

**MOOSE
ANNUAL SURVEY AND INVENTORY**

STATE: Alaska

GRANT AND SEGMENT NUMBER: AKW-4 Wildlife Restoration FY2015

PROJECT NUMBER: 1.0

PERIOD: 1 July 2014 – 30 June 2015

PROJECT LOCATION: Statewide

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

REPORT DESCRIPTION: This performance report describes moose survey and inventory activities. Regionwide activities are listed before specific activities by game management unit.

**The Status of Alaska Moose and Factors Influencing Their Populations in
Region I**

Region wide Activities:

ACTIVITY 1: Provide information to state and federal regulatory processes on moose management.

Data associated with moose populations and harvest were provided to the Alaska Board of Game and Regional Advisory Council during their regularly scheduled meeting (winter 2015).

ACTIVITY 2: Monitor the harvest through analysis of registration, Tier II, and drawing permit data including collection of incisors for aging and photos of antlers.

Information on days of effort, and location of successful and unsuccessful hunts was collected from all hunters via permit hunt reports.

Unit 1A: Two bull moose were harvested, and incisors were collected for aging these animals. Photos of each set of antlers were also obtained. Hunter success rate was 11.5%. In addition to these moose, 1 bull was harvested during the 1A federal subsistence season.

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Unit 1B: Forty five bull moose were harvested, and incisors were collected for aging these animals. Photos of each set of antlers were also obtained.

Unit 1C: Forty two bull moose were harvested. Incisors were collected for aging from all but a few of the moose, and antler photos were taken of most of the bulls. Within the Gustavus portion of Unit 1C, all bulls taken at Gustavus were checked for antler configuration because of the spike fork 50" or 3 brow tine antler restriction hunt.

Unit 1D: Twenty two bulls were harvested. Incisors, antler measurements, antler point counts, and antler photos were collected from each of the harvested bull moose.

Unit 3: Fifty seven bull moose were harvested. Incisors were collected for aging and antler photos were obtained from these moose.

Unit 5: Forty-nine bull moose were harvested throughout the unit. Incisors were collected from all harvested bull moose, and photos of antlers were obtained for nearly all specimens.

ACTIVITY 3: Collect anecdotal information about Region I moose populations through contacts with hunters.

Staff in Douglas and those in the outer offices of Haines and Yakutat discussed moose management with hunters during the permitting process as well as when hunters dropped off their moose jaws and/or hunt reports. In addition, Douglas staff spent time in the field at Gustavus and Haines during the moose hunts to collect samples and to interact with hunters and to discuss moose populations and moose management. Douglas staff attended Advisory Committee meetings in Juneau, Haines, Yakutat, and Gustavus to discuss moose management issues. Staff also conducted public meetings in Haines, and Gustavus to specifically address moose management issues.

Staff in the Petersburg area office discussed moose management and the status of the Unit 1B and 3 moose population with members of the Southeast Regional Advisory Council and interested hunters from Petersburg, Wrangell, Kake and other communities. During fall 2014, staff again collected anecdotal information on the number of bulls, cows, and calves observed by hunters during the moose hunting season by way of a question on the RM038 moose registration permit hunt report.

ACTIVITY 4: Conduct aerial surveys to assess sex and age composition of moose in key management areas of the region.

Sex and age composition was attained in 1C (Gustavus, and Berners Bay) and 1D.

Unit 1B: In adequate snow cover and limited pilot availability prevented a sex and age composition survey of the Stikine River moose population.

Unit 1C: Two hundred twenty eight moose were counted in 2 areas, Gustavus and Berners Bay (26 bulls, 39 calves, 101 cows and 62 moose of unknown sex).

Unit 1D: One hundred forty-seven moose were counted (0 bulls, 13 cows, 12 calves, and 122 unknown sex). Lack of winter snow resulted in surveys being conducted in March after antler drop during unfavorable survey conditions.

Unit 5A-Yakutat forelands: No surveys were conducted during RY14.

ACTIVITY 5: Conduct calf production surveys as time and budget allows.

No calf production surveys were conducted in the Petersburg Area due to sightability problems associated with leaf-out of vegetation.

Unit 1C: Productivity surveys were conducted in Gustavus and Berners Bay for the sample of collared cow moose. Both ground tracking and helicopter tracking were used to locate the animals and determine if they had a calf.

Activity 6: Conduct moose browse surveys and habitat analysis on discreet moose winter ranges throughout Region I.

No browse surveys or habitat analyses were conducted during this report period.

Activities by Unit

Unit 1B:

Activity 1: Obtain age estimates of harvested moose by sectioning incisor teeth.

Incisors from all 45 bull moose harvested were collected and sent to a lab for aging.

Activity 2: Collect information on age and antler architecture of all harvested moose to evaluate current antler restrictions.

The 2014 fall season was the 6th year of the liberalized season where moose with 2 brow tines on each side were legal for harvest. Age data collected from 18 bulls that had two brow tines on both antlers had a median age of 4 years, which was less than desired under the current selective harvest strategy.

Unit 1C:

Activity 1: Do at least one sex and age composition survey each of the Berners Bay, Taku River, Endicott/St. James Bay, and Gustavus Forelands populations.

Two hundred twenty eight moose were counted in 2 areas, Gustavus and Berners Bay (26 bulls, 39 calves, 101 cows and 62 moose of unknown sex).

Surveys were not conducted in the Taku River or in the Endicott River.

Activity 2: Monitor habitat conditions on the Gustavus Forelands by ground surveys of willow browse, using standard counts of number of leaders, amount of annual production, and level of browsing by moose.

Browse surveys were not conducted during this FY.

Activity 3: Monitor radio collared moose in Gustavus and Berners Bay to provide insight into moose body condition, pregnancy status, survival, and movement patterns.

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Gustavus: Thirty one collared moose were monitored.
Berners Bay: Thirty three collared moose were monitored.

Unit 1D:

ACTIVITY 1: Do at least one sex and age composition survey of the Chilkat Valley population.

Unit 1D: One hundred forty-seven moose were counted (0 bulls, 13 cows, 12 calves, and 122 unknown sex).

Activity 2: Monitor habitat conditions in the Chilkat Valley by ground surveys of willow browse, using standard counts of number of leaders, amount of annual production, and level of browsing by moose.

Browse surveys were not conducted during this report period.

Unit 2

Activity 1: Document reported moose sightings in Unit 2.

There were no reports of moose in GMU 2 during this period.

Unit 3

Activity 1: Opportunistically collect anecdotal information about moose populations of Mitkof, Wrangell, Kupreanof, and adjacent islands.

This was accomplished during the sealing of bears and in talking to moose hunters and deer hunters.

Activity 2: Obtain age estimates of harvested moose by tooth section.

Teeth were obtained from 55 of the 57 bulls harvested and submitted for age analysis.

Activity 3: Collect information on age and antler architecture of all harvested moose to evaluate current antler restrictions.

The 2013 fall season was the 5th year of the liberalized season where moose with 2 brow tines on a side were legal for harvest. Age data collected from 18 bulls that had two brow tines on both antlers had a median age of 6 years, which remained in keeping with the current selective harvest strategy.

Unit 5

Activity 1: Conduct at least one sex and age composition survey each for the Yakutat Forelands, Nunatak Bench, and Malaspina Forelands populations.

Due to lack of snow no surveys were conducted during the report period. Surveys for the Yakutat forelands, Nunatak Bench and Malaspina Forelands are planned for FY15.

The Status of Alaska Moose and Factors Influencing Their Populations in Region II

Region wide Activities:

ACTIVITY : Prepare biennial regional moose management reports.

Moose management report was drafted and submitted for publication in 2014. Staff continue to collect information for preparation of future reports. The department is transitioning to a 5-year report and plan. The next report will be published in 2016.

ACTIVITY : Conduct aerial sex and age composition surveys in all units to determine status, trend, productivity, and mortality of moose.

Surveys were completed in selected hunt areas within individual GMUs. See unit specific activities.

ACTIVITY : Monitor the moose harvest through field observations, hunter harvest reports, and contact with hunters.

These are standard activities accomplished in each office. See unit specific activities.

ACTIVITY : Provide information to state and federal regulatory processes on moose management.

Staff routinely interact with federal staff and discuss management of moose relative to the respective regulatory systems. Staff prepared information for presentation to the state Board of Game meeting in 2015.

Activities by Unit:

Unit 6

ACTIVITY : Moose composition surveys were conducted in November/December 2014 in Unit 6B using a modified Geospatial Population Estimate technique. By survey completion, 102 moose were observed. Twelve of these moose were bulls, 66 were cows, and 24 were calves. Using these numbers, 18 Bulls: 100 Cows (B:C) and 36 calves: 100 Cows (c:C) were observed.

Moose population surveys could not be completed this year due to lack of snow. However, a recruitment survey was flown in 6A West. By survey completion, 160 moose were observed, 65% of the last population estimate (RY08) of 245 moose. Twenty (12.5%) of these moose were calves. One moose was observed with small antlers. Using these numbers, 14 calves: 100 Adults (c:A) were observed, a substantial improvement from the 2008 survey of 4 (c:A).

The twinning surveys in the Martin River Drainage (Unit 6B) proved difficult to find moose. This may be a result of leaf emergence which was more advanced than ideal but also, could be just related to lower moose densities. Also, more predators were observed and moose may be more concealed. Only 6 parturient cows were observed, four with twins and two with a single

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calf. Although this sample size is inadequate to be considered representative it constitutes a 66% twinning rate.

The Unit 6C twinning survey found 134 moose and yielded a similar number of parturient cows relative to peak counts in other years with 21 parturient cows observed. Of these cows, 16 had twins and 5 had single calves. Although this sample size is also less than ideal to be considered representative a 76% twinning rate was observed.

We observed 202 moose in 2.5 days of survey work. The cumulative twinning rate for the two areas is 74%. Although sample sizes are inadequate, habitat does not seem to be the primary limitation on these populations.

ACTIVITY : Issued 194 registration permits for a total harvest of 33 moose. General season harvest tickets were used by 49 hunters which took 18 moose from areas open to them.

Activity: Genetic samples were collected and submitted for a “founder effect” study and are currently being analyzed.

Units 7 & 15

ACTIVITY : Survey conditions were poor to nonexistent for the Kenai Peninsula during this reporting period. A composition survey was conducted in one count area in Unit 15A, which tallied 86 moose, a bull:cow ratio of 10:100, and 23% calves. The count conducted was a poor representation of the entire Unit and should not be compared to previous years’ data. No composition surveys were conducted in Unit 15B. Composition surveys were conducted in 3 count areas in Unit 15C. Survey conditions were poor but 897 moose were counted, producing a bull:cow ratio of 26:100, and 20% calves. No composition surveys were conducted in Unit 7.

ACTIVITY : Hunter harvest and participation increased significantly since the last reporting period with the liberalization of hunting regulations due to a documented increase in bull to cow ratios. Two hundred and five bulls were taken during the general season, with an additional 33 moose taken by drawing permits, and 14 animals harvested under the federal subsistence season. One thousand six hundred and sixty-nine hunters participated during the general season and an additional 98 are known to have participated in the state and federal permit hunts.

ACTIVITY : Skilak Loop Wildlife Management Area: provide opportunities to view moose in cooperation with Kenai National Wildlife Refuge. No explicit activities were conducted to aid in moose viewing. The Skilak Loop Wildlife Management Area remained closed to moose hunting.

ACTIVITY : No population (GSPE) surveys were conducted during the reporting period due to below normal snow fall and poor survey conditions.

Unit 14C

ACTIVITY : No moose surveys were flown this year due to lack of snow cover which resulted in very poor survey conditions.

ACTIVITY : 135 moose were harvested during the reporting period including 29 cows and 106 bulls.

Submitted by: Gino Del Frate, Region II Management Coordinator

The Status of Alaska Moose and Factors Influencing Their Populations in Region III

Region wide Activities:

1. Prepared biennial moose management reports: collected preliminary data in preparation for 14 biennial reports.
2. Monitored harvest and analyzed harvest data of 3,688 moose.
3. Monitored natural mortality and analyzed natural mortality data of 6 moose populations.
4. Provided moose management information to state and federal regulatory processes: 17 Fish and Game Advisory Committees, 1 Board of Game, 3 federal Regional Advisory Councils and 1 federal Subsistence Board.
5. Captured 75 moose to deploy radio collars and collect information on movements, productivity, and/or mortality.
6. Conducted 25 geospatial population estimation, trend, composition, or riparian zone minimum direct count surveys to determine status, trend, productivity, and mortality of moose.
7. Conducted 2 hunter check stations.

Covers GMUs: 12, 19, 20, 21, 24, 25, 26B and 26C

Submitted by: Doreen Parker-McNeil, Region III Management Coordinator

The Status of Alaska Moose and Factors Influencing Their Populations in Region IV

Region wide Activities:

ACTIVITY 1: Prepare biennial regional moose management reports.

Biennial moose management reports were written and submitted to the region for editing.

ACTIVITY 2: Conduct aerial sex and age composition surveys in all units to determine status, trend, productivity, and mortality of moose.

Unit 9: Lack of snow precluded surveys in Unit 9 with the exception of one survey flown in April, eight cows and one calf observed.

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Unit 11: No fall sex and age compositions surveys for moose were conducted because insufficient snow precluded fall moose surveys in this area.

Unit 13: Composition surveys were flown during November in 5 distinct count areas. Bulls: 508, Cows: 1,467, Calves: 238, Total: 2,213.

Unit 14 A&B: Twinning surveys were conducted in the Knik River portion of 14A during May and early June. The twinning rate for moose was determined to be 19%.

Unit 17: No fall sex and age compositions surveys or late winter GSPE surveys for moose were conducted because insufficient snow precluded surveys in this area.

A pilot project using a R-44 helicopter to assess sex and age composition was conducted along the Iowithla River in Unit 17C during March of 2015. Seventy nine moose were observed, of which 54 were cows, 12 were calves (22 calves/100 cows), and 13 were bulls (24 bulls/100 cows).

ACTIVITY 3: Monitor the moose harvest through field observations, hunter harvest reports, and contact with hunters.

Unit	Male	Female	Unknown	Total Harvest
<i>Unit 9</i>	99	1	0	100
<i>Unit 11:</i>	47	0	0	47
<i>Unit 13</i>	919	4	0	923
<i>Unit 14A</i>	473	418	4	895
<i>Unit 14B</i>	88	1	0	89
<i>Unit 16</i>	431	15	2	448
<i>Unit 17:</i>	261	10	4	275

Activities by Unit:

Unit 14A&14B:

ACTIVITY 1: Conduct a fall moose census (GSPE) in select areas.

No GSPEs were completed in Unit 14A or 14B in 2014.

ACTIVITY 2: Monitor moose population for diseases including Chronic Wasting Disease.

Disease surveillance was discontinued on moose in the fall of 2013.

Unit 16:

ACTIVITY 1: Conduct a fall moose census (GSPE) in select areas.

GSPEs were flown in Unit 16B and in 16A in December. Due to deteriorating weather conditions only 16B-north was completed. The population estimate for Unit 16B is 7,400 ± 1,525 moose.

Unit 17

ACTIVITY 1: Conduct a spring moose population survey (modified Gasaway or VerHoef) in select areas.

We were unable to conduct a spring population estimation survey in any portion of Unit 17 due to lack of snow.

Conducted moose twinning surveys in late May in a portion of Unit 17C. Over the course of three flights, 240 cow moose were observed, 42 with calves, and 21 of these with twins, for a twinning rate of 50%. The last of the three flights on May 26 was the most effective for seeing cows with calves, with 73 cows observed, 20 with calves, 12 of these with twins, for a twinning rate of 60%.

Covers GMUs: 9, 11, 13, 14A, 14B, 16, and 17

Submitted by: Lem Butler, Region IV Regional Supervisor

The Status of Alaska Moose and Factors Influencing Their Populations in Region V

Region wide Activities:

Provide information to state and federal regulatory processes on moose management.

Area management staff reviewed State and Federal regulatory proposals, attended regulatory process meetings, and presented moose information to the State Board of Game, State Fish and Game Advisory Committees, Federal Subsistence Board, and Federal Subsistence Regional Advisory Councils.

Activities by Unit:

Unit 18:

Conduct fall aerial sex and age composition surveys and calf production surveys in selected portions of Unit 18.

Lack of snow in the fall and early winter of 2014 prevented the completion of this task.

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 and Kuskokwim Rivers in late May 2015. In five days of flying we observed a total of 145 cows accompanied by calves. Twinning rates were 50% in the Lowest Yukon area, 42% in the Andrafsky area, 31% in the Paimiut area, and 40% in the Kuskokwim area.

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.

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We flew a GSPE survey during February and March 2015 in the Kuskokwim Count area. The midpoint of the estimate is 1,378 moose \pm 12.0% with a 95% confidence interval. The calf:adult ratio was 43 calves:100 adults.

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.

A GSPE was conducted in this area in 2015 (see above) so other surveys were not needed.

Monitor moose numbers, distribution, and utilization of the smaller drainages in Unit 18 through trend area surveys, distribution surveys, public contacts, and field observations.

Anecdotal evidence suggests the moose populations are increasing on the Goodnews and Kanektok drainages.

Monitor overall hunting activity through hunter checkstations, harvest reporting, hunter contacts, and field observations.

We analyzed harvest reports and found that 613 moose were reported taken in Unit 18 in the Yukon drainage and along the coast. Hunters also reported harvesting 3 moose in the Kanektok River drainage and 9 in the Goodnews River drainage. We contacted moose hunters opportunistically throughout the year. We also spent approximately 6 days contacting hunters by boat in the Bethel area on the Kuskokwim River during the hunting season for registration permit hunt RM615. Harvest was 125 moose in RM615 in RY14.

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 fewer reports from hunters/trappers and the public regarding wolf kills than in the past several years.

Assess habitat quality through browse surveys and field observations.

No work was completed toward this activity during the reporting period because department biologists were assigned to other S&I activities.

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 radiotelemetry data and aerial survey observations.

We have periodically monitored the 23 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. In May 2015, 12 of the 19 cows observed had singleton calves with them.

Work with the Association of Village Council Presidents (AVCP), Kuskokwim Native Association (KNA), The Kuskokwim Corporation (TKC), U.S. Fish and Wildlife Service (FWS),

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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 Lower Yukon AC, the Central Bering Sea AC and the Y-K Delta Regional Advisory Council meeting.

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 followed-up on the April 2013 public meeting in the community of Quinhagak to make progress towards a moose management strategy in this area.

UNIT 22:

Conduct a geostatistical estimation survey (census) or a riparian zone minimum direct count survey (census) in a portion of Unit 22 to monitor trends in population size, sex/age composition, and recruitment.

A geospatial moose census was not completed during the reporting period because inadequate survey conditions prevented the population survey during the survey period.

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 portions of Units 22C and 22E during the reporting period. In Unit 22C, we classified 160 moose and found 21 bulls:100 cows and

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20 calves:100 adults. In Unit 22E, we classified 184 moose and found 41 bulls:100 cows and 17 calves:100 adults.

Spring recruitment surveys were not completed. Staff availability was limited by the completion of distance sampling for Seward Peninsula muskox in Unit 22 and Unit 23 Southwest.

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. Anecdotal evidence indicates bear predation on moose calves is depressing moose populations in much of the unit, specifically in areas of Units 22A and 22B.

Evaluate hunting mortality by analyzing all moose harvest data.

Hunt reports were received for 2 bull fall registration hunts (RM840 including hunt areas: Unit 22C, Unit 22B west of the Darby Mountains, Unit 22D Kuzitrin River drainage, and Unit 22D Southwest, and RM841 in the central portion of Unit 22A), 1 antlered bull winter registration hunt (RM843 in Unit 22B west of the Darby Mountains), 2 nonresident bull registration hunts (RM842 in a portion of Unit 22D and RM853 in Unit 22E) and a fall nonresident bull draw hunt (DM845 in a portion of Unit 22B). Harvest from other areas of the unit was monitored by harvest ticket report cards (GM000). Total reported harvest for Unit 22 during the reporting period was 167 moose (Unit 22A-34, 22B-39, 22C-10, 22D-64, 22E-20). The Department documented 155 moose in 2013-2014, 182 moose in 2012-2013, and 193 moose in 2011-2012 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. A Community-based Harvest Assessment was completed in Shishmaref by Division of Subsistence. Data analysis is currently ongoing and results are not available. 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.

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.

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 geospatial population census was conducted during this reporting period in Unit 23 Southwest during late March 2015. Density of adult moose was 0.09 moose/mi² and the calf:adult ratio was 15:100.

The population estimate survey was a joint effort between NPS and ADF&G.

Perform twinning surveys (calf production surveys) to monitor changes in habitat quality.

Scheduling conflicts prevented twinning surveys this year.

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 and drawing permit systems and Community-based Harvest Assessments: 337 hunters reported taking 123 moose through the statewide harvest ticket system and the registration permit system. Community-based Harvest Assessments were completed by Division of Subsistence in Kotzebue in Unit 23, and in Point Hope in nearby neighboring Unit 26A. Data analysis is currently ongoing and results are not available. Previous Community-based Harvest Assessments suggest residents of Unit 23 have taken 400-425 moose annually during recent years, substantially more than indicated by harvest ticket hunt reports. Nonresident hunters (65 reported) took 18 moose.

Continue the Unit 23 User Issues planning process to minimize user-group conflicts in relation to biological parameters of moose.

Staff participated in the May 2015 meeting of the Unit 23 User Issues working group. Summary information for this user-group is posted at ADF&G website:

<http://www.adfg.alaska.gov/index.cfm?adfg=plans.unit23>

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 100% 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 March 2015. Due to small sample size, no additional analysis was completed.

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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 March 2015, 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 unit-wide riparian zone direct minimum count for moose in Unit 26A on 15–16 April 2015. We counted a total of 145 moose. There were 132 adults and 13 short yearlings (9%) that had survived the winter. This was the lowest number of moose ever counted during a spring survey.

Conduct a yearly fall aerial sex and age composition survey of the Colville River population.

We conducted a fall sex and age composition survey from 5–9 November 2014. 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 no wolves and 2 wolverines during the spring trend count of 2015. Fresh wolf tracks were noted for an estimated total of 5 wolves. Wolverines were encountered at a rate of 0.3 wolverines/hr of aerial 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.

Evaluate quantity and quality of moose browse in portions of Unit 26A.

Preliminary analysis of previously collected browse samples indicate comparatively low digestible protein for Colville River browse samples.

Monitor hunting activity and harvests through the statewide harvest ticket system, Community-based Harvest Assessments, public contacts and field observations.

Drawing hunts were closed due to low population status. Hunt report information indicates that 2 bulls were harvested by resident hunters by harvest ticket in Unit 26A.

Community-based Harvest Survey were completed by Division of Subsistence in Barrow, Nuiqsut, and Point Hope in Unit 26A; also completed in Anaktuvuk Pass in close neighboring Unit 24. Data analysis is currently ongoing and results are not available.

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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, including closing the winter hunt, which occurred through an emergency order issued by ADF&G.

Submitted by: Peter Bente, Region V Management Coordinator