Rocky Mountains Cooperative Ecosystem Studies Unit
Project Summary

Task Agreement #: L21AC10148
Project Title: Can noise from wind turbines affect pollination and native bees?

Discipline: Natural
Type of Project: Research
Funding Agency: Bureau of Land Management
Other Partners/Cooperators: University of Wyoming
Student Participation:
Effective Dates: 0/01/2021- 09/30/2024
Funding Amount: 48,464.

Investigators and Agency Representative:
Agency Contact:

Investigator: Lusha Tronstad, Wyoming Natural Diversity

Project Abstract:
University of Wyoming - Wyoming Natural Diversity Database (WNDD) will measure seed set, collect pollinators, and measure sound at ≥2 wind farm sites before and after they are constructed to measure how sound from wind energy may alter our native plants and pollinators. Collecting samples and analyzing them for results. Seed set experiments measuring the success of plants producing seeds in 3 treatments (self-pollinated, pollinated by local pollinators or flowers receiving excess pollen) Collecting pollinators (number of bees and butterflies and their richness) Measuring sound. Wind energy is increasing rapidly in the United States to meet growing energy demands. Most studies focus on the direct effects of turbine blades; however, almost nothing is known about the effects of sound on the environment. Turbines produce audible and inaudible noise (infrasound, <20 Hz which is generally inaudible to humans). The only study we are aware of investigating infrasound and wildlife was on badgers (Meles meles) living in wind farms in the United Kingdom, which had higher stress hormones compared to badgers living >10 km from such areas (Agnew et al. 2016). Sound may affect other organisms near wind farms, such as plants or pollinators. Results from study will be used to better understand how wind farms influence ecosystems and produce strategies to better manage native fauna and flora in areas with wind farms.