Using GPS Collars to Track Livestock Movement Following the East Troublesome Fire

The Fitch Family Ranch, located in Grand County Colorado, produces high-quality organic beef by prioritizing land stewardship and the well-being of their animals. Their beef is well-known around Grand Lake supplying many local restaurants and families throughout their community. Ranch owner, Debbie Fitch, is not only passionate about their family's animals, but also the important role that food plays in health and well-being. The ranch is located near Hot Sulphur Springs and holds grazing allotments managed by the Bureau of Land Management (BLM). In addition to organic beef, the Fitch Ranch also has a modest hay operation for high quality grasses and hunting opportunities for trophy deer and elk. In 2020, the East Troublesome Fire burned 192,560 acres in Grand County earning the distinction of being the state's second largest wildfire recorded in Colorado. Parts of the Fitch Ranch and its BLM grazing allotment had burned. Some of the burned areas were reseeded before winter set in, while additional restoration efforts are being considered for coming spring. The goal of the proposed internship is to understand how fire and re-seeding efforts effect livestock movement and productivity. To meet this goal, our primary objective is to test GPS technologies and field collars on cows to monitor the movement and activities of livestock throughout the summer. Of particular interests are how cows respond to the recent burn and restoration efforts, their preferences of vegetation types, and use of water resources.

The proposed internship is designed to give a student the unique experience in day-to-day operations of ranching in the Rocky Mountain West, while learning how to develop and implement an ecological study to help inform management decisions. Interns will be exposed to the complexities of working ranches in Colorado that aim to balance long-term economic viability with ecosystem stewardship. Partnering ranch managers will provide hands-on training for routine activities that may include care of livestock, operating equipment, maintenance of infrastructure, and assisting in guest services. This opportunity is designed to meet the growing demand for a new generation of ranch managers and technicians that will be equipped with the interdisciplinary skills and new technologies needed to address the challenges of ranching in today's changing world. It also provides a student with tools necessary to formulate adaptive management strategies on working lands. Anchored in experiential learning and engagement within the ranching community, this internship will provide extensive opportunities to interact with ranch managers, ranch owners, foresters and natural resource managers as part of the program's scope.

The Planning and Reporting Units (PRU) for this opportunity is on natural resources and varying aspects of livestock and range. The Mentorship Team for this internship includes Dr. Paul Evangelista (paul.evangelista@colostate.edu), an ecologist at the Natural Resource Ecology Laboratory, and Olivia Clark (Olivia.k.clark@colostate.edu), the director and agent for Agriculture and 4-H Youth Development at CSU Extension in Grand County. Paul works with ranches across Colorado and New Mexico, and leads Colorado State University's new Western Ranch Management and Ecosystem Stewardship Program (WRMES). Olivia has an extensive working relationship with a host of ranches and federal agencies, such as the US Forest Service and Bureau of Land Management, specializing in range management and range monitoring. The intern will be expected to work 40 hours a week for 10 weeks over the summer months of 2021. The Fitch Ranch will provide housing, and an additional $300 for travel will be provided by the WRMES Program. No experience in ranching is required; however, the student will be expected to have a foundational understanding of ecological principles and natural resource/range management. Skills in GIS mapping are preferred, but not required.