ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
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ANNUAL SURVEY AND INVENTORY

STATE: Alaska **GRANT AND SEGMENT NO.** W-33-10

PROJECT NO.

PERIOD: July 1, 2011 – June 30, 2012

PROJECT LOCATION: Statewide

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

REPORT DESCRIPTION: This performance report describes Moose survey and inventory activities. Activities are listed by game management unit.

Region I Activities:

ACTIVITY 1: Moose management reports are still in the process of being completed for this activity.

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: 4 bull moose was harvested along the Unuk River drainage, and a tooth was collected for aging, and photo's of antlers were taken.

Unit 1B: 28 bull moose were harvested, incisors were collected for aging and antler photos were obtained from these moose.

Unit 1C: 47 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. All bulls taken at Gustavus were checked for antler configuration due to the spike fork 50" or 3 brow tine antler restriction hunt.

Unit 1D: 20 bulls were harvested. Incisors, antler measurements, antler point counts, and antler photos were collected from each of the harvested bull moose.

Unit 3: 55 bulls were harvested, while incisors were collected for aging and antler photos were obtained from these moose.

Unit 5: 40 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.

Staffs 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 herd with the Board of Game and interested hunters from Petersburg, Wrangell, Kake and other communities. During fall 2011, 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 Unit 1B (Stikine River), 1C (Gustavus, and Berners Bay), 1D, and 5A.

Unit 1B: 91 moose were counted (6 bulls, 72 cows, 13 calves).

Unit 1C: 209 moose were counted throughout the 3 areas: (38 bulls, 36 calves, 135 cows).

Unit 1D: 212 moose were counted (57 bulls, 127 cows, and 28 calves).

Unit 5A-Yakutat forelands: 229 moose were counted (28 bulls, 141 cows, and 60 calves). Only te western portion of the Yakutat forelands was surveyed in 2011.

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.

Activities by Unit
Unit 1B:
Activity 1: Monitor the impacts of liberalized antler restrictions in the unit.

The 2011 season was the 3rd year of the liberalized season where moose with 2 brow tines on each side were legal for harvest. Age data collected from all bulls that had two brow tines on both antlers

Unit 1C:

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

Gustavus: 38 collared moose were monitored.

Berners Bay: 33 collared moose were monitored.

Activity 2: Conduct browse surveys to determine availability, utilization and temporal changes in Berners Bay and the Gustavus Forelands.

Browse surveys were conducted only at Gustavus during this report period.

Activity 3: Design and provide public education/information concerning selective harvest strategies for moose in preparation for fall 2011 Gustavus bull moose hunting season.

A public meeting was held at Gustavus where staff presented a video, presented slides, and presented antlers. All of these props were used to reinforce the need for hunters to look for certain criteria when identifying a legal bull moose.

Unit 1D:

ACTIVITY: Establish browse transects in the Chilkat River Valley and conduct browse surveys to determine browse availability, utilization, and temporal changes.

Browse surveys were not conducted during this report period.

Unit 3:

ACTIVITY: Monitor the impacts of liberalized moose antler restrictions in the unit.

The 2010 season was the second year of the liberalized season where moose with 2 brow tines on a side were legal for harvest. Age data collected from 20 bulls that had two brow tines on both antlers had a median age of 7 years, which remained in keeping with the current selective harvest strategy.

Submitted by: Neil Barten, Region I Management Coordinator

Region II Activities:

ACTIVITY : Prepare biennial regional moose management reports.

Moose management report was drafted and submitted for publication.

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 Area 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 Area specific activities.

Activities by Unit:
Unit 6
ACTIVITY 1: Completed a Moose Management Report.

ACTIVITY 2: Completed a modified Gassaway surveys in 2 of 4 management areas (400 sq. mi.). The population estimate in Unit 6C was 600 moose with 21% calves and 23 bulls per 100 cows. In 6B the population size was 270 with 16% calves.

ACTIVITY 3: Issued 250 permits for a total harvest of 48 moose.

Units 7&15
ACTIVITY 1: Completed a Moose Management Report.

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

Two composition surveys in Unit 7 tallied 95 moose, a bull:cow ratio of 12:100 and a calf:cow ratio of 18:100 (or 14% calves). Six composition surveys in Unit 15A tallied 487 moose, a bull:cow ratio of 36:100, and a calf:cow ratio of 29:100 (or 17% calves). No composition surveys were conducted in Unit 15B during this report period. Four composition surveys in Unit 15C tallied 1077 moose, a bull:cow ratio of 9:100, and 15% calves. Two composition surveys in Unit 7 tallied 76 moose, a bull:cow ratio of 14:100, and a calf:cow ratio of 26:100 (or 19% calves).

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

The preliminary harvest for the 2011 general season was 43 bulls taken with an additional 3 moose taken on drawing permits. Nine-hundred twelve hunters reported hunting in Units 7 and 15 during the general season. The harvest and participation dropped significantly from past years due to changes to what defined a legal bull (from spike/fork 50" or 3 brow tines to 50" or 4 brow tines only)

ACTIVITY 4: 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.

ACTIVITY 5: Unit 15: conduct moose population survey (GSPE) in select areas.

No GSPE surveys were conducted during the reporting period due to other priorities.

Unit 14C
ACTIVITY 1: Prepared biannual moose management report.

ACTIVITY 2: Conducted a fall moose population estimate (modified Gassaway survey) on Joint Base Elmendorf-Richardson and in Ship Creek Valley in cooperation with the military. Additional areas were surveyed in GMU14C, as well. The final population estimate for the area based on 2011 survey was 1540 with 20 calves per 100 cows and 32 bulls per 100 cows.

ACTIVITY 3: 135 moose were harvested during the reporting period from a combination of general harvest, drawing permit hunts and registration permit hunts.

Submitted by: Gino Del Frate

Date: 2 September 2012

Region III Activities:

ACTIVITY 1: Prepare moose management reports.

Prepared moose management reports.

ACTIVITY 2: Monitor harvest and analyze harvest data.

Monitored preliminary harvest of 3,628 moose during general season and registration and drawing permit hunts and analyzed harvest data.

ACTIVITY 3: Monitor natural mortality and analyze mortality data.

Monitored natural mortality and analyzed mortality data.

ACTIVITY 4: Provide moose management information to state and federal regulatory processes.

Provided information to 15 State fish and game advisory committees, the Alaska Board of Game, and 2 Federal regional advisory councils and the Federal Subsistence Board.

ACTIVITY 5: Capture approximately 50 moose to deploy radiocollars and collect information on movements, productivity, and/or morality.

Deployed 41 radio-collars with no capture related mortalities in Unit 24B.

Activities by Unit

Unit 12

ACTIVITY 1: Conduct geostatistical population estimation or trend/composition surveys.

In collaboration with National Park Service staff, completed population estimation surveys in a 1,602 mi^2 area of Units 11 and 12 accessible along Nabesna Road, resulting in a population estimate of 1,009-1,536 observable moose and a bull:cow ratio of 34 bulls:100 cows.

Unit 19

ACTIVITY 1: Conduct trend/ composition surveys.

Conducted composition–trend surveys in eastern Unit 19A in Nov 2011 and sampled 164 moose (55 moose/hr), including 31 calves:100 cows, and 38 bulls:100 cows.

Conducted a GSPE moose population and composition estimation survey in Unit 19D in the moose management area near McGrath in Nov 2011 and obtained an estimate of 1647 moose ± 296 at 90% CI in a 1,118 mi^2 area with 42(±11) calves:100 cows, 33(±10) bulls: 100 cows, and 10(±3) yearling bulls:100 cows.

ACTIVITY 2: Conduct spring calf twinning surveys.

Conducted a spring calf twinning survey in Unit 19D in early June 2012. We found 47 cows with litters, including 16 sets of twins (34% twinning rate).

ACTIVITY 3: Conduct snow depth aerial surveys.

Conducted aerial snow depth surveys between November 2011 and April 2012.

Unit 20A

ACTIVITY 1: Conduct geostatistical population estimation surveys.

Conducted geostatistical population estimation surveys, estimating 14,497 moose.

ACTIVITY 2: Conduct spring calf twinning surveys.

Conducted May twinning surveys (12%, n = 127).

Unit 20B

ACTIVITY 1: Conduct a geospatial population estimation or trend area surveys.

No population estimation survey completed due to shortage of contract aircraft and personnel.

ACTIVITY 2: Conduct spring calf twinning surveys.

Conducted May twinning surveys (Minto Flats = 13%, Central Unit 20B = 4%).

ACTIVITY 3: Monitor nutritional condition by capturing and weighing calves.

No calves weighed due to lack of funding.

Units 20C, 20F, and 25C

ACTIVITY 1: Conduct a geostatistical population estimate.

Completed a geostatistical population estimate in eastern Unit 20C, resulting in an estimate of 1,460 (90% CI 1189-1731)

ACTIVITY 2: Conduct browse utilization survey east of Kantishna River.

Completed a browse utilization survey, resulting in an estimate of 19% removal.

Unit 20D

ACTIVITY 1: Conduct a Geo-Statistical population estimate.

Conducted a Geo-Statistical population estimate in southern Unit 20D, resulting in a population estimate of 4,134 observable moose.

ACTIVITY 2: Conduct spring calf twinning surveys.

Conducted a spring moose calf twinning surveys, resulting in a 13.6% twinning rate.

Unit 20E

ACTIVITY 1: Conduct moose population estimation surveys.

Completed population estimation surveys in a 4,630 mi^2 area in southern Unit 20E resulting in a population estimate of 3,484-4,812 moose and a bull:cow ratio of 67 bulls:100 cows.

ACTIVITY 2: Conduct spring twinning surveys.

Conducted a moose twinning survey in southwest Unit 20E to evaluate nutritional condition of habitat for moose, resulting in a twinning rate estimate of 35%.

Unit 21A and 21E

ACTIVITY 1: Conduct trend/composition surveys.

Conducted trend/composition surveys in Unit 21E in Nov 2011 and sampled 201 moose (54 moose/hr), including 47 calves:100 cows, and 64 bulls:100 cows.

ACTIVITY 2: Conduct spring calf twinning surveys.

Twining surveys not conducted due to poor weather conditions.

ACTIVITY 3: Conduct snow depth aerial surveys.

Completed snow depth surveys.

ACTIVITY 4: Conduct moose population estimation survey.

Conducted a GSPE moose population estimation survey in Unit 21E during March 2012 and obtained an estimate of 5701 ± 16% total moose at 90% CI in a 5,070 mi^2 area.

Unit 21B

ACTIVITY 1: Conduct population estimation or trend area surveys.

In cooperation with USFWS counted 167 moose in the Nowitna Mouth Trend Count Area (TCA) and 185 moose in the Nowitna/Sulatna confluence TCA.

Unit 21C

ACTIVITY 1: Conduct a hunter check station on the Koyukuk River.

In combination with Units 21D and 24, registered 556 hunters at a check station on the Koyukuk River and checked 242 moose.

Unit 21D

ACTIVITY 1: Conduct fall trend area surveys.

In cooperation with USFWS, counted 921 moose in the Three Day Slough trend count area (TCA); 506 in the Dulbi River TCA, 503 in the Koyukuk River Mouth TCA, 251 in the Squirrel Creek TCA, 261 in the Kaiyuh Slough TCA, and 563 in the Pilot Mountain Slough TCA.

ACTIVITY 2: Conduct spring twinning surveys.

In cooperation with USFWS, counted 280 cow:calf pairs in the 21D and 24 twinning surveys.

ACTIVITY 3: Conduct a hunter check station on the Koyukuk River.

In combination with Units 21C and 24, registered 556 hunters at a check station on the Koyukuk River and checked 242 moose.

ACTIVITY 4: Conduct GSPE moose survey.

Estimated 5,257 moose in the Galena and Kaiyuh Sub-Area GSPE's.

Unit 24

ACTIVITY 1: Conduct fall trend area surveys.

In cooperation with USFWS, counted 541 moose in the Huslia Flats TCA, 601 moose in the Treat Island TCA, 204 moose in the Dulbi Slough TCA, and 92 moose in the Middle Fork TCA.

ACTIVITY 2: Conduct spring twinning surveys.

In cooperation with USFWS, counted 280 cow:calf pairs in the 21D and 24 twinning surveys.

ACTIVITY 3: Operate a hunter check station on the Koyukuk River.

In combination with Units 21C and 24, registered 556 hunters at checkstation on the Koyukuk River and checked 242 moose.

ACTIVITY 4: Conduct GSPE moose survey.

Estimated 1022 moose in the 24B Kanuti GSPE and 2627 moose in the 24D Upper-Koyukuk GSPE

Units 25A, 25B and 25D

ACTIVITY 1: Conduct a geostatistical population estimation surveys or composition surveys.

No surveys conducted because of poor survey conditions.

Units 26B and 26C

ACTIVITY 1: Conduct riparian zone minimum direct count surveys.

Conducted a riparian zone minimum direct count survey in April 2012, with preliminary data indicating 464 moose including 61 calves observed.

Conducted a minimum direct count aerial survey of moos in the Firth and Mancha River drainages and the uuper Kongakut drainage in GMU 26C in October 2011, with 339 moose classified and a bull:cow ratio of 70 bulls per 100 cows and a calf:cow ratio of 31 calves per 100 cows.

Submitted by: Roy A. Nowlin, Region III Management Coordinator

Region IV Activities:

Project Location: Game Management Units 9, 11, 13, 14A, 14B, 16, and 17

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: Composition surveys were flown in Units 9B and 9C. Bulls: 75, Cows: 259, Calves: 29, Total: 363.

Unit 11: Composition surveys were flown during November in CA 11. Bulls: 98, Cows: 138, Calves: 29, Total: 265.

Unit 13: Composition surveys were flown during November and December in 8 distinct count areas. Bulls: 1,173, Cows: 3,604, Calves: 827, Total: 5,604.

Unit 14 A&B: Composition surveys were flown during November in Unit 14A. Bulls: 844, Cows: 4,965, Calves: 2,184, Total: 7,993.

Unit 16: Composition surveys were flown during November in Unit 16B-Middle. Bulls: 936, Cows: 2,034, Calves: 488, Total: 3,458.

Unit 17: No sex and age compositions surveys for moose were conducted because insufficient snow precludes fall moose surveys in this area.

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

Unit	Male	Female	Unknown	Total Harvest
Unit 9:	104	0	1	105
Unit 11:	37	0	0	37
Unit 13:	858	0	0	858
Unit 14A:	502	212	4	718
Unit 14B:	91	1	0	92
Unit 16:	342	11	1	354
Unit 17:	348	0	0	348

Activities by Unit:

Unit 9:

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

Aerial surveys were completed in the central portion of 9B. The population of central 9B was estimated at 1,145 moose.

Unit 14A&14B:

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

A GSPE survey was conducted in 14A. The total estimated population was 7993 moose, the sex and age composition was 17.4 bulls:100 cows and 43.5 calves:100 cows.

ACTIVITY 1: Monitor moose population for diseases including Chronic Wasting Disease.

Disease surveillance was conducted on samples from road-kill moose.

Unit 16:

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

A GSPE survey was conducted in Unit 16B Middle. The total estimated population was 3458 moose, the sex and age composition was 45.7 bulls:100 cows and 23.7 calves:100 cows.

Unit 17

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

No population estimation survey was conducted in Unit 17 because of space and time conflicts with wolf control program in Unit 17.

Submitted by: Lem Butler, Region IV Management Coordinator

Date: 15 August, 2012

Region V Activities:

ACTIVITY 1: Prepare a regional moose management report.

A moose management report was prepared during this reporting period.

ACTIVITY 2: 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:

ACTIVITY 1: Conduct fall aerial sex and age composition surveys and calf production surveys in selected portions of Unit 18.

Weather prevented us from flying Composition surveys in the fall of 2011.

ACTIVITY 2: 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 twining surveys on the Yukon River and Kuskokwim Rivers in late May 2012. In ten days of flying we observed a total of 142 cows accompanied by calves. Twinning rates were 31% in the Lowest Yukon area, 61% in the Andreafsky area, 50% in the Paimiut area, and 47% in the Kuskokwim area.

ACTIVITY 3: Conduct geostatistical population estimation surveys (GSPE), (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.

We conducted a GSPE survey in February 2012 in the Middle Yukon (Andreafsky) count Area. The midpoint of the estimate was 2748 moose with a 90% confidence interval of 16.6%. The calf:adult ratio was 36 calves:100 adult moose.

ACTIVITY 4: 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 work completed during this report period due to weather and logistical difficulties.

ACTIVITY 5: Monitor moose numbers, distribution, and utilization of the smaller drainages in Unit 18 through trend area surveys, distribution surveys, public contacts, and field observations.

Numerous contacts with the public indicate that moose population in the Kuskokwim drainage has increased during this report period.

Public contacts and incidental field observations on the Yukon River drainage indicate a relatively stable moose population in the Paimiut Count Area and a rapidly increasing moose population in the Lowest Yukon Count Area.

ACTIVITY 6: Monitor overall hunting activity through hunter checkstations, harvest reporting, hunter contacts, and field observations.

We analyzed harvest reports and found that 398 moose were reported taken in Unit 18 in the Yukon drainage. Hunters also reported harvesting 4 moose in the Kanektok River drainage and 19 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.

ACTIVITY 7: Monitor other mortality factors through public contacts and field observations.

We observed wolf-killed moose carcasses and observed wolves during moose calving surveys. We received reports from hunters/trappers and the public regarding wolf kills, particularly along the Yukon River drainage near Ohogamiut and Russian Mission, and in the Kilbuck Mountains. Local residents from Russian Mission downriver to Emmonak were concerned that unusually deep snow and higher wolf numbers would affect the moose population.

ACTIVITY 8: 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.

ACTIVITY 9: Capture, measure, collect samples and weigh up to 30 short yearlings to provide information on body condition and disease profiles.

No work completed during this report period due to logistical difficulties.

ACTIVITY 10: 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.

ACTIVITY 11: 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.

ACTIVITY 12: Use 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 helped teach the sections of Hunter Education that deal with Wildlife Management and tailored those sections to reflect local issues and moose management. We also prepared PSAs and newspaper articles to inform and educate the public about harvest reporting requirements and reasons for harvest reporting.

ACTIVITY 13: 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; Y-K Delta Regional Advisory Council meeting.

ACTIVITY 14: 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.

The Unit 18 communities of Goodnews Bay and Platinum and other agency participants agreed to continue the strategy to encourage moose to colonize the Goodnews River drainage and the portion of Unit 18 south of the Goodnews River drainage during this reporting period.

Unit 22:

ACTIVITY 1: Conduct a geostatistical population estimation survey (GSPE) or a riparian zone minimum direct count survey in a portion of the unit to monitor trends in population size, sex/age composition, and recruitment.

A geospatial moose census was completed in the central portion of Unit 22A. The Unit 22A Central area has a census estimate is 545 moose (±17% at 90% C.I.), and the calf:adult ratio is 24 calves:100 adults.

ACTIVITY 2: Complete trend area surveys, sex and age composition surveys, or other aerial surveys (where appropriate) 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 Units 22C during the reporting period. We classified 194 moose and found 13 bulls:100 cows and 15 calves:100 adults. Additional spring recruitment surveys were not completed because a geostatistical population estimate survey was completed in Unit 22A Central.

ACTIVITY 3: Monitor human and natural mortality factors affecting the population.

Human harvest was monitored through the harvest/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.

ACTIVITY 4: Evaluate hunting mortality by analyzing all moose harvest data.

Hunt reports were received for a 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), an antlered bull winter registration hunt (RM849 including Unit 22B west of the Darby Mountains), a nonresident bull registration hunt (RM842 in a portion of Unit 22D), and 2 anlterless fall registration hunts (RM850 and RM852 in Unit 22C). 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 193 moose (Unit 22A-25, 22B-30, 22C-51, 22D- 77, 22E-10). The Department documented 168 moose in 2010-2011 and 192 moose in 2009-2010 through similar reporting methods.

ACTIVITY 5: Improve harvest reporting through public education and improved communication and by conducting Community-based Harvest Assessments in selected villages.

The importance of harvest reporting was emphasized to registration permit recipients, village license vendors, and hunters at village meetings in Nome, Shishmaref, Wales, Brevig Mission, Teller, White Mountain, Golovin, Elim, Koyuk, and Unalakleet. Public service announcements were posted in Nome and residents of Unit 22 villages 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.

ACTIVITY 6: 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. There were no changes to moose regulations during the reporting period.

ACTIVITY 7: Use 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 game management.

ACTIVITY 8: Evaluate moose browse in portions of Unit 22 for indications of over utilization of winter habitat.

Moose browse surveys were not completed in Unit 22 because department biologists were assigned to other S&I activities.

Unit 23:

ACTIVITY 1: Conduct geostatistical population estimation surveys, sex and age composition surveys, and calf survival counts where appropriate in the unit to monitor trends in population density, sex and age composition, and recruitment.

A geospatial population census was conducted during this reporting period in the portion of Unit 23 containing the Lower Kobuk Drainage in early April 2012. Density of adult moose was 0.4 moose/mi^2 and the calf:adult ratio was 8:100.

Sex and age composition data was also collected using a geospatial approach in the in the Lower Kobuk Drainage in November 2011. The population sex ratio was 49 bulls:100 cows. The population age ratio was 17 calves:100 cows.

Both the population estimate and the composition surveys in the Lower Kobuk were joint efforts between NPS, USFWS, BLM, and ADF&G.

ACTIVITY 2: 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: 385 hunters reported taking 140 moose through the statewide harvest ticket system and the registration permit system. Community-based harvest assessments suggested residents of Unit 23 have taken 400-425 moose annually during recent years, substantially more than indicated by harvest ticket hunt reports.

ACTIVITY 3: Use 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, reports were aggressively pursued and nearly 100% compliance was achieved.

ACTIVITY 4: Evaluate moose browse in portions of Unit 23 to assess quantity, quality, and over-browse conditions in seasonal habitats available to moose.

Scheduling conflicts prevented the completion of twinning surveys this year.

Unit 26A:

ACTIVITY 1: 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 census techniques to estimate the moose population trend in Unit 26A.

We conducted a riparian zone direct minimum count in the trend count area for moose in Unit 26A on 11-12 April 2012. We counted a total of 280 moose. There were 229 adults and 51 short yearlings that had survived the winter (18%), including 1 set of twins.

ACTIVITY 2: Conduct a fall aerial sex and age composition survey of the Colville River population.

We conducted a fall sex and age composition survey from 11-14 November 2011. We observed 131 moose, including 43 bulls (67 bulls:100 cows), 64 cows, and 24 calves (38 calves:100 cows, 18%). There were 3 sets of twins. Antler spreads were estimated and 5 % were less than 30 inches, 7 % were 30-39 inches, 23 % were 40-49 inches, 46 % were 50-59 inches, and 19 % were over 60 inches.

ACTIVITY 3: Monitor predator populations by logging bear and wolf observations during moose surveys and other mortality factors through field observations and public contacts.

We observed 19wolves, 7 bears, 3 wolverines, and 0 lynx during the spring trend count of 2012.

ACTIVITY 4: Vegetation surveys will be conducted to determine the quantity and quality of browse species in the survey area.

We collected samples to assess the quality of browse that moose in Unit 26A are eating in late winter, at green-up, at peak growth, and at senescence of the plants. These samples are currently being analyzed for leaf nitrogen, digestible proteins, and tannin-protein precipitation capacity.

ACTIVITY 5: Monitor hunting activity and harvests through the statewide harvest ticket system, Community-based Harvest Assessments, public contacts and field observations.

Hunt report information indicates that 4 bulls were harvested in drawing hunt DM981, no moose were harvested in DM 980, and 1 moose was harvested in the general season hunt.

Activity 6: Examine dead moose to look for causes of death, disease, mineral deficiencies, and contaminants.

We examined and collected samples from dead moose that were found during the census in April and calving surveys in June. These samples are currently being analyzed.

ACTIVITY 7: 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.

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