FEDERAL AID
ANNUAL PERFORMANCE REPORT

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF WILDLIFE CONSERVATION
PO Box 25526
Juneau, AK 99802-5526

MOOSE
ANNUAL SURVEY AND INVENTORY PERFORMANCE REPORT

STATE: Alaska **GRANT AND SEGMENT NR.:** W-27-5
PROJECT NR.: 1.0

WORK LOCATION: Statewide

PROJECT LOCATIONS: Game Management Regions 1, 2, 3, and 5

PERIOD: 1 July 2001–30 June 2002

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

REPORT DESCRIPTION: This statewide performance report includes the four regions involved in moose survey and inventory activities. Statewide and regional activities are listed before specific activities by herd and game management unit.

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

Regionwide Activities

Activity 1: Draft a moose management report.

The 2-year moose management report was completed in spring 2002 and submitted to headquarters.

Activity 2: Write an annual survey and inventory performance report.

This draft satisfies the activity as described.

Activity 3: Provide information on moose to the Board of Game.

During the report period, the only Board of Game action concerning Region I moose was to reauthorize cow seasons in Berners Bay, Nunatak Bench, and Gustavus Forelands herds.

Unit 1A

Activity 1: Assess harvest by use of registration permits (including the collection of incisors for aging and photos of antlers) and collect anecdotal information about the Unuk/Chickamin population through hunter contacts.

Staff in the Ketchikan area office collected hunt-based information through use of registration permit reports, collecting incisors and antler photos, and discussing the moose herd with hunters and others. Three moose were harvested on the Unuk drainage by 26 registered hunters.

Activity 2: Conduct no more than one aerial sex and age composition survey in the Unuk and Chickamin drainages.

Two aerial surveys were flown along the Unuk River, with 16 and 18 moose counted during the efforts.

Unit 1B

Activity 1: Monitor harvest by use of registration permits (including the collection of incisors for aging and photos of antlers).

Staff in the Petersburg area office collected hunt-based information through use of registration permit reports and the collection of incisors and antler photos. Staff issued 936 registration permits and 281 hunters killed 31 moose (one additional illegal moose was killed). Twenty-eight incisors were collected and later aged.

Activity 2: Fly a minimum of one aerial sex and age composition survey each of the Stikine River and Thomas Bay populations.

One winter helicopter survey was flown on the Stikine River, and 8 moose were counted. No sex and age composition aerial surveys were conducted due to habitat related sightability issues.

Activity 3: Fly no more than one aerial cow/calf composition survey of the Stikine River population.

We flew one spring aerial cow/calf composition survey on the Stikine River that was unsuccessful due to habitat related sightability issues.

Activity 4: Monitor habitat conditions in the Thomas Bay area by ground surveys of willow browse, using standard counts of number of leaders, amount of annual production and level of moose browsing.

There were no formal browse surveys conducted in the Thomas Bay area during the regulatory year. Staff did assess slash decomposition and vegetative release at two of three second growth stands thinned in fall 1998 to enhance habitat for moose at Thomas Bay.

Unit 1C

Activity 1: Monitor harvest by use of registration and drawing permits (including the collection of incisors for aging and photos of antlers).

Staff in the Douglas Area Office collected hunt-based information through use of registration and drawing permit reports and the collection of incisors and antler photos.

Activity 2: Fly at least one sex and age composition survey each of the Berners Bay, Taku River, Endicott River/St. James Bay, and Gustavus Forelands populations.

Douglas area staff flew one aerial survey each of the Berners Bay and Gustavus Forelands herds. A total of 66 moose were counted in the Berners Bay population and 275 in the Gustavus herd. No surveys were flown of the Endicott River/St. James Bay or the Taku populations.

Activity 3: 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 on the Gustavus Forelands were carried out on two occasions during the regulatory year. Results of the surveys were analyzed and presented to moose hunters in Gustavus and will be utilized during fall 2002 Board of Game deliberations.

Unit 1D

Activity 1: Monitor harvest by use of Tier II registration permits (including the collection of incisors for aging and photos of antlers).

Staff in the Douglas area office collected hunt-based information through use of Tier II permit reports and the collection of incisors and antler photos.

Activity 2: Fly at least one sex and age composition survey of the Chilkat Valley population.

Douglas area staff flew one aerial survey of the Chilkat Valley moose herd where 220 moose were counted.

Activity 3: 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.

There were no browse surveys conducted in the Chilkat Valley during the regulatory year.

Unit 2

The public has reported occasional sightings of moose in this unit. We have established no population objectives for Unit 2.

Unit 3

Activity 1: Monitor harvest by use of registration permits, including the collection of incisors for aging and photos of antlers.

Staff in the Petersburg area office collected hunt-based information through use of registration permit reports and the collection of incisors and antler photos. Staff issued 936 registration permits and 459 hunters killed 21 moose (plus an additional one illegal and one DLP moose). Nineteen incisors were collected for aging.

Activity 2: Collect anecdotal information about moose populations on Mitkof, Wrangell, Kupreanof, and adjacent islands.

Staff in the Petersburg area office discussed the moose herd with hunters from Petersburg, Kake, Wrangell, and other locations.

Unit 5

Activity 1: Monitor the moose harvest by use of registration permits (including the collection of incisors for aging and photos of antlers).

Staff in the Douglas area office collected hunt-based information through use of registration permit reports and the collection of incisors and antler photos.

Activity 2: Fly at least one sex and age composition survey each for the Yakutat Forelands, Nunatak Bench, and Malaspina Forelands populations.

Douglas area staff conducted aerial surveys in all three Unit 5 populations. Sex and age information was collected for the Yakutat and Malaspina forelands herds.

Total Regional Segment Period Project Costs (in thousands): $73.5

Submitted by: Bruce Dinneford, Wildlife Biologist IV

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

Regionwide Activities

Activity 1: Draft a moose management report.

Draft moose management reports will be prepared during spring 2002.

Activity 2: Write an annual survey and inventory performance report.

Activity 3: Provide information on moose to the Board of Game.

Region 2 moose regulations were addressed during the spring 2001 Board of game meeting.

Activity 4: Conduct aerial sex and age population composition surveys in all units to determine status, trend, productivity, and mortality of moose.

Surveys were conducted in all areas where conditions allowed.

Activity 5: Monitor the moose harvest through field observations, hunter harvest reports, and contact with hunters.

Results are presented below.

Activities by Unit

Unit 6

Activity 1: Conduct aerial sex and age population composition surveys in all units to determine status, trend, productivity, and mortality of moose.

Unit 6A East 2001–02 census:

Calves (%)	Unidentified Adult	Total	Population Estimate
42 (15)	159	230	285

Unit 6A West 2001–02 census:

Calves (%)	Unidentified Adult	Total	Population Estimate
38 (13)	189	263	297

Unit 6B 2001–02 census:

Calves (%)	Unidentified Adult	Total	Population Estimate
27 (13)	144	171	198

Unit 6C 2001–02 census:

Calves (%)	Unidentified Adult	Total	Population Estimate
70 (20)	185	321	341

Activity 2: Monitor the moose harvest through field observations, hunter harvest reports, and contact with hunters.

The Unit 6 2001–02 harvest was:

Males	Females	Total
74	9	83

Units 7 and 15

Activity 1: Conduct aerial sex and age population composition surveys in all units to determine status, trend, productivity, and mortality of moose.

Standard fall composition surveys were flown in selected sample units across the Kenai except in Subunit 15B. Two surveys were flown in Unit 7 (07Z CA07 and 07Z CA11). Results included 39 bulls, 18 calves, and 134 cows (29 bulls per 100 cows and 13 calves per 100 cows). In addition, one late winter survey was completed in the Unit 7 Federal subsistence hunt area near Kings Bay (4 bulls, 7 cows, and 1 calf).

In GMU 15, four composition surveys were completed in unit 15A (15A CA02, CA05, CA08 and CA13) and 2 in unit 15C (15C CA21 and CA26). Results for unit 15A included 106 bulls, 514 cows and 158 calves (21 bulls per 100 cows and 31 calves per 100 cows). Results for unit 15C included 152 bulls, 806 cows and 249 calves (19 bulls per 100 cows and 31 calves per 100 cows)

ADF&G and USFWS staff on the Kenai Peninsula coordinated to complete a late winter moose census in GMU 15C west of Kachemak Bay and the Kenai Mountains. Excellent snow conditions combined with the fact that much of the timbered areas contained dead trees or were logged contributed to much better sightability than the previous census. Overall population increased approximately 20% from the previous estimate in 1992. The winter 2002 geostatistical population estimate was 2980 +/- 15.9%. Much of this increase is probably the result of good recruitment in 2000–2001 and good calf production in May 2001.

Activity 2: Provide information on moose to the Board of Game.

The Board of Game met in March, 2002 to review proposals to reauthorize antlerless moose hunting regulations on the Kenai Peninsula. All hunts were reauthorized however only one antlerless hunt in 15C would take place with 50 permits issued. No other regulatory changes were made to the Kenai moose management system.

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

The preliminary Units 7 and 15 2001–02 general season harvest was:

GMU	Males	Females	Unspecified	Total
7	54	0	0	54
15A	225	0	1	226
15B	49	0	1	50
15C	308	1	3	312
15Z	1	0	0	1
Total	637	1	5	643

The harvest for all permit hunts held on the Kenai Peninsula is summarized in Table 1.

Table 1. Kenai Peninsula moose drawing permit hunt summary, 2001

Hunt area	Permits issued	Number of hunters	Percent success	Harvest Male	Female	Unknown	Total
Gov. permit	1	1	100	1			1
DM522	25	21	10%	2	0	0	2
DM530	14	11	0%	0	0	0	0
DM531	14	10	10%	1	0	0	1
DM532	6	2	0%	0	0	0	0
DM533	6	6	17%	1	0	0	1
DM534	12	6	17%	1	0	0	1
DM535	12	9	78%	7	0	0	7
DM536	8	4	25%	1	0	0	1
DM537	8	6	17%	1	0	0	1
DM538	10	4	50%	2	0	0	2
DM539	10	7	29%	2	0	0	2
Totals	126	87	22%	19	0	0	19

Unit 9

Activity 1: Conduct aerial sex and age population composition surveys in all units to determine status, trend, productivity, and mortality of moose.

Poor snow conditions in late 2001 curtailed survey efforts. In Unit 9C only the Branch River and Park Border trend areas were completed; 290 total moose were classified and ratios were 30 bulls and 9 calves per 100 cows. In Unit 9E the Flats A and Flats B areas were surveyed: 193 moose were classified and ratios were 48 bulls and 12 calves per 100 cows.

Activity 2: Monitor the moose harvest through field observations, hunter harvest reports, and contact with hunters.

The preliminary Unit 2000–01 harvest was:

Males 165 Females 8 Total 173

Units 11 and 13

Activity 1: Conduct aerial sex and age population composition surveys in all units to determine status, trend, productivity, and mortality of moose.

Composition surveys were flown during November in eleven distinct count units

GMU 13	Bulls 696	Cows 3253	Calves 497	Total Moose 4446
GMU 11	Bulls 43	Cows 46	Calves 4	Total Moose 93

Activity 2: Monitor the moose harvest through field observations, hunter harvest reports, and contact with hunters.

GMU 13 Hunters 3039

GMU 11 Hunters 118

The preliminary Unit 2001–02 harvest was:

GMU 13	Males 420	Females 0	Total Harvest 420
GMU 11	Males 31	Females 0	Total Harvest 31

Unit 14 A and B

Activity 1: Draft biennial moose management report.

Completed June 1998–July 2000 Unit 14A and Unit 14B moose management reports.

Activity 2: Write an annual survey and inventory performance report.

Completed 1999–2000 Moose Performance reports for Unit 14A and Unit 14B.

Activity 3: Provide information on moose to the Board of Game.

Reported to Board of Game population status and trend and harvest information for regulation proposal deliberation during March 2000 meeting. The information was pertinent to 15 proposed changes.

Activity 4: Conduct a fall moose census (modified Gasaway) and super-stratification surveys in select areas.

Conducted modified Becker survey in Unit 14A between 1–4 December and identified 1,693 moose. The 14A population estimate was 5,552 +/- 10% (80%CI) moose with 18 bulls and 37 calves:100 cows.

Conducted spring composition in 14A and identified 633 moose with an overall composition of 21% calves, which was down slightly from 24% calves in the fall 2000.

Activity 5: Monitor the moose harvest through field observations, hunter harvest reports, and contact with hunters.

The preliminary 2000–01 harvest was:

Unit 14A	Males 300	Females 1	Total	306
Unit 14B	Males 55	Females 0	Total	55

An additional 14 moose were killed by trains (7 in 14A and 7 in 14B) and 147 were killed by highway vehicles (133 in 14A and 14 in 14B).

Unit 14 C

Activity 1: Conduct a fall moose census (modified Gasaway) on Fort Richardson and Elmendorf Air Force Base in cooperation with the military.

Adults/yearlings 461 Calves 95 Total 556

Activity 2: Conduct fall aerial sex and age composition counts.

Surveys flown in 4 count areas:

Adults/yearlings 376 Calves 66 Total 442

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

The preliminary Unit 2001–02 harvest was:

Bulls 57 Cows 28 Total 85

Activity 4: Provide information on moose to the Board of Game.

Provided information to the Board of Game.

Unit 16

Activity 1: Draft biennial moose management report.

Completed June 1998–July 2000 Unit 16A and Unit 16B moose management reports.

Activity 2: Write an annual survey and inventory performance report.

Completed 1999–2000 Moose Performance reports for Unit 16A and Unit 16B.

Activity 3: Provide information on moose to the Board of Game.

Moose in Region 2 were not addressed by the Board of Game during this reporting period.

Activity 4: Conduct aerial sex and age population composition surveys in all units to determine status, trend, productivity, and mortality of moose.

Conducted modified Becker survey in Unit 16A between 17–25 November and identified 787 moose. The 16A population estimate was 2,420 +/- 22% (80%CI) moose with 28 bulls and 22 calves:100 cows.

Conducted modified Becker survey in Unit 16B-North between 20–22 November and identified 268 moose. The 16B-North population estimate was 909 +/- 20% (80%CI) moose with 39 bulls and 7 calves: 100 cows.

Conducted general sex and age composition survey in Unit 16B-South on 16 December and identified 98 moose under poor sightability. The composition of the observed moose was 13% calves.

Conducted general sex and age composition survey of Kalgin Island on 20 December under fair to poor conditions. The composition of 50 observed moose was 25 bulls and 54 calves: 100 cows.

Activity 5: Monitor the moose harvest through field observations, hunter harvest reports, and contact with hunters.

The preliminary 2000–01 harvest was:

Unit 16A	Males 138	Females 0	Total	139
Unit 16B	Males 251	Females 45	Total	296

An additional 20 moose were killed by highway vehicles.

Unit 17

Activity 1: Conduct a spring moose census (modified Gasaway) in the western portion of GMU 17B.

Estimate: 1,202 (+/- 141) moose

Activity 2: Monitor the moose harvest through field observations, hunter harvest reports, and contact with hunters.

The preliminary Unit 2000–01 reported harvest was:

Males 370 Females 0 Total 370

Other activities funded by Federal Aid on this project: None

Total Regional Segment Period Project Costs (in thousands): $242.4

Submitted by: Michael G. McDonald, Assistant Management Coordinator

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

Regionwide Activities

Activity 1: Write an annual survey and inventory performance report.

Wrote an annual survey and inventory report for all units.

Activity 2: Draft a moose management report.

Drafted moose management reports for all units.

Activity 2: Provide information to the Board of Game and advisory committees.

Made presentations to the Board of Game and advisory committees as needed.

Activities by Unit

Unit 12

Activity 1: In cooperation with Tetlin National Wildlife Refuge, conduct a moose population estimation survey in Unit 12 except that portion within Wrangell-St. Elias National Park and Preserve.

In cooperation with Tetlin National Wildlife Refuge staff, estimated a population of 3,599 moose in a 5,730 mi2 area that included all moose habitat in Unit 12 except that portion within Wrangell-St. Elias National Park and Preserve. Calf:cow ratios were 30:100 and bull:cow ratios were 50:100.

Activity 2: Monitor harvest and analyze harvest data.

Monitored harvest and hunter distribution by aerial survey, in field hunter contacts, and review of harvest reports (520 hunters harvested 101 bull moose).

Activity 3: Assess mortality factors.

Assessed mortality factors by analyzing harvest data and noting other sources of mortality.

Activity 4: Cooperate with Alaska Division of Forestry in developing an Upper Tanana Valley Logging/Wildlife Habitat Project. Assist state forestry in designing and implementing scarification techniques that will promote willow and aspen regeneration following logging.

Continued to work with the Division of Forestry to develop a logging/wildlife habitat enhancement project. Monitored permanent transects designed to measure vegetative, furbearer, moose, and passerine responses to logging and different scarification methods.

Completed the Robertson River Prescribed Fire Burn Plan. Planned ignition date is summer 2003.

Units 19, 21A and 21E

Activity 1: Conduct trend area surveys.

Conducted trend surveys in Units 19C, 19A, and 19D. Unit 19C trend indicates lower yearling recruitment at 3 yearling bulls:100 cows and a decline in the bull:cow ratio to 25:100. Unit 19A trend showed poor calf survival to a fall of 8 calves: 100 cows and low bull: cow ratios of 6:100. Unit 19D showed a continued low bull cow ratio, with low calf: survival with only 22 calves: 100 cows.

Activity 2: Conduct spring calf surveys.

Conducted spring calving surveys in Units 19D (as part of the research program), 19A and 21E. Unit 19D showed good initial production with 50% of the calves captured being twins (n=81). Unit 19A survey conditions were poor due to flooding conditions and twinning rates could not be calculated. Unit 21E surveys indicated an average twinning rate at 30%.

Activity 3: Monitor harvest and analyze harvest data.

Monitored harvest through general and permit hunts. Harvests overall were lower than 2000, with some speculation that warmer temperatures caused some of the decreased harvest. However continued population declines in some areas likely influenced harvest.

Activity 4: Assess mortality factors.

Assessed neonatal mortality factors in 19D. Initial data indicates that bears are the primary calf mortality factor, with wolves also sharing a substantial part of the biomass.

Activity 5: Formulate population objectives

Began a planning process in Units 19A and 19B that will result in formulation of population objectives.

Unit 20A

Activity 1: Conduct trend area surveys.

Conducted fall moose population estimation and stratification surveys. 2001 population estimate: 26 bulls:100 cows unitwide, 26 bulls:100 cows Tanana Flats, 40 bulls:100 cows Eastern Foothills/Mountains, and 22 bulls:100 cows Western Foothills/Mountains (Ferry Trail Management Area, Wood River Controlled Use Area and Yanert Controlled Use Area); 11,511 (± 15%) moose). Stratified 649 SUs (3644 mi2).

Activity 2: Conduct spring calf twinning surveys.

Conducted a moose twinning rate (10%, n = 28) survey in May.

Activity 3: Monitor harvest and analyze harvest data.

Analyzed harvest report information (RY01 general harvest = 539 bulls; permit hunts DM760, DM762, DM764 harvest = 75 cows).

Activity 4: Assess mortality factors.

Estimated unreported, illegal, road (trooper logs), and train (Alaska Railroad logs) mortality (preliminary RY01 estimate = 115 moose).

Unit 20B

Activity 1: Conduct trend area surveys.

Completed a population estimate instead of trend area surveys.

Activity 2: Conduct a geostatistical population estimate.

Conducted fall moose population estimation survey (GSPE - 2001 Unit 20B: population estimate = 10,261; 30 bulls:100 cows, 20B east 47 bulls:100 cows; 20B Central 27 bulls:100 cows; 20B West 30 bulls:100 cows).

Activity 3: Conduct a stratification survey.

Completed stratification in FY00 that was used in population estimate.

Activity 4: Conduct spring calf twinning surveys.

Conducted moose twinning rate (June 2002 = 21%, n= 48) surveys.

Activity 5: Monitor harvest and analyze harvest data.

Monitored harvest and analyzed harvest report information (RY 2001 general hunt harvest = 499 bulls; DM788 = 28 cows; TM785 = 31 bulls and 26 cows).

Activity 6: Assess mortality factors.

Estimated unreported, illegal, road (trooper logs), and train (Alaska Railroad logs) mortality (preliminary RY01 estimate = 115 moose).

Units 20C 20F and 25C

Activity 1: Monitor harvest and analyze harvest data.

Monitored harvest and analyzed general hunt harvest report information (preliminary RY01 reported harvest = 141 bulls in Unit 20C; 29 in 20F, and 59 in 25C).

Activity 2: Assess mortality factors.

Estimated unreported, illegal, road (trooper logs), and train (Alaska Railroad logs) mortality (preliminary RY01 estimate = 37 moose).

Unit 20D

Activity 1: Conduct a geostatistical population estimate in southern Unit 20D.

Conducted a geostatistical population estimate resulting in an estimate of 2,643–4,227 moose in southern Unit 20D.

Activity 2: Monitor harvest and analyze harvest data.

Monitored harvest of 161 moose in Unit 20D and analyzed harvest data.

Activity 3: Assess mortality factors.

Made no progress assessing nonhunting mortality factors.

Unit 20E

Activity 1: Conduct a moose population estimation survey in the western and central portions of Unit 20E.

Completed population estimation surveys in a 1,911 mi2 area in western Unit 20E and eastern Unit 20D (905 moose) and in a 2,703 mi2 area in southcentral and southeastern Unit 20E (2026 moose) during October and November 2001.

Activity 2: Monitor harvest and analyze harvest data.

Monitored harvest and hunter distribution by aerial survey, in field hunter contacts, Taylor Highway check station, and review of harvest reports. In Unit 20E, 745 hunters harvested 138 bull moose during the general hunt.

Administered drawing permit hunt DM794 (6 permits, 5 hunters, 5 bulls harvested) and DM796 (10 permits, 7 hunters, 3 bulls harvested).

Activity 3: Assess mortality factors.

No progress was made assessing mortality factors.

Units 21B

Activity 1: Conduct a geostatistical population estimate.

In cooperation with USFWS, using GSPE method estimated 3,161 moose in Unit 21B.

Activity 2: Monitor harvest and analyze harvest data.

Monitored harvest of 47 moose and analyzed harvest data.

Activity 3: Assess mortality factors.

Assessed mortality factors by analyzing harvest data and noting other sources of mortality.

Activity 4: Assist US Fish and Wildlife Service in the operation of a hunter check station on the Nowitna River.

In cooperation with US Fish and Wildlife Service checked 160 hunters at the check station on the Nowitna River.

Unit 21C

Activity 1: Monitor harvest and analyze harvest data.

Monitored harvest of 28 moose by 51 hunters and analyzed harvest data.

Activity 2: Assess mortality factors.

Assessed mortality factors by analyzing harvest data and noting other sources of mortality

Activity 3: Conduct a hunter check station on the Koyukuk River

Conducted a hunter check station on the Koyukuk River and checked 477 hunters.

Unit 21D

Activity 1: Conduct a geostatistical population estimate.

In cooperation with USFWS, using GSPE method, estimated 8,924 moose in combination with areas in Unit 24.

Activity 2: Conduct fall trend area surveys.

In cooperation with USFWS, conducted fall surveys on 6 trend areas.

Activity 3: Conduct spring twinning surveys.

Counted 35 cow/calf groups during spring twinning surveys.

Activity 4: Assess mortality factors.

Assessed mortality factors by analyzing harvest data and noting other sources of mortality.

Activity 5: Monitor harvest and analyze harvest data.

Monitored harvest of 411 moose and analyzed harvest data.

Activity 6: Operate a hunter check station on the Koyukuk River.

Operated a hunter check station on the Koyukuk River and checked 477 hunters.

Unit 24

Activity 1: Conduct a geostatistical population estimate in central Unit 24.

In cooperation with USFWS, using GSPE method, estimated 8,924 moose in combination with areas in Unit 21D.

Activity 2: Conduct fall trend area surveys.

In cooperation with USFWS conducted surveys on 6 trend areas.

Activity 3: Assess mortality factors.

Assessed mortality factors by analyzing harvest data and noting other sources of mortality.

Activity 4: Monitor harvest and analyze harvest data.

Monitored harvest of 238 moose and analyzed harvest data.

Activity 5: Operate a hunter check station on the Koyukuk River.

Operated a hunter check station on the Koyukuk River and checked 477 hunters.

Units 25A, 25B, and 25D

Activity 1: Conduct a geostatistical population estimate in eastern Unit 25D.

Obtained a GSPE population estimate of 514 moose and estimated population composition in a 2936 square mile survey area in Unit 25D East.

Activity 2: Conduct fall trend area surveys.

Completed annual survey and inventory performance report.

Activity 3: Assess mortality factors.

Assessed mortality factors by analyzing harvest data and noting other sources of mortality.

Activity 4: Monitor harvest and analyze harvest data.

Monitored harvest and analyzed harvest data. A total of 94 bull moose were reported taken in Units 25A, 25B, and eastern 25D.

Activity 5: Conduct moose management planning.

Completed the Yukon Flats Cooperative Moose Management Plan.

Units 26B and 26C

Activity 1: Conduct surveys.

Counted approximately 250 moose and determined population composition in aerial surveys in 26B.

Activity 2: Assess mortality factors.

Assessed mortality factors by analyzing harvest data and noting other sources of mortality.

Activity 3: Monitor harvest and analyze harvest data.

No open season and no harvest data to analyze.

Other activities funded by Federal Aid on this project:

Initiated a moose management planning process in Unit 12 that included Northway elders, hunters, and village council members. The first meeting was held on July 22 and 23, 2002. The objective was to develop village/community moose management plan that recommends subsistence, potlatch, and nonresident harvest and predator management.

Developed flyers and wrote article for local newspaper alerting hunters that the Unit 20E grizzly bear resident trophy tag was eliminated and that the desired effect was substantial increase in bear harvest to benefit moose calf survival.

Total Regional Segment Period Project Costs (in thousands): $423.9

Submitted by: Roy A. Nowlin, Management Coordinator

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

Regionwide Activities

Activity 1: Draft a moose management report.

Draft moose management reports for Units 18, 22, 23, and 26A were prepared Mar–Aug 2002 and submitted to HQ in early September 2002.

Activity 2: Write an annual survey and inventory performance report.

Performance report for Units 18, 22, 23, and 26A were prepared August 2002 and submitted to HQ early September 2002.

Activity 3: Provide information on moose to the Board of Game.

Unit 18. We analyzed population and harvest data and presented information to the BOG on moose hunter pressure and moose numbers. The board was deliberating a proposal to establish a caribou season and eliminate the nonresident moose season south of the Yukon River to minimize hunter pressure resulting from a nonresident caribou season. The BOG instituted a 'meat on the bone' requirement similar to that found in adjacent units.

Unit 22. Declining moose populations in large parts of Unit 22 led the department to prepare and provide pertinent data to the board as it considered adopting more restrictive moose regulations in parts of the unit. In Unit 22B west of the Darby Mountains, 2 resident registration permit hunts were established. The seasons are 10 Aug. – 23 Sept. for any antlered bull with a quota of 42 bulls and a winter season 1–31 Jan. for any bull by registration permit. The combined quota for both hunts is 48 bulls. The nonresident moose season in western Unit 22B was closed.

The department analyzed data and presented information to the board as it considered these measures: In Unit 22D, a resident registration moose hunt was established in the Kuzitrin drainage and the area west of the Tisuk River drainage. The season is 20 Aug. – 14 Sept. for any antlered bull. If the quotas of 33 bulls in the Kuzitrin and 8 bulls west of the Tisuk River drainage are not reached, a winter season from Jan. 1 – Jan. 31 will be announced. The nonresident moose season in these portions of Unit 22D was closed. In the remainder of Unit 22D the season was shortened to 10 Aug. – 14 Sept. and 1 Oct. – 31 Jan.

The resident moose season in Unit 22E was shortened by 3 months to 1 Aug. – 31 Dec. and the bag limit was changed from one moose to one antlered bull. The nonresident season was closed.

Unit 23. The department provided information to the BOG during its November 2001 meeting regarding the population status of moose and about hunting effort. The BOG shortened the resident antlered and antlerless moose seasons in the Noatak drainage and shortened the nonresident moose season in this drainage as well. The BOG also eliminated the harvest of calves throughout the Unit and adopted a meat-on-the-bone regulation for moose harvested between July 1 and September 30.

Unit 26A. The department provided information to the BOG at its November 2001 meeting regarding the population status of moose and about hunting effort. The Board adopted proposals to provide more hunting opportunity, but continue hunting restrictions, for moose in Unit 26A. The bulls-only restriction will be continued; the season was lengthened to extend from Aug 1 – Sept. 14; the hunt area was increased to include the Colville River drainage up to and including the Chandler River during August; the hunt area was increased to all of Unit 26A during September; and the Controlled Use Area restriction prohibiting the use of aircraft for moose hunting, except to fly between publicly owned airports, was increased to Aug 1 - Sept 14.

Activities by Unit

Unit 18

Activity 1: Conduct fall aerial sex and age composition surveys and winter recruitment surveys of the Yukon River population.

No fall aerial surveys were conducted during this reporting period.

Activity 2: Conduct spring aerial surveys (trend area surveys, distribution surveys, or calf production surveys) along the Yukon River to assess population trend and recruitment.

Spring calving surveys were conducted along the Yukon River in the Lowest Yukon count area (below Mt. Village). In the Lowest Yukon count area, 25 moose were classified including 5 bulls, 9 cows, 3 yearlings, and 12 calves including 2 sets of twins.

Activity 3: Conduct a geostatistical population estimation survey, riparian zone minimum direct count survey, or other appropriate census technique, to estimate the size of the moose population on the Yukon River.

We conducted moose population censuses in the Lowest Yukon, Andreafsky, and Paimiut count areas. The population estimates (at the 95% CI) derived from these surveys were: Lowest Yukon, 674 ± 23.7%; Andreafsky, 418 ± 22.4%; and Paimiut, 2382 ± 16.1%.

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.

We conducted a moose trend count along the Kuskokwim River and compared the number of moose seen per hour along the Yukon River within the Paimiut count area. Observers from local villages were included in the survey crew. Along the Kuskokwim River, 2 moose per hour were found and within the Paimiut moose count area 90 moose per hour were found.

Activity 5: Conduct a geostatistical population estimation survey, (regular) population estimation survey, riparian zone minimum direct count survey, or other appropriate census technique to estimate the size of the moose population on the Kuskokwim River.

We conducted a moose population census in the Lower Kuskokwim count area. The population estimate (at the 95% CI) derived from this survey was 117 ± 18.3%.

Activity 6: Monitor moose distribution and utilization of the smaller drainages in Unit 18 through trend area surveys, distribution surveys, public contacts, and field observations.

We collected informal hunter reports of moose in the minor drainages throughout Unit 18. We collected informal hunter reports of moose in the minor drainages throughout Unit 18. We received reports from the Togiak National Wildlife Refuge staff about small numbers of radiocollared moose entering Unit 18 from adjacent Unit 17.

Activity 7: Monitor overall hunting activity through harvest reporting, hunter contacts, and field observations.

Harvest information is derived from harvest reports and is not yet finalized. To improve compliance with the reporting requirement, we initiated an incentive program involving a prize drawing. Preliminary results are encouraging.

Activity 8: Operate hunter check stations on the Yukon and Kuskokwim Rivers to assess hunter harvest and effort.

We contacted hunters during the moose hunting season from a fixed check station on the Yukon River. We contacted 97 hunters at the Yukon River check station and checked 18 moose.

Activity 9: Monitor other mortality factors through public contacts and field observations.

We heard of several moose that had been killed by wolves from hunters and calls from the public. Most of these came from Yukon River communities.

Activity 10: Improve communication with the public to reduce the magnitude of unreported hunter harvests.

We included village residents in the survey comparing the number of moose in the Paimiut count area to the number of moose along the Kuskokwim River. We continue to contribute articles to a local newspaper and regularly focus on moose management.

Activity 11: Work to resolve conflicts between upriver and downriver uses in cooperation 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 and E area biologist, affected advisory committees and local moose hunters.

Our hunter checks on the Yukon River addressed upriver and downriver user conflicts.

Activity 12: Continue educational efforts toward increasing the populations in the unit.

A number of moose were reported wintering along the smaller drainages in Unit 18. We contacted village residents as reports came in encouraging stewardship of these moose.

Activity 13: Improve harvest reporting and compliance with hunting regulations through incentive programs and public education.

To improve compliance with the reporting requirement, we conducted an incentive program involving a prize drawing. Preliminary results are encouraging.

Activity 14: Develop an ongoing cooperative moose management strategy for the Kuskokwim River moose population with the Lower Kuskokwim Advisory Committee, the Yukon Delta National Wildlife Refuge (YDNWR), and interested local groups and communities.

We continued discussions with the Lower Kuskokwim Advisory Committee (LKAC), local village governments, and the USFWS to develop a community-supported strategy to increase the number of moose along the Kuskokwim River.

Unit 22

Activity 1: Conduct a geostatistical estimation 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.

In March 2002 we completed a moose census of Unit 22D. The Kuzitrin drainage portion of the census area yielded an estimate of 1028 moose, with 12 calves per 100 adults. This is a 47% decline in population size since a 1988 census, and an 18% decline since 1997. The Agiapuk drainage portion of the census area yielded an estimate of 567 moose, with 17 calves per 100 adults. This estimate indicates the population declined 40% since 1988, but has been stable since 1997. These results, showing a decline in the Kuzitrin drainage and relatively stable numbers in the Agiapuk drainage, are consistent with perceptions of staff and many local residents.

Activity 2: Complete trend area surveys, sex and age composition surveys or, 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.

In November 2001 Nome staff completed moose composition surveys in portions of Units 22B, 22C, and 22D. In western Unit 22B, 14 calves:100 cows and 30 bulls:100 cows were found (N=81). These data indicate that calf survival may have slightly improved, but remains low and the bull:cow ratio has declined somewhat since the mid 1990s, but meets our management objective. In the Snake River drainage in Unit 22C, the bull:cow ratio (17 bulls:100 cows) remains below our management goal of 20 bulls:100 cows, which has been the case for over 10 years. However, in the nearby Stewart River drainage which we surveyed for the first time, we observed 39 bulls:100 cows (N=64). The discovery of numerous bulls, including large, mature bulls in the Stewart drainage alleviates some of our concern about other parts of Unit 22C where bull:cow ratios are chronically very low. The overall calf:cow ratio for Unit 22C was 21 calves:100 cows (N=164). This is down somewhat from previous years, as expected, due to affects of the severe winter in 2000–2001.

In the Kuzitrin River drainage of Unit 22D, we found 15 bulls:100 cows (N=114). The bull:cow ratio in the Kuzitrin River drainage declined substantially since the mid 1990s and is well below our management goal of 30 bulls:100 cows, necessitating regulatory action. Fall survey results indicated improved calf survival; 19 calves:100 cows. In the American and Agiapuk River drainages in Unit 22D, which are relatively remote and receive less hunting pressure than many other parts of the unit, we found 30 bulls:100 cows (N=112) and 6 calves:100 cows were seen. We believe the low calf:cow ratio found in the fall survey is misleading since we found 17 calves:100 adults in the spring census. This is likely a result of the small sample size in the fall and the fact that moose were still widely dispersed at the time of the survey.

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

Human harvest was monitored through the harvest ticket reporting system and village harvest surveys. We concluded that harvest in western Unit 22B, eastern 22D and Unit 22E is greater

than the declining populations can support. No surveys were attempted to determine natural mortality rates of Seward Peninsula moose. In much of Unit 22 winter conditions during 2001–2002 appeared to have been relatively easy for moose and they generally came through the winter in good condition. The exception however, was in Unit 22A where snow came early and accumulations were greater than normal. Anecdotal evidence indicates that bear predation on moose calves is depressing moose populations in much of the unit.

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

The total reported harvest from Unit 22 was 126 moose (118 males and 8 females). The general season reported harvest for each portion of the unit was: Unit 22A –19; Unit 22B –28; Unit 22C –29; Unit 22D –31; and Unit 22E –10. In the Unit 22C, 8 cows were taken by registration permit. An additional bull was harvested in a Unit 22B federal subsistence hunt. Of the 409 individuals who reported hunting in Unit 22, 369 (90%) were residents of Alaska, 290 (71%) were residents of Unit 22, 39 (10%) were nonresidents and 1 (<1%) were of unknown residency. Hunter success rate was 31%.

Activity 5: Improve harvest reporting through public education and improved communication and by conducting village harvest surveys.

The importance of harvest reporting was emphasized at village meetings. However village surveys remain a far more effective method of obtaining harvest data. In 2001–2002 a big game harvest survey was conducted in Golovin. No Golovin residents reported harvesting a moose. Many respondents commented that moose in the area had declined significantly and it is now difficult to find moose in the their traditional hunting areas.

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 census was conducted in the Seward Peninsula portion of Unit 23 (Buckland to Goodhope drainages) during April and May 2002. Density was 0.10 moose/mi^2 and the calf:adult ratio was 7:100.

Activity 2: Monitor hunting activity and harvests through the statewide harvest ticket system, community-based harvest assessments, public contacts and field observations.

The statewide harvest ticket system indicated 417 hunters harvested 157 moose (38% success rate). Trends of increasing nonlocal hunters and declining success continued in Unit 23.

Activity 3: Communicate with the public to improve compliance with regulations and reporting requirements.

Moose management was discussed with advisory committees and individuals who live in Unit 23.

Activity 4: Possibly conduct radio-telemetry projects to delineate census areas and monitor adult mortality.

Radio collars were retrieved from dead moose in the Noatak telemetry study area.

Unit 26A

Activity 1: Survey unitwide 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 size of the moose population to determine if sufficient animals are present to expand the hunt area in Unit 26A.

We conducted a riparian zone minimum direct count census in most of the moose habitat area of Unit 26A on 1 – 3 April, 2002.We counted a total of 576 moose. There were 496 adults and 74 short yearlings that had survived the winter (13%), including 6 pairs of twins. Within our trend count area, we counted 307 moose with 267 adults and 40 calves (13%) and 2 sets 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 24 – 26 October 2001. We observed 368 moose, including 132 bulls (73 bulls per 100 cows), 179 cows, and 57 calves (31.8 calves per 100 cows). There were 7 sets of twins. Of the bulls 13% were less than 30 inches, 18% were 30-39 inches, 17% were 40-49 inches, 32% were 50-59 inches, and 20% were more than 60 inches.

Activity 3: Conduct spring, summer, and fall radio telemetry moose movement surveys to examine calf production and survival and adult distribution and mortality rates.

We conducted fall radiotracking surveys on 24-26 October 2001 and observed 25 cows with 11 calves that had survived the summer (44 calves per 100 cows) and 0 sets of twins. We conducted spring radiotracking surveys on 2 April 2002 and observed 29 cows with 13 short yearlings that had survived the winter (45 calves per 100 cows) and 1 set of twins. We flew calving surveys on 6 and 12 June, 2002 and observed 28 collared cows which had a total of 23 calves (82 calves per 100 cows). We also retrieved 7 collars from instrumented moose that have died since 1997.

Activity 4: Monitor predator populations by logging bear and wolf observations during moose surveys.

We spotted 8 wolves and 7 wolverines during the spring census, and 4 bears during the calving survey.

Activity 5: Examine dead moose to look for causes of death, disease, mineral deficiencies, and contaminants.

We did not find any dead moose fresh enough to necropsy this year.

Total Regional Segment Period Project Costs (in thousands): $155.9

Submitted by: Peter Bente, Wildlife Biologist III

Statewide Project Costs (in thousands):
State Share = $224 Federal Share = $672 Total Costs = $ 896