

Annual Interim Report: W-177-R Montana Elk Recreation Study
Reporting Period: October 1, 2021 – September 30, 2022
State: Montana
Agency: Montana Fish, Wildlife and Parks

Background and Purpose

Outdoor recreation is booming. Outdoor Foundation estimated that in the United States, there are nearly 30 million hikers, just under 7 million mountain bikers, over 14 million hunters, and nearly 23 million wildlife watchers (<https://outdoorindustry.org/resource/2018-outdoor-participation-report/>). The nonprofit Outdoor Alliance estimates that 76% of human-powered outdoor recreation occurs on public lands in western states (<https://www.outdooralliance.org/state-rec>).

Outdoor recreation is a huge industry and an integral part of the culture in both Colorado and Montana. In Colorado, outdoor recreation contributes 511,000 jobs, \$62.5 billion in economic output, and \$9.4 billion in local, state, and federal tax revenue annually (<https://cpw.state.co.us/Documents/Trails/SCORP/Final-Plan/2019-SCORP-Report.pdf>). Montana is a less populated state, yet Montana's outdoor recreation economy generates \$7.1 billion in consumer spending and more than 71,000 jobs annually (<https://business.mt.gov/Portals/49/2018%20MTOOR%20Economy%20Report.pdf?ver=2018-10-19-113801-580>).

State governments in both Colorado and Montana are committed to promoting outdoor recreation for its cultural, health, and economic benefits. Wildlife and parks agencies in both states have recently emphasized outdoor recreation in their guiding principles, as represented by the agency tag lines in Colorado (“Live Life Outside;” <https://cpw.state.co.us/livelifelifeoutside>) and Montana (“The Outside is in Us All;” <https://www.youtube.com/watch?v=SJ-q9i5YQ9I>). Yet the statutes governing both agencies, as well as their mission statements, also require a focus on conservation and management of wildlife and their habitat.

Outdoor recreation generally displaces wildlife and diminishes their habitat (e.g., Joslin and Youmans 1999, Larson et al. 2016). In Colorado, public interest is high regarding possible negative effects of recreation on elk populations and habitat (<https://durangoherald.com/articles/250613-where-have-all-the-elk-gone>, <https://www.steamboatpilot.com/news/newly-formed-group-advocates-to-slow-trail-building-in-routt-national-forest-to-protect-wildlife>, <https://www.vaildaily.com/news/eagle-county-officials-concerned-by-wildlife-population-declines>). In Montana, possible effects of recreation on elk populations and habitat has been a focus in several recent comments submitted by FWP on federal land management proposals. The effect of road-based recreation on elk populations and distribution has been studied extensively in the west (McCorquodale 2013) as has the effect of hunting pressure and hunter access (including several recent and ongoing studies in Montana). While recent work in an experimental setting in Oregon has found significant avoidance of trail-based recreation by elk (Wisdom et al. 2018), this issue has been little-studied in a relative sense.

This project is a collaborative effort between Colorado Parks and Wildlife (CPW) and Montana Fish, Wildlife and Parks. In 2019, CPW began an extensive study of the effects of outdoor recreation on elk recruitment, habitat selection, and distribution. This proposal details the

addition of a largely-public-land Montana study area with less outdoor recreation than the existing Colorado study areas. The addition of this Montana study area will contribute information regarding elk movements and recreational use in a different setting that likely experience less recreational pressure as compared to the Colorado sites. The collaborative analysis of recreational effects on elk distributions from the Colorado and Montana study areas will improve the overall inference of the study by capturing a diversity of recreation pressures and help to ensure relevance of the inferences to Montana elk herds. This grant will specifically cover the costs of implementing the field work in Montana and university costs related to producing analyses and inferences from Colorado and Montana study areas combined.

Objective

The objective of this project is complete the investigation into the effects of trail-based recreation on elk habitat selection and distributions by June 30, 2024.

Location

The project will occur across the Ruby Mountains elk population annual range in southwestern Montana. This area is primarily located in Madison County, Montana.

Schedule

FY 20 – Establish funding agreements, initiate elk collaring by March 2020, initiate camera trapping for summer 2020

FY 21 – Continue collecting elk movement data, continue camera trapping during summer 2021 and 2022

FY 22 – End elk movement data collection by March 2021, continue camera trapping during summer 2022 and 2023

FY 23 – End camera trapping in fall 2023. Prepare final analyses

FY 24 – Final report and analyses delivered by June 30, 2024.

Progress

We continued deployment and maintenance of cameras in the Ruby Mountains. Field crews visited each camera site and replaced batteries and SD memory cards. Cameras are now in their final year of deployment. Technicians reviewed photos taken from previous years camera deployments.

Preliminary data processing and analysis was started. A total of 3,630,011 photos were collected during the first field season. Of those photos, 30,413 contained elk.

Species	Photos	Photos 7/1-8/31
Mule Deer	16,624	5,904
Elk	30,413	14,835
Black Bear	295	206
White-tailed Deer	105	75
Moose	407	153
Cougar	130	26

Figures

Figure 1. Relative locations and camera identification (ID) numbers for 94 cameras deployed in the Ruby Mountain Range, Montana, in June 2020. (Camera ID numbers are not sequential.)

