FEDERAL AID INTERIM PERFORMANCE REPORT

Alaska Department of Fish and Game
Wildlife Restoration Grant

GRANT NUMBER: AKW-20 Wildlife Restoration FY2017

PROJECT NUMBER: 3.51 Caribou

PROJECT TITLE: Evaluation of management strategies to enhance harvest from southwest Alaska Caribou Herds

PROJECT DURATION: 1 July 2016 to 30 June 2018

REPORT DUE DATE: 1 September 2017; Resubmitted December 1, 2017

PRINCIPAL INVESTIGATOR: Nick Demma

COOPERATORS: Neil Barten

WORK LOCATION: GMUs 9, 10, 17, 18, 19; Southwest Alaska

Briefly describe how Federal Aid funds were spent on each active job, listing the results achieved during this segment period. If a job was not accomplished as planned, explain briefly why.

I.   PROGRESS ON PROJECT OBJECTIVES DURING LAST SEGMENT

OBJECTIVE 1: Estimate production, survival, recruitment, and causes of mortality of MCH neonates.
> We accomplished our objective of estimating production, survival, and recruitment of MCH calves, and cause of death of neonates (birth-2 weeks of age).

OBJECTIVE 2: Update the MCH telemetry database for evaluating survival of adult caribou.
> We accomplished our objective of updating the MCH database for evaluating survival of adult caribou.

OBJECTIVE 3: Evaluate survival and growth of MCH male caribou.
> We accomplished our objective of evaluating survival and growth of MCH male caribou.

OBJECTIVE 4: Report findings in appropriate scientific and popular venues.
> We made progress toward preparing a report summarizing the results of survival and growth of MCH male caribou.

II.   SUMMARY OF WORK COMPLETED ON JOBS IDENTIFIED IN ANNUAL PLAN THIS PERIOD

Job/Activity 1-a: Working with the DWC Region IV Biometrician, finalize analyses of calf production and survival for the period from 2011-2014.

Accomplishments: We determined pregnancy status of 56 known-age radiocollared cows $\geq$ 2 years old during mid-May 2017 to estimate age-specific calf production in MCH. Overall parturition rate of $\geq$ 3-year-old cows was 73%. Younger age classes (2- and 3-year-olds) continued to be parturient (19% and 63% respectively), which is indicative of good nutritional condition in the herd.

We radiocollared 77 neonates to evaluate early mortality and first-year survival. The radiocollared sample was distributed similarly between the 2 primary calving grounds in the upper Mulchatna River (n=38) and the upper Tikchik River (n=39). Early calf survival rates (birth-2 weeks old) were 0.35 and 0.58 in each calving ground, respectively. We examined mortality sites of calves that died during their first 2 weeks of life (n=28) to determine cause of death. Mortality sites were typically examined the same day they were detected. Predation was indicated in all 28 radiocollared calf deaths. By examining the amount, condition, and disposition of calf remains, and any signs (tracks, hair, feces) or observations of predators, we concluded that the deaths were caused by wolves (n=12), brown bears (n=11), golden eagles (n=3), and unknown predators (n=2).

We evaluated fall recruitment of the 2016 MCH calf cohort by conducting fall age/sex composition surveys. During October 14-15, 2016 we classified 5,195 MCH caribou for sex and age, and found an overall calf:cow ratio of 22 calves:100 cows, indicating low-moderate summer calf survival and fall recruitment.

Job/Activity 2-a: Consult with GIS Analyst and/or Analyst Programmer to finalize the MCH database to facilitate subsequent adult caribou survival analyses.

Accomplishments: We worked with our GIS Analyst to modernize the MCH database. Our GIS Analyst made significant progress developing a relational database comprising VHF and GPS telemetry data, captures and body measurements, mortality information, parturition survey results, and radio collar inventory and deployment information. The database is now functional, and we have begun entering back-logged data. We are working through final connectivity and server modifications to maximize database functionality and facilitate long-term survival analysis of radiocollared adults.

Job/Activity 3-a: Working with the DWC Region IV Biometrician, finalize analyses of the male caribou survival and growth data set.

Accomplishments: We worked with our Biometrician to conduct exploratory analysis on the MCH bull data. We analyzed seasonal survival, and characterized body weight, skeletal growth, and antler development of radiocollared bulls (n=103) from 4 months- to 5 years-of-age.

Job/Activity 4-a: Results of above analyses and annual survey and inventory efforts will be summarized and reported in a DWC Wildlife Technical Bulletin and scientific publications.

Accomplishments: We began drafting a DWC Technical Bulletin summarizing the results of the MCH bull study. We will consider publishing any noteworthy results in peer-reviewed journal.

III. SIGNIFICANT DEVIATIONS AND/OR ADDITIONAL FEDERAL AID-FUNDED WORK NOT DESCRIBED ABOVE THAT WAS ACCOMPLISHED ON THIS PROJECT DURING THIS SEGMENT PERIOD

In response to management concerns regarding lower-than-expected growth of the Mulchatna caribou herd, we conducted an intensive calf mortality study during May 2017 to evaluate newborn calf survival and determine cause of death for neonates. Accomplishments were addressed under Job/Activity 1-a.

Additionally, due to an unallowable expense on the FY2017, AKW-7 grant report, $124,457 will be debited to this grant in FY2018, AKW-23.

IV.   PUBLICATIONS

None

V. RECOMMENDATIONS FOR THIS PROJECT

None

Prepared by: Nick Demma

Date: September 1, 2017

Revised by: Brenda Bowers and Lem Butler

Date: December 1, 2017