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-R-2-2020

PROJECT TITLE: Alaska Hare Seasonal and Annual Movements

PERIOD OF PERFORMANCE: July 1, 2018 – June 30, 2023

PERFORMANCE YEAR: July 1, 2020 - June 30, 2021; year 3 of a 5-year grant

REPORT DUE DATE: Sept 1, 2021

PRINCIPAL INVESTIGATOR: Richard Merizon and Chris Barger

COOPERATORS: DWC-Threatened, Endangered, and Diversity Program, University of Alaska-Fairbanks

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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: Evaluate capture techniques applicable to Alaska hares.

ACCOMPLISHMENTS: Capture techniques for Alaska hares were evaluated in Ekuk (~30 miles south of Dillingham) and the greater Nome area. A variety of capture techniques were tested throughout the study areas during the reporting period, primarily live box traps, bow nets and modified pen/box traps. In total, we captured 2 Alaska hares in Ekuk and 3 in Nome. One was captured with a bow net; one was captured with a live box trap and the remaining three were captured with modified pen/box traps. Interestingly, we had 8 captures in Nome (1 live box trap and 7 modified pen/box trap) but only 3 different individuals which, suggests the new trapping technique is quite effective. The modified pen/box trap consists of 100ft of chicken wire with 2 (4'x4') doors which are released by a trip line over a bait pile (Figure 1). Once the hare has tripped the main doors, there is a live box trap with a plexiglass back which looks like an opening in the pen. The live box trap ultimately traps and contains the hare. The trap is monitored remotely using satellite trap transmitters at all times, which minimizes the trapping time at the site. One hare in particular was captured with a modified pen/box trap at 4am and then recaptured at 6:30am 2.5 straight-line miles away.

FIGURE 1. Alaska hare captured in the Nome area using a modified pen/box trap.

OBJECTIVE 2: Deploy 15-20 GPS collars over a three-year period (FY19, FY20, and FY21) in at least two study areas.

ACCOMPLISHMENTS: Two Alaska hares were captured in Ekuk in mid-January 2021 and three Alaska hares were collared in the Nome area (March/April). All hares were collared using Telonics (TGW-40665) Globalstar Systems collars which provide daily movement data. The hare captured in Ekuk last fiscal year (January 2020) and three of the five new collars are still providing data as well. To date, eight GPS necklace collars have been deployed on Alaska hares. Two hares were captured and collared south of Kotzebue, three hares in Ekuk and three hares in Nome. Despite the low number of captured and collared individuals, an extraordinary amount of effort has been employed to locate, capture, modify capture techniques and collar this species in multiple, extremely remote areas across western Alaska (e.g., ~2,300 miles of snow machining in FY21). This species exists at very low density, is nocturnal, and highly elusive making it a particularly challenging species to capture and apply GPS tracking collars. However, through trials of capture techniques, to date, it appears that modified pen/box traps can be highly effective and less time intensive than bow nets. A combination of both modified pen/box traps and bow nets are likely the most effective means of capture moving forward depending on the circumstances.

FIGURE 2. Alaska hare with Telonics GPS collar that was captured in Ekuk.

OBJECTIVE 3: Estimate vital statistics including: survival, dispersal, and home range size.
ACCOMPLISHMENTS: No work has been completed towards this objective. This project is ongoing and principal investigators are still deploying GPS collars, evaluating capture techniques, and collecting data. From the preliminary data, Alaska hares have quite large daily movements up to 6 linear kilometers. However, once Alaska hares make a large movement they tend to stay in within a localized area for a short period of time. One of the largest home range sizes to date is approximately 14km by 6km in size, whereas snowshoe hares in this area have a home range of ~500m by 500m. Data collection is currently ongoing and will be reported in future Performance Reports. Currently, we are still receiving GPS data from 4 Alaska hares.

OBJECTIVE 4: Publish results in an internationally recognized, peer-reviewed journal and attend professional conferences.
ACCOMPLISHMENTS: No work has been completed towards this objective. This project is ongoing and principal investigators are still deploying radio collars, evaluating capture techniques, and collecting data.

II. SUMMARY OF WORK COMPLETED ON PROJECT TO DATE.

This project is also related to and close coordination with State Wildlife Grant: AKW-SWG-T-32-1, P23.0. Approximately, 812 fecal pellets were collected for genotyping in accordance with the above project. In year 3 of 5 we captured five Alaska hares which were fitted with GPS

collars. We spent an enormous amount of time modifying trapping techniques to improve catch rates and reduce physical time needed at the trapping site.

III. SIGNIFICANT DEVELOPMENT REPORTS AND/OR AMENDMENTS.

One Significant Development Reports was submitted during this reporting period (AKW-R-2-2019 SDR). As a result of broad and unforeseen impacts brought on by the Covid-19 global pandemic, the principal investigators submitted this SDR to indicate the intent to apply for a future amendment to the grant (around January 2023) to seek a 1-year extension so as to meet the objectives outlined in the original Project Statement. The pandemic caused numerous travel, logistical and organizational challenges that resulted in a loss of field efforts in the late winter/spring of 2020. Therefore, the principal investigators are adding an additional field season for the winter/spring of 2022.

IV. PUBLICATIONS

Currently, there are no publications, web-based, or other media project updates regarding the status of this project or cursory findings.

V. RECOMMENDATIONS FOR THIS PROJECT This project completed its third year of field work and is planned to continue two more years. One more year of additional fieldwork is required due to COVID-19 cancelations last fiscal year. Therefore, this project should likely be extended one additional year to complete the analysis and write-up stages. Next year will be the last field effort and we plan to deploy additional GPS collars and evaluate various capture techniques.

Prepared by: Chris Barger and Richard Merizon

Date: 13 August, 2021