

Wildlife Restoration MULTI-YEAR GRANT INTERIM 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-B-R5-2020 Amendment #1

PROJECT NUMBER: P1.0

PROJECT TITLE: The Status of Moose and Factors Influencing Their Populations

PERIOD OF PERFORMANCE: July 1, 2019 - June 30, 2021

PERFORMANCE YEAR: July 1, 2019 - June 30, 2020

REPORT DUE DATE: Submit to FAC August 27, 2021

PRINCIPAL INVESTIGATOR: Phillip Perry, Region V Management Coordinator

Authorities: 2 CFR 200.328
2 CFR 200.301
50 CFR 80.90

II. SUMMARY OF WORK COMPLETED ON PROJECT TO DATE.

Activities by Unit:

Unit 18:

- Conduct fall aerial sex and age composition surveys and calf production surveys in selected portions of Unit 18
 - In late October and November 2020 Fish & Game staff conducted moose composition surveys in the Lower Kuskokwim River, Lower Kuskokwim Tributaries and Andreafsky survey areas in GMU 18. The Lower Kuskokwim and Lower Kuskokwim Tributaries survey areas were surveyed over 9 days from 4 November to 27 November. Survey flights for the Andreafsky survey areas occurred on 31 October to 2 November 2020. On the mainstem of the Kuskokwim River Pilots and staff observed 1142 moose. This included 671 cows, 168 antlered bulls, and 303 calves, of which included 37 sets of twins. Bull to cow ratios were estimated at 25 B:100C and have declined from 43 B:100C estimated in 2019. Calf to cow ratios remained relatively stable from 2016 (49 c:100C) to 2020 (45 c:100C). Pilot-observer pairs observed 568 moose in the Kuskokwim Tributaries Area including 280 cows, 117 antlered bulls and 111 calves, of which included 9 sets of twins. Bull to cow and calf to cow ratios were estimated at 63 B:100C and 40 c:100C, which is a decline from 83B:100C and 62c:100C estimated in 2015. In the Andreafsky area 1465 moose were observed including 753 cows, 481 antlered

bulls and 264 calves, of which included 33 sets of twins. Bull to cow and calf to cow ratios were estimated to be 64 B:100C and 35c:100C, respectively.

- Conduct spring aerial surveys (trend area surveys, distribution surveys, or calf production surveys) in selected portions of Unit 18 to assess population trend and recruitment.
 - We flew spring twinning surveys on the Yukon River in late May 2021. In six days of flying we observed a total of 173 cows accompanied by calves. Twinning rates were 18% (n=73) in the Lowest Yukon area, 36 % (n=50) in the Andreafsky area, and 28 % (n=50) in the Paimiut area. We did not find sufficient cows with calves to generate an estimate on the Kuskokwim River due to advanced leaf out conditions and moderate population size compared to moose populations on the Yukon River.
- Conduct geostatistical population estimation surveys, (regular) population estimation surveys, riparian zone minimum direct count surveys, or other appropriate census techniques, to estimate the size of moose populations in selected portions of Unit 18.
 - GSPE surveys were conducted on the entire Yukon River in GMU18 in February 2021. The resulting population estimate of observable moose was 23,669 moose. This includes 12,031 (8,023-16,039) moose in the Lowest Yukon survey area, 6,852 (5,470 – 8,233) moose in the Andreafsky survey area and 4,786 (4,090 – 5483) moose in the Paimiut survey area.
- Conduct fall and/or midwinter trend area surveys or distribution surveys of the Kuskokwim River and its major drainages to assess the status and estimated size of the Kuskokwim River population.
 - No trend counts were conducted in Unit 18 in 2020.
- Monitor moose numbers, distribution, and utilization of the smaller drainages in Unit 18 through trend area surveys, distribution surveys, public contacts, and field observations.
- No moose counts were conducted in these areas during the reporting period.
- Monitor overall hunting activity through, harvest reporting, hunter contacts, and field observations.
 - We analyzed general season harvest reports for RY20 and found that 525 moose were reported taken in Unit 18 in the Yukon drainage and along the coast. This is much lower than recent years likely due to the impacts of COVID-19. Hunters also reported harvesting 12 moose in the Kanektok River drainage and 13 in the Goodnews River drainage. We contacted moose hunters opportunistically throughout the year. Harvest was 332 moose in RM615 in RY20.
- Monitor other mortality factors through public contacts and field observations.
 - Both black and brown bears are regularly seen during spring twinning surveys in close proximity to cow moose with calves. We received more reports from hunters/trappers and the public regarding wolf kills than in the past several years.
- Assess habitat quality on the Kuskokwim River through browse surveys and field observations.
 - No browse removal study was completed in this reporting year.
- Capture adult or short yearling moose to attach radio collars, assess body condition in relation to habitat quality, and collect samples for disease and contaminant profiles. (All animal capture activities will follow the protocols established in the ADF&G Division of Wildlife Conservation “Animal Welfare Policy” and its wildlife capture and restraint manual.)

