ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 115526
Juneau, AK 99811-5526

Alaska Department of Fish and Game
Wildlife Restoration Grant

GRANT NUMBER: AKW-29

PROJECT NUMBER: 8.0 Ptarmigan

PROJECT TITLE: Steese and Denali Highway Comparative Rock Ptarmigan Graduate Study

PERIOD OF PERFORMANCE: March 23, 2018 – October 31, 2022

PERFORMANCE YEAR: March 23, 2019 – March 23, 2020; year 2 of a 3-year grant

REPORT DUE DATE: June 15, 2020

PRINCIPAL INVESTIGATOR: Cameron J. Carroll

COOPERATORS: University of Alaska-Fairbanks

Authorities: 2 CFR 200.328
2 CFR 200.301
50 CFR 80.90

I. PROGRESS ON PROJECT OBJECTIVES DURING PERFORMANCE YEAR

OBJECTIVE 1: Collect data on adult female survival, nest initiation dates, clutch sizes, nest success, and hatch dates of rock ptarmigan adjacent to the Steese Highway (Unit 25C) and the Denali Highway (Unit 13B) for a comparative study looking at reproductive ecology of these two distinct populations.

ACCOMPLISHMENTS: A total of 87 (54 at the Steese Highway study site and 33 at the Denali Highway study site) rock ptarmigan hens were captured and fitted with a radio-transmitter during the 2019 field season. Data on nest location, nest initiation dates, clutch sizes, nest success rates (daily survival rates), and hatch dates was collected from 66 (42 at the Steese Highway study site and 24 at the Denali Highway study site) of the 87 radio-tagged hens through 9 August, 2019.

OBJECTIVE 2: Collect data on brood survival to 10 August (start of hunting season) for rock ptarmigan adjacent to the Steese Highway (Unit 25C) and the Denali Highway (Unit 13B) for a comparative study looking at reproductive ecology of these two distinct populations.

ACCOMPLISHMENTS: Field crews monitored all radio-collared hens that successfully hatched ≥ 1 chick through 9 August, 2019 to collect data on brood survival. A total of 37

broods (18 at the Steese Highway study site and 19 at the Denali Highway study site) were monitored through 9 August, 2019.

OBJECTIVE 3: Collect data on sex ratios of rock ptarmigan chicks (based on analysis of egg shell fragments) at time of hatch adjacent to the Steese Highway (Unit 25C) and the Denali Highway (Unit 13B) for a comparative study looking at reproductive ecology of these two distinct populations.

ACCOMPLISHMENTS: Egg-shell fragments and non-viable eggs were collected from nest bowls following successful hatch in June 2019. Analyses of egg-shell fragments from 2018 and 2019 to determine sex ratios of rock ptarmigan chicks at hatch are expected to be completed sometime in 2020.

II. SUMMARY OF WORK COMPLETED ON PROJECT TO DATE

A total of 177 rock ptarmigan hens (104 at the Steese Highway study site and 73 at the Denali Highway study site) were captured and radio-collared during the 2018 and 2019 field seasons. Of these 177 hens field personnel collected data from 110 hens (64 at the Steese Highway study site and 46 at the Denali Highway study site) on nest initiation dates, clutch sizes, nest success, and hatch dates. From the 110 hens that laid nests 59 (30 at the Steese Highway study site and 29 at the Denali Highway study site) successfully hatched and left their nests with ≥ 1 chick. A total of 69 (36 at the Steese Highway study site and 33 at the Denali Highway study site) broods were monitored to estimate brood survival to 9 August. Ten (6 at the Steese Highway study site and 4 at the Denali Highway study site) of the 69 hens that were monitored for brood survival were collared post-hatch to maintain a good sample size of hens with broods as collared hens died throughout the summer. The data collected will be analyzed by a graduate student in 2020.

This report summarizes data collected through year 2 of a 3-year project.

III. SIGNIFICANT DEVELOPMENT REPORTS AND/OR AMENDMENTS

This project was originally intended to have 3 field seasons; however, after the 2019 field season it was determined that the third field season would be eliminated. Therefore, the data collection that is summarized in section II above includes all data that will be analyzed for this project. However, this federal aid grant will continue to support the graduate student in their pursuit of a graduate degree through 2021. We are currently working toward amending the Reimbursable Service Agreement (RSA) with the University of Alaska-Fairbanks for the remaining period of the project (March 24, 2020 to October 31, 2021) and a significant development report will be included in the 2021 interim report.

IV. PUBLICATIONS

None

V. RECOMMENDATIONS FOR THIS PROJECT

None

Prepared by: Cameron J. Carroll **Date:** June 10, 2020