FEDERAL AID ANNUAL PERFORMANCE REPORT	**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-7 Intensive Management FY2017**

Project Number: 2.0 Moose

Project Title: Statewide Intensive Management for Moose Populations Identified as Important for Providing High Levels of Harvest for Human Consumptive Use and Predators Influencing Moose Population Status.

Project Duration: April 1, 2015 – March 31, 2020

Report Period: April 1, 2016 – March 31, 2017

Report Due Date: June 28, 2017; resubmitted July 27, 2017; resubmitted December 1, 2017

PRINCIPAL INVESTIGATOR: Cynthia Wardlow (RII), Doreen Parker McNeill (RIII), Todd Rinaldi (RIV), Tony Gorn (RV)

WORK LOCATION: Regions II, III, IV, and V

I.   PROGRESS ON PROJECT OBJECTIVES DURING LAST SEGMENT

Objective 1: Conduct more frequent and more robust surveys to estimate the population size and composition (bulls, cows and calves) of moose to evaluate if IM treatments are successful.

Region III

As part of our assessment of on-going predation control, a Geospatial Population Estimator (GSPE) survey was attempted during November in Units 20A and 20B, but were not conducted due to a lack of snow.

GSPE surveys were conducted in 4 separate areas of Unit 19A during March 2017 in response to the need to document moose abundance in relation to IM objectives. Conditions were adequate to assess the moose population status. The estimated population size was 6,300 moose, which is below the population objective. No comparable baseline data are available because surveys conducted during routine S&I activities do not compare with these large areas, methods, and intense survey protocol.

A harvest survey of 40-80 households was conducted during October 2016 in Alatna and Allakaket of Unit 24B. Survey questions related to catch-per-unit-effort (hours per hunt trip, miles traveled per hunt trip, cost per hunt trip). Data is still being analyzed and will be reported when all surveys are complete.

Region IV

Due to inadequate survey conditions Region IV did not conduct any moose surveys in Units 13 and 16 during FY2017.

Region V

A moose survey was conducted in Unit 22 as part of Federal Aid project no. 1.0. No additional work was required under AKW- 7 to improve the estimates of population size.

Objective 2: Estimate calf production, survival and causes of mortality using radio collars and or camera collars to determine if a) calf mortality can be reduced to meet IM population and/or harvest objectives or b) to evaluate the effects of the IM treatment.

Region V

The neonate moose capture project was not conducted in Unit 22 during the reporting period due to lack of personnel.

Objective 3: Estimate adult moose survival rates using radio collars to evaluate the effects of the IM treatment.

Region III

To assess moose mortality in the predation control area of Unit 24B, radiotracking flights for 129 radiocollared moose were conducted on April 9&30, June 3, July 1&28, September 3, October 1, November 1, and December 11 of 2016 and on January 25 and March 13 of 2017. The estimated survival rate was 52% in the Upper Koyukuk Management Area and 84% in the non-treatment area.

Region IV

Twenty-four radio collars were deployed in Unit 9 in April 2017. These collars will be monitored to estimate adult survival during the next year.

Objective 4: Monitor moose nutritional status to evaluate the influence of nutrition on moose population status and evaluate IM population objectives.

Region III

During 6-12 March 2017, 60 short-yearlings were captured and weighed in Unit 20B to monitor the nutritional status of moose in the area. The average weight of moose in the MFMA area was 382.5lbs (Males = 369.9lbs, Females = 366lbs). This was 19lbs heavier than the 363.6lb average from those captured in 2010. In Central Unit 20B, the average weight was 394lbs (Males = 397.2, Females = 388.6). This was 23.9lbs heavier than those moose captured in 2009. We feel that these increase in weights during the 2017 capture may indicate that moose in both MFMA and Central Unit 20B may be less   nutritionally stressed compared to the moose 2009 and 2010 when densities were higher in this area. This method of assessing moose nutritional status was not used in Unit 20A during this reporting period.

Objective 5: Monitor forage abundance and utilization to evaluate browse abundance and quality and determine habitat capability to develop reasonable IM population objectives.

Region II

Browse surveys are being conducted to evaluate winter forage availability in Unit 15C to determine if the intensive management objectives are attainable and whether or not the moose population can be maintained at the current population size. Measurement of winter forage availability and utilization in Unit 15C began in spring of 2016 and continued in 2017. Protocols follow those established in Paragi et al. (2008) and Seaton et al. (2011). Survey design estimates current annual growth of forage species and the amount removed each year as an index of forage availability.

In 2016, 39 sites were sampled using the Seaton browse removal method and plants were dried to create species mass curves. Feces were collected at each site for microhistology/nutrient analysis. In 2017, 40 sites were sampled with the Seaton browse removal method, again with feces collected at each site for microhistology/nutrient analysis. Additional plants were dried to improve mass curves for species with minimal numbers of plants sampled in 2016 and voucher specimens pressed, dried, and mounted for all major species.

Summer browse surveys will be utilized to quantify percent cover and species composition in 40 plots along access corridors in Unit 15C and delineate major browse distribution. Fresh feces will be collected at plots to be analyzed for diet composition, crude protein, and nondigestible fiber. Samples of major browse species will be clipped for possible future nutrient analysis.

Data analysis is currently ongoing, and results will be reported when the project is complete (FY 2021).

Region IV

Region IV did not conduct any activities relevant to this grant objective in FY2017 due to personnel shortages, logistical limitations, and lack of adequate conditions.

Objective 6: Investigate and monitor wolf, black bear and brown bear abundance relative to defined IM objectives.

Region II

Weather conditions have not allowed surveys of wolf numbers in Units 15C to be completed for several previous years. During February and March of 2017, 18 wolves were captured and collared in Unit 15C to aid in wolf abundance monitoring. Preliminary late winter data from collared individuals suggest 4–5 packs within the Unit 15C IM area. Further flights throughout the year have been planned to improve estimates of wolf abundance and pack dynamics in Unit 15C. Bear abundance studies were not completed during FY2017 and are not currently planned for future years.

Region III

A Minimum Count Wolf Survey was conducted on 4–9 April 2017 in a 4,752 mi^2 portion of Unit 24B, and 59 wolves were observed during the flights. Tracking and light conditions were adequate to obtain a sample necessary to determine that a minimum number of wolves were present in the area that includes the predation control area.

Region IV

Ten VHF and 10 GPS radio collars (including satellite data service) were purchased for deployment on wolves in Unit 16. In February 2017 four wolves were collared in two packs during a planned moose and wolf capture effort. One tracking flight has been completed to monitor wolf movement. Weather conditions were not conducive for wolf surveys in Unit 16.

There was no additional progress on this objective in Unit 13 during this reporting period due to weather and logistical limitations.

Statewide

In response to a public perception that liberalizing hunting of black and brown bear could reduce bear predation on moose, the department is developing a database to track the changes in bear regulations and analyzing the response of the bear population to liberalized seasons and bag limits. The database is available for future analysis.

Objective 7: Report findings in appropriate scientific and popular publications.

The division developed and submitted annual reports to the Board of Game on predator control programs that were funded in part by this grant. The following annual reports can be found at http://www.adfg.alaska.gov/index.cfm?adfg=intensivemanagement.programs by selecting the program link.

Region II

- Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf Predation Control in Game Management Unit 15A. February 2017.

Region III

- Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf, Black Bear, and Grizzly Bear Predation Control in Game Management Unit 19A. February 2017.

- Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf, Black Bear, and Grizzly Bear Predation Control in Game Management Unit 19D East. February 2017.

- Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf Predation Control in Game Management Unit 24B. February 2017.

- Operational Plan for Intensive Management of Moose in Game Management Unit 21E during Regulatory Years 2017–2022. February 2017.

Region IV

- Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf Predation Control in Game Management Unit 13. February 2017.

- Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf Predation Control in Game Management Unit 16. February 2017.

Region V

There are no predation control programs in Region V that require an annual report to the Board of Game.

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

One activity was previously reported for this grant that was unallowable because it was not significantly different in nature from activities conducted to accomplish AKW-20 objectives; specifically, the use of a helicopter to conduct a moose twining survey in Unit 19D. This activity was reported in the AKW-20, project 1.73 report, and the costs are being corrected through an adjustment to FY2018 AKW-23. Even though progress was made on similar work conducted under AKW-20, no work was conducted on this AKW-7 enhanced objective.

In most cases personal services were not charged to AKW-7 field projects. The project leads were asked to provide a list of employees who worked on the AKW-7 field project

and to provide an estimate of how much staff time each employee should have charged to the AKW-7 field project. A cost estimate of personal services was produced for each employee on a field project-by-project basis and we prepared detailed spreadsheets to show the adjustment between the AKW-7 and base grants. We understand that the adjustment will be done between FY2018 grants.

There were also several activities charged appropriately to AKW-20 were included in previous submissions of the AKW-7 report and have been removed from this report. These activities were identified based on a close comparison of project reports, audit trails, and interviews with principal investigators, and have been subsequently removed from the AKW-7 reports, including moose surveys in Units 19D and 22. No funds were spent on these activities from this grant.

As a result, $72,648 will be debited to the grant for personal services charged to AKW-20, project 1.0, and $21,261 will be credited from AKW-20, project 1.73, for unallowable expenses, resulting in a net change of $ -51,387 for FY2017 AKW-7, project 2.0, will be applied to FY2018 AKW-23.

III.   RECOMMENDATIONS FOR THIS PROJECT

The department will request that this grant is terminated on June 30, 2018. No further activities will be conducted under this grant after that date.

Prepared by: Nathan Soboleff

Date: June 28, 2017

Revised by: Brenda Bowers and Lem Butler

Date: December 1, 2017