

**Alaska Department of Fish and Game  
Wildlife Restoration Grant**

**GRANT NUMBER:** AKW-R-12-2019

**PROJECT NUMBER:** P1.0

**PROJECT TITLE:** Estimation of Moose Abundance in Anchorage Urban Areas

**PERIOD OF PERFORMANCE:** February 22, 2019 – June 30, 2022

**PERFORMANCE YEAR:** October 01, 2020 – September 30, 2021

**REPORT DUE DATE:** Submit to Coordinator December 29, 2021; due to FAC

**PRINCIPAL INVESTIGATOR:** David Saalfeld

**COOPERATORS:** David Battle, Sean Farley, and Cory Stantorf

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Authorities: 2 CFR 200.328  
2 CFR 200.301  
50 CFR 80.90

**I. PROGRESS ON PROJECT OBJECTIVES DURING PERFORMANCE YEAR**

**OBJECTIVE 1:** Estimate population size, gender composition, exploitation rates, and survival of moose within the Anchorage urban area utilizing ground-based biopsy darting and Multiple Event Cormack-Jolly-Seber capture-recapture.

**ACCOMPLISHMENTS:** Prior to award in February 2019, we had already conducted 2 ground-based biopsy surveys of moose in the Anchorage bowl. In February 2018, we conducted a 3-day survey from February 23 – 25, resulting in 207 moose tissue samples collected. In February 2019, we conducted a 3-day survey from February 22 – 24, resulting in 237 moose tissue samples collected. After the award was approved in 2020, we conducted a 3-day survey from February 21 – 23, resulting in 216 moose tissue samples. In 2021, during the current reporting period, we conducted a 3-day survey from February 19 – 21, resulting in 247 moose tissue samples.

Samples from 2018 – 2020 were analyzed by the USGS Alaska Science Center Gene Lab and individual ID's and sex have been determined for each tissue sample. Samples from 2021 were run at the Alaska Department of Fish and Game Commercial Fish Gene Conservation lab due to retirements at USGS Alaska Science Center Gene Lab and we received individual IDs and sexes in September 2021. Preliminary results from all years (i.e., 2018 – 2021) indicate 1319 viable

tissue samples obtained through biopsy darting and roadkill sampling comprising 842 unique moose and 477 recaptures. Now that we have a complete dataset, we are beginning analyses to estimate population size, gender composition, exploitation rates, and survival of moose within the Anchorage. Our goal is to have results summarized and submitted for publication prior to final report.

**OBJECTIVE 2:** Develop methodology/technique for management biologists to estimate moose populations without being dependent on snow cover.

**ACCOMPLISHMENTS:** With 4 full surveys completed and individual moose identified, we can begin to assess the usefulness of this technique. We averaged 227 moose per survey which is more samples than we anticipated. Additionally, preliminary data from the full dataset show a recapture rate of individual moose > 30%, which is high for studies of large mammals. Based on the number of samples and recapture rate it is likely this technique will be an effective survey methodology for moose in small study areas. Biologist plan to test this technique outside of urban areas after this current project is complete.

## **II. SUMMARY OF WORK COMPLETED ON PROJECT TO DATE.**

Prior to this grant being awarded in February 2019, we had already conducted 2 ground-based biopsy surveys of moose in the Anchorage bowl.

In February 2018, we conducted a 3-day survey from February 23 – 25, resulting in 207 moose tissue samples collected.

In February 2019, we conducted a 3-day survey from February 22 – 24, resulting in 237 moose tissue samples collected.

In February 2020, we conducted a 3-day survey from February 21 – 2, resulting in 216 moose tissue samples collected.

During this reporting period, in February 2021, we conducted a 3-day survey from February 19 – 21, resulting in 247 moose tissue samples collected.

Samples from 2018 – 2020 have already been analyzed by the USGS Alaska Science Center Gene Lab and individual ID's and sex have been determined for each tissue sample. Samples from 2021 were run at the Alaska Department of Fish and Game Commercial Fish Gene Conservation lab. We obtained individual IDs and sexes from them in September 2021 and plan to have data analyzed for final report. We currently have data from all survey years and are beginning analyses to estimate population size, gender composition, exploitation rates, and survival of moose within the Anchorage

**III. SIGNIFICANT DEVELOPMENT REPORTS AND/OR AMENDMENTS.**

N/A

**V. RECOMMENDATIONS FOR THIS PROJECT**

We conducted our last ground-based survey in February 2021 and received data from Alaska Department of Fish and Game Commercial Fish Gene Conservation lab in late summer. We plan to have data analyzed and prepared for publication prior to final report.

**Prepared by:** David Saalfeld

**Date:** 12/21/2021