AKA: FLAM CREW

Colorado College student Jordan Ellison, a senior in the organismal biology and ecology department, conducts student research as part of Colorado College's Flammulated owl research team.

State of the Rockies asked her: How did you become a student researcher on Brian Linkhart's owl team?

Jordan: After taking ecology with organismal biology and ecology Professor Brian Linkhart, I knew I had to work on his summer research crew, aka: Flam Crew." I was inspired by his passion for not just the owls, but everything else living and non-living in the system.

Rockies: Why do you think student research is an important part of undergraduate study at CC?

Jordan: The coolest part of the research for me is getting to spend a lot of time trying to better understand a particular system. Flammulated owls are considered a sensitive species, making them a good indicator of forest health. By monitoring their population dynamics in. multiple study areas allows us to understand the impacts of different disturbances, in our case, fire and mechanical thinning. Gaining research experience as an undergraduate has been an incredible opportunity to help prepare me for graduate school which I hope to begin in the next few years. My thesis is focused on the relationship between Flammulated owls and their primary predator North American red squirrels, as one of my broad ecological interests is predator-prey interactions (with the other being spatial ecology).

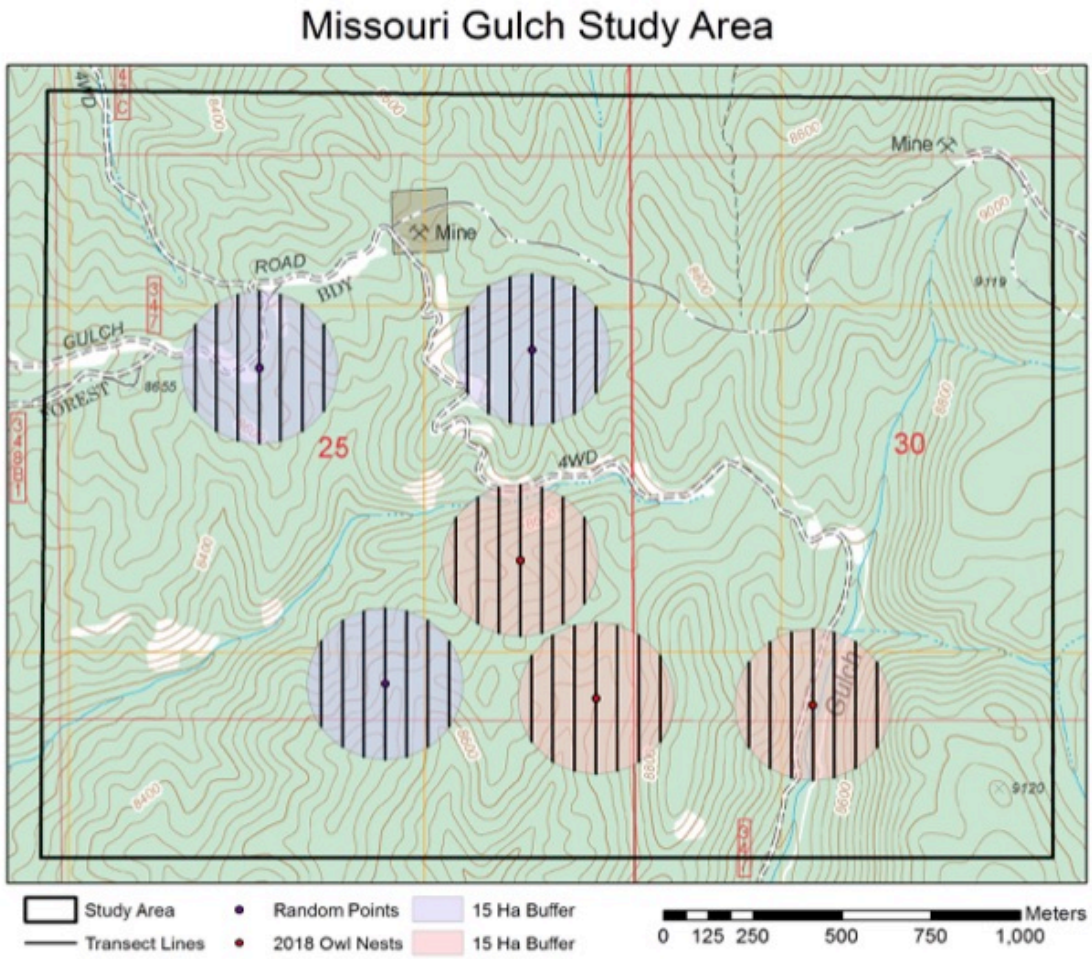
Rockies: How is this project relevant to State of the Rockies themed research?

Jordan: One of the major benefits of this long term study is our ability to have a baseline and begin to see changes in response to changing climate.

ABSTRACT

Does Predation Risk by Tree Squirrels Affect Nest Habitat Selection of Flammulated Owls (Psiloscops flammeolus)? J. Ellison

Nest predation is known to influence the evolution of life-history traits and habitat selection across avian taxa. In cavity nesting species, the increased structural protection of trees affords greater concealment of nests from predators, resulting in lower rates of predation. The Flammulated Owl (*Psiloscops flammeolus*) is a small, cavity-nesting raptor that breeds in montane forests of western North America. Throughout Colorado, the primary nest predator of Flammulated Owls is the North American Red Squirrel (*Tamiasciurus hudsonicus*). To determine how predation risk by



Red Squirrels may affect owl nest habitat selection, several characteristics of the nest site were quantified at owl nests from 2010-2018 and compared to available but unused sites. I found a higher mean cavity height in owl nests (6.7 ± 0.2m) compared to available cavities (6.1 ± 0.2m; $t=2.0$, $p<0.01$). The selection of higher cavities may be an adaptive response to predation risk by squirrels, as lower cavities experience higher rates of predation. The mechanisms leading to this response are uncertain, but higher cavities may increase vulnerability of squirrels to predation by forest hawks (*Accipiter* spp.) or increased vigilance by female owls, given our observation that females are more likely to flush from lower nests when disturbed.