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-20 4.41

PROJECT TITLE: Nelchina Brown Bear Demographics

PROJECT DURATION: July 2009 – June 2018

REPORT DUE DATE: 1 September 2017

PRINCIPAL INVESTIGATOR: Chris Brockman

COOPERATORS:

WORK LOCATION: Game Management Unit 13

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 Nelchina brown bear productivity, cub survival, annual rate of population change (λ), and compare the estimated population growth rate) to the change in density estimates from 1998 and 2011.

OBJECTIVE 2: Identify degree of calf/adult moose predation by collared bears, both within and outside the study's moose calving area. Data collected include:
i. demographics (age, sex, and reproductive class)
ii. locations of bears
iii. activity and identified kills
iv. isotope signatures for diet analysis

OBJECTIVE 3: Develop an outline for a brown bear management strategy in Unit 13. The outline will provide the basis for addressing future intensive management objectives for moose set by the Board of Game.

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

Job/Activity 1-a: Bear capture and monitoring. Completed in 2013.

Job/Activity 1-b: The demographics of collared bears, including sex and age composition, will be compared to historic capture data. Survival and reproduction parameters will be used to estimate λ (annual rate of population change). Analysis and reporting are in progress and expected to be complete by December 2017.

Job/Activity 2-a.: Bear capture and monitoring. Completed in 2013

Job/Activity 2b: Analysis complete. Reports published 2015 and 2017.

Job/Activity 3-a: Data objective 1, as well as historical records of bear harvest, will be incorporated into an outline of management strategies.

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

IV. PUBLICATIONS

Brockman, C. J. (2015). *Evaluation of brown bear predation on ungulate calves in southcentral Alaska using neck mounted cameras, GPS, and stable isotopes* (Doctoral dissertation, University of Alaska Anchorage).

Brockman, C. J., Collins, W. B., Welker, J. M., Spalinger, D. E., & Dale, B. W. (2017). Determining kill rates of ungulate calves by brown bears using neck-mounted cameras. *Wildlife Society Bulletin*, *41*(1), 88-97.

V. RECOMMENDATIONS FOR THIS PROJECT (optional)

Prepared by: Chris Brockman

Date: September 1, 2017