

Of Mice and Birds: Effects of primary predator removal on sagebrush songbird nesting success- 2019 progress report

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During the summer of 2019, we conducted nesting surveys and small mammal trapping in 6 newly established plots on the Pinedale Anticline Project Area (PAPA) gas field near Pinedale, Wyoming. Throughout the summer we conducted 6 removal trapping sessions in 3 of our plots where all deer mice (*Peromyscus maniculatus*), totaling 93 individuals, were removed from these plots. We also conducted 3 trapping sessions in our 3 control group plots, to determine a baseline deer mouse abundance for our study area.

Systematic nest searching was conducted from May to August, with all nests being monitored and fated as either fledging or failing. We were specifically targeting three species of sagebrush obligate songbirds (sagebrush sparrow, Brewer's sparrow, sage thrasher) for our study. We found a total of 147 nests throughout the summer (Table 1) with the majority of

nests found being one of three species of sagebrush obligate songbirds. To capture nest predations and quantify and differences in predators and predation rates between treatments, we deployed 12 infrared camera



Figure 2: Sagebrush sparrow nestlings waiting to be measured for body condition metrics.

systems on multiple nests throughout the summer. This field season experienced an unusually low rate of nest depredation across all plots (23% of all nests found were depredated).

We also collected basic morphological (weight, tarsus and wing chord length) data from 184 individual nestlings, from 61 nests, for the three species of sagebrush obligate songbirds. From these data we are currently generating a body condition index to test whether there were differences in nestling body condition between plots and treatment groups.

The data collected from this field season is currently being analyzed with results pending, as this is the first field season for a master's project in progress. All results discussed within this report are preliminary. We are currently preparing for our second and final field season for the summer of 2020. Results from the 2019 field season were presented at the Wyoming chapter of The Wildlife Society's annual



Figure 1: Early season small mammal trapping.

conference in November 2019. The Meg and Bert Raynes Wildlife Fund was acknowledged at this conference and will continue to be so in the future. We anticipate presenting these data in the future at other state- and nation-wide conferences as the project develops and will consider the project completed when Ashleigh Rhea defends her master's thesis (anticipated spring 2021).

Table 1: Number of nests found and nestlings measured for the 2019 summer field season.

Species	Number of nests	Number of nestlings measured
Brewer's Sparrow (<i>Spizella breweri</i>)	60	93
Sagebrush Sparrow (<i>Artemisiospiza nevadensis</i>)	46	67
Sage Thrasher (<i>Oreoscoptes montanus</i>)	31	34
Non-target Species	10	-

With the financial support provided by the Meg and Bert Raynes Wildlife Fund, we were able to hire an additional technician to help with the collection of data for the 2019 field season. We also purchased an additional infrared camera setup. As of January 2020, we have used all the provided monies in these designated areas of expense.

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