- No capture work was performed during this reporting period.
- Monitor distribution, movement, and dispersal of collared moose using radio telemetry data and aerial survey observations.
 - We have periodically monitored the 24 cow moose that have been fitted with radio collars. We collected data on the location of the moose as well as the presence of a calf or calves.
- Work with the Association of Village Council Presidents (AVCP), Kuskokwim Native Association (KNA), The Kuskokwim Corporation (TKC), U.S. Fish and Wildlife Service (FWS), Unit 19 and 21A, E area biologist, affected Advisory Committees, local moose hunters, and other users to resolve conflicts between upriver and downriver uses.
 - Much of the upriver-downriver conflicts along the Yukon River have been resolved as moose populations have become established and increased in the downriver areas. Along the Lower Kuskokwim River, we have implemented a quota-based registration permit moose hunt and the availability of hunting opportunity has helped alleviate the conflicts between user groups. We also fielded numerous questions regarding hunting moose upriver on the Kuskokwim River.
- Continue educational efforts toward increasing moose populations in the smaller drainages in Unit 18.
 - Along with the USFWS, we continue to provide summary information at meetings arranged by villages, Advisory Committees, and Regional Advisory Councils.
- Use incentive programs and/or public education to improve understanding of hunting regulations and the value of conserving moose populations, and to obtain better harvest data through increased harvest reporting.
 - We have written numerous newspaper articles, New Releases and PSA's to encourage harvest reporting and explain why it is important.
- Implement the cooperative moose management strategy for the Kuskokwim River moose population with participation from the Lower Kuskokwim Advisory Committee, the Yukon Delta National Wildlife Refuge (YDNWR), and interested local groups and communities.
 - We attended and presented information at several public meetings including: Lower Kuskokwim Advisory Committee meeting; the Bethel AC, the Y-K Delta Regional Advisory Council meeting. Many advisory committee's chose not to meet this year due to the impacts of COVID-19 and resultant language barriers that could not be accommodated telephonically.
- Develop an ongoing cooperative moose management strategy for the moose population within the Togiak Refuge portion of Unit 18 with local village leaders, members of the Central Bering Sea Advisory Committee, the Regional Advisory Council, the Togiak National Wildlife Refuge (TNWR), and interested local groups and communities.
 - We talked with the local Advisory Committee and community members of Quinhagak, Good News, and Platinum about the moose management strategy in this area.

Unit 22:

- Conduct a geospatial population estimation (GSPE) survey or a riparian zone minimum direct count survey in a portion of Unit 22 to monitor trends in population size, sex/age composition, and recruitment.
 - The department completed a moose abundance survey using Adaptive Cluster Sampling (ACS) in the central portion of Unit 22A within the Unalakleet River drainage during March of 2021. The sampling technique utilizes the GSPE survey grid and a sampling design that allows for the sample of selected survey units to be determined based on the distribution of moose. Simulations completed using previously completed GSPE survey data from the Unit 22A survey area indicated that both techniques produce unbiased estimates of moose abundance, and that ACS may provide gains in efficiency and reduce the overall sample of survey units. The estimate of abundance within the survey area was 766 (90% CI:643-888).
- Complete trend area surveys, sex and age composition surveys, or other aerial surveys (where appropriate in Unit 22) during late fall and early spring to provide an index of moose population status and trends, sex and age composition, and yearling recruitment.
 - Staff completed fall composition surveys in the central portion of Unit 22A within the Unalakleet River drainage in November of 2020. We classified 297 moose resulting in an estimate of 122 bulls:100 cows and 34 calves:100 cows. Similar results were found during a composition survey completed in the fall of 2016 suggesting that the bull:cow ratio in the area is well above the management objective of 30 bulls:100cows.
- Monitor human and natural mortality factors affecting the population.
 - Human harvest was monitored through the harvest ticket/registration permit reporting system and Community-based Harvest Assessment surveys. No surveys were attempted to determine natural mortality rates of Seward Peninsula moose.
- Evaluate hunting mortality by analyzing all moose harvest data.
 - Hunt reports were received for 2 resident fall bull registration permit hunts (RM840 including hunt areas: Unit 22C, Unit 22B West of the Darby Mountains and Unit 22D, and RM841 in the central portion of GMU 22A), 2 resident antlered bull winter registration hunts (RM843 in GMU 22B west of the Darby Mountains, and RM844 in the central portion of Unit 22A), 1 nonresident bull fall registration hunt (RM855 in GMU 22E) and a nonresident bull fall draw hunt (DM845 in a portion of GMU 22B). Harvest from other areas of the unit was monitored by harvest ticket report cards (GM000). Total reported harvest for Unit 22 during the 2020-2021 reporting period was 220 moose (GMU 22A-66, 22B-42, 22C-29, 22D-48, 22E-35). The Department documented the harvest of 180 moose in 2019-2020, 204 moose in 2018-2019, and 188 moose in 2017-2018 through similar reporting methods.
- Improve harvest reporting through public education and improved communication and by conducting Community-based Harvest Assessments.
 - The importance of harvest reporting was emphasized to registration permit recipients, village license vendors, and hunters in Unit 22 communities. Public service announcements were posted in Nome and all residents of Unit 22 were notified by radio announcements. Compliance with reporting requirements has

improved in the registration hunts in the Nome area; however, village surveys remain a more effective method of obtaining village harvest data.

- Evaluate hunting regulations and recommend changes, if necessary, for conservation purposes.
 - Hunting regulations were evaluated at an annual Advisory Committee meeting and an annual Regional Advisory Council meeting.
 - A proposal was submitted by the department to the BOG and to adopt a registration permit and reduce the length of the hunting season for moose in Unit 22D Remainder in order to more effectively maintain harvest at sustainable harvest levels. Hunting in this area was first administered as a registration permit during the reporting period. A harvest quota of 17 bulls was established and hunting in the area was subsequently closed by emergency order on September 11, 2020 with a final reported harvest of 16 bulls.
- Use incentive programs and/or public education to improve understanding of hunting regulations and the value of conserving moose populations, and to obtain better harvest data through increased harvest reporting.
 - Staff attended Advisory Committee meetings, federal Regional Advisory Council meetings, and the annual Reindeer Herders Association meeting to improve public understanding of harvest reporting and status of moose populations. Community meetings were held in Brevig Mission and Teller to provide an overview of the Unit 22D Remainder moose population, the regulatory process and discuss the effect of proposed regulatory changes for the area.

Unit 23:

- Conduct geostatistical population estimation surveys, distribution surveys, sex and age composition surveys, and calf survival counts where appropriate to monitor trends in population density, sex and age composition, and recruitment.
 - A modified GSPE was conducted during this reporting period in the Unit 23 Selawik Count area in April 2021. The estimate is 1036 moose with a 90% confidence interval of 866-1206 moose. This is a relative precision of 16%. The recruitment rate estimated from this survey is 9 %.
 - The population estimate survey was a collaborative effort between NPS, USFWS and ADF&G.
- Monitor hunting activity and harvests through the statewide harvest ticket system, Community-based Harvest Assessments, public contacts, and field observations.
 - We monitored hunting activity and harvests through the statewide harvest ticket, registration permit systems, and Community-based Harvest Assessments: 484 hunters reported taking 130 moose through the statewide harvest ticket system and the registration permit system. Community-based Harvest Assessments were not conducted in Unit 23 this year. Previous Community-based Harvest Assessments suggest residents of Unit 23 have taken 300 moose annually during recent years, substantially more than indicated by harvest ticket hunt reports. No nonresident permits were issued.
- Continue the Unit 23 User Issues planning process to minimize user-group conflicts in relation to biological parameters of moose.
 - Staff participated in the Hunter Success meetings in Buckland, Noorvik, and Kiana.

- Use incentive programs and/or public education to improve understanding of hunting regulations and the value of conserving moose populations, and to obtain better harvest data through increased harvest reporting.
 - We spoke with many local and nonlocal hunters to improve the accuracy of moose harvest data. Public Service Announcements were recorded for radio broadcast to help educate the hunters about regulations and acquiring the necessary permits. This year, harvest reports were actively pursued by staff and nearly 90% compliance was achieved.
- Monitor predator populations and other mortality factors by logging bear and wolf observations during moose surveys, and through field observations and public contacts.
 - Incidental observations of bear, wolves, and other wildlife species were recorded during moose surveys during April 2021. Due to small sample size, no additional analysis was completed.
- Examine dead moose to look for causes of death, disease, mineral deficiencies, and contaminants.
 - Locations of moose mortalities were noted during GSPE census surveys in April 2021, but no site visits were completed due to determine cause of death.

Unit 26A:

- Survey unit-wide riparian zones and other suitable areas of willow habitat, using trend area surveys, riparian zone minimum direct count surveys, or other appropriate survey techniques to estimate the moose population trend in Unit 26A.
 - We conducted a minimum count and recruitment survey in the count survey area (i.e., population census) in Unit 26A in April 2021. We counted a total of 437 moose in the trend count area. There were 349 adults and 88 short yearlings (20%) that had survived the winter. Recruitment the previous year was identical.
- Conduct a yearly fall aerial sex and age composition survey of the Colville River population.
 - We were unable to complete this survey in the fall of 2020 due to low snow coverage prior to civil daylight disappearance. In 2014, we conducted a fall sex and age composition survey from 5–9 November. We found 26 bulls, 61 cows, 7 calves for a total of 94 moose. The bull:cow ratio was 42B:100C. Calves were 7.4% of the population with a calf:cow ratio of 12CA:100C
- Conduct spring, summer, and fall radio telemetry surveys to examine calf production and survival and adult distribution and mortality rates.
 - Due to the aging nature of the collared sample, we discontinued monitoring of collared moose in this population.
- Monitor predator populations and other mortality factors by conducting wolf population surveys, logging bear and wolf observations during moose surveys, and through field observations and public contacts.
 - We observed six wolves, four brown bears, and one lynx in the core moose habitat during the spring trend count of 2021. No musk ox or wolverines were observed during this survey.
- Examine dead moose to look for causes of death, disease, mineral deficiencies, and contaminants.
 - We did not observe or examine any moose mortalities in this reporting period.

IPR Hunter Information & Training (HIT) Program SFY20

- Evaluate quantity and quality of moose browse in portions of Unit 26A.
 - No moose browse work was conducted in RY21.
- Monitor hunting activity and harvests through the statewide harvest ticket system, Community-based Harvest Assessments, public contacts and field observations.
 - Drawing hunts have remained closed due to low population status. Hunt report information from RY20 indicates that 1 moose was by resident hunters.. Three other hunters reported hunting but were not successful.
 - Community-based Harvest Surveys were not completed by Division of Subsistence in Barrow and other North Slope villages during this reporting period.
- Develop updated population objectives in cooperation with the public and other agencies.
 - We worked with the North Slope Borough Fish and Game Management Committee to discuss population and management objectives. We completed the moose Operational Report and Plan.

III. SIGNIFICANT DEVELOPMENT REPORTS AND/OR AMENDMENTS.

IV. PUBLICATIONS

None.

V. RECOMMENDATIONS FOR THIS PROJECT

The Alaska Department of Wildlife Conservation recommends continuing this project.

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