

**CARIBOU
ANNUAL SURVEY AND INVENTORY**

STATE: Alaska

GRANT AND SEGMENT NUMBER: AKW-4 Wildlife Restoration FY2015

PROJECT NUMBER: 3.0

PERIOD: 1 July 2014 – 30 June 2015

PROJECT LOCATION: Statewide

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

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

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

Region wide Activities:

Activity 1: Prepare biennial caribou management reports.

Caribou management report was last drafted during this reporting period and is currently in the review stage. Staff continue to work on data collection for future reports. The department is transitioning to a 5-year report and plan. The next report will be published in 2017.

Activity 2: Provide information to state and federal regulatory processes on caribou management.

Staff routinely work with Federal biologists to coordinate information needs. In March 2015 staff prepared and presented information on the status of region II caribou populations. No regulatory changes were made.

Activity 3: Conduct fall sex and age population composition surveys to determine status, trend, productivity and mortality of caribou.

AKW-4 3.0 Caribou S&I Combined FY2015
Annual Performance Report

Surveys were completed for Kenai Lowland herd, and Kodiak herd. See individual unit activities below.

Activity 4: Monitor the caribou 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 15 Kenai Lowland and Kenai Mountain Herds:

Activity : Conduct a post-calving aerial sex and age composition survey. A survey was conducted on 23 June 2015 for the Kenai Lowland Herd. A total of 88 animals were counted consisting of 11 bulls, 14 cows, 13 calves, and 50 unknown adults. No significant change occurred in adult or calf numbers since the previous composition count in 2014.

Activity : Capture up to 15 caribou and replace expiring radio collars. No captures were conducted due to budget and logistical constraints.

Activity : Monitor the caribou harvest through field observations, hunter harvest reports and contact with hunters. There was no open hunting season for Kenai Lowlands caribou herd during the reporting period. The number of state issued permits for the Kenai Mountain Herd was reduced by 80% to 50 permits for this reporting period. Seven caribou (5 male and 2 female) were taken in the Kenai Mountain Herd during the reporting period including 4 animals taken by federal subsistence hunters.

Unit 15 Killey River and Fox River Herds:

Activity. In cooperation with the USFWS, conduct a post-calving aerial sex and age composition survey. No surveys were completed in either herd.

Activity. Monitor the caribou harvest through field observations, hunter harvest reports and contact with hunters. Eleven bulls were taken in the Killey River Herd during the reporting period. The increased harvest was due to an increase in the number of permits issued (from 25 to 40). Four bulls were taken in the Fox River Herd during the reporting period.

Unit 8 Kodiak Herd:

Activity. Conduct fall sex and age population composition surveys to determine status, trend, productivity and mortality of caribou. One structured caribou survey was conducted during this reporting period by biological staff and additional caribou counts were opportunistically conducted during law enforcement flights by the Alaska State Troopers. On May 26, 2015 over 65% of the known caribou range was surveyed yielding 291 adults and 84 calves. All of the caribou were observed in the Halibut Bay area. We estimate the population is increasing at approximately 400 animals.

Activity. Monitor the caribou harvest through field observations, hunter harvest reports and contact with hunters. Hunters reported harvesting 30 caribou (16 males, 5 female and 9 unknown sex) during this reporting period, an increase from the 2013–14 reported harvest of 15 (14 males, 1 female).

Submitted by: Gino Del Frate, Region II Management Coordinator

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

Region wide Activities:

1. Prepare biennial caribou management reports: collected preliminary data in preparation for 14 biennial reports.
2. Monitored harvest and analyzed harvest data of 2,249 caribou.
3. Capture caribou to deploy radio collars and maintain an adequate sample size of collared animals for surveys.
4. Provide caribou 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. Conducted 22 aerial surveys to assess population trends, distribution, productivity, and sex and age composition.
6. Conducted 1 photocensus to determine herd population size.
7. Conduct 38 radiotelemetry flights to monitor distribution of herds, assess mortality, assess parturition rates and calf:cow ratios, and/or determine calving locations.

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

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

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

Region wide Activities:

ACTIVITY 1: Prepare biennial caribou management reports.

The biennial caribou management reports were not due during this period.

ACTIVITY 2: Conduct fall sex and age population composition surveys to determine status, trend, productivity and mortality of caribou.

	Bulls (%)	Cows (%)	Calves (%)	Calves/ 100 Cows	Bulls/ 100 Cows
<i>Mulchatna</i>	21	61	18	30	35
<i>Nelchina</i>	22	54	24	45	42
<i>Northern Alaska Peninsula</i>	20	66	14	21	31
<i>Nushagak Peninsula</i>	26	50	25	50	52

AKW-4 3.0 Caribou S&I Combined FY2015

Annual Performance Report

<i>Southern AK Peninsula</i>	26	53	21	40	50
<i>Unimak</i>	8	78	15	19	10

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

	Hunters	Bulls	Cows	Unknown	Total Harvest
<i>Mulchatna</i>	521	124	51	5	180
<i>Nelchina</i>	6,046	1833	1157	3	2993
<i>Northern Alaska Peninsula</i>	0	0	0	0	0
<i>Nushagak Peninsula</i>	0	0	0	0	0
<i>Southern AK Peninsula</i>	17	11	1	0	12
<i>Unimak</i>	0	0	0	0	0

The state hunting seasons for the Northern Alