Northern Goshawk Habitat Use and Selection in the Greater Yellowstone Ecosystem

2020 Executive Summary

Many animal populations are at risk across Wyoming and in the Greater Yellowstone Ecosystem. While agencies are tasked with managing sensitive species, there is often a significant lack of data needed to adequately manage these animals. Northern Goshawks are an uncommon, secretive forest-dwelling raptor currently classified as a Species of Greatest Conservation Need in Wyoming and a sensitive species by the US Forest Service because of their reliance on mature, older contiguous forest stands, which are at risk due to issues such as logging, burning, insect infestations, and climate change. Since the early 1990's, several studies have documented goshawk occupancy declines across the intermountain West. Many factors may be driving these declines including geographical shifts of nesting pairs, weather and climate, prey availability, and changes in forest structure and age.

Following a pilot study in 2019, we developed this project with the objective of gathering critical movement data from breeding goshawks to understand habitat use, movement patterns, and to create predictive maps of critical habitat. Understanding and being able to predict seasonal habitats in the Greater Yellowstone Ecosystem will help state, federal, and county managers sustain these sensitive raptors in Jackson Hole by having a decision support tool for current and future changes to critical goshawk habitat. Our project objectives in 2020 were to outfit at eight breeding goshawks in Jackson Hole with GPS transmitters to gather habitat use and movement data needed to create models of breeding habitat in the Greater Yellowstone Ecosystem.

In 2020, we documented 79% goshawk territories were occupied (n = 11) and eight contained active nests. Of the active nests, 88% were successful (n = 7) with mean productivity of 1.57 fledgling/active nest (range = 1-3). We continued to gather data from one male goshawk outfitted with a transmitter in 2019 during the 2020 breeding season. We captured eight new goshawks in 2020 and deployed seven transmitters. Unfortunately, five of the newly deployed transmitters failed immediately following deployment. While replacements are being issued for those failed transmitters, we were able to gather adequate location data from four male goshawks at different territories during the 2020 breeding season. This project will continue in the coming years with the goal of replacing failed transmitters and increasing sample size of individuals and locations over the coming years.