to compare the results of species diversity between human disturbances on private vs. public lands.

How was this applied research project identified? The Cameron Peak Fire burned almost 209,000 acres in Larimer County, becoming the largest wildfire in Colorado's recorded history. Initially, the fire burned at higher elevations in the Roosevelt National Forest, but over the span of 112 days, moved to lower elevations impacting private landowners. Landowners contacted Larimer County Extension seeking information on what to seed to help the landscape recover from the fire. This posed the question of how the landscape would recover naturally and where and when human assistance is needed for natural recovery. Many private landowners and public land managers are often worried about the increased presence of non-native and noxious weeds following these large scale disturbances.

With which stakeholder group(s) will the intern work? CSU Larimer County Extension, Faculty and graduate student with the Warner College of Natural Resources, and a botanist with the Colorado Natural Heritage Program.

What student learning outcomes do you anticipate and are there opportunities for professional development? The intern will learn forestry and botany field techniques including forest structure measurements and plant identification skills. The intern will gain a basic understanding of fire ecology and mechanisms of plant recovery. The intern will learn about Colorado noxious weeds and their impact on natural landscapes. The intern will attend CSU Colorado Forest Restoration Institute's one week training to learn field measurement techniques, plant ID, and safety protocols for working in recently burned landscapes. The intern will have the opportunity to attend a CSU Larimer County Extension Native Plant Master class.

Do you have a specific mentor style that you would like to share with potential interns?

The intern will work with the Extension and Faculty mentors throughout the summer to design the project and gain skills and both will be available as questions and issues arise. For additional mentorship and safety, the intern will work closely alongside a graduate student in the field who will serve as an additional mentor.

Are travel funds available? Opportunities to provide student assistance with housing? The intern will be reimbursed for mileage to research sites from Fort Collins with research funds from Stevens-Rumann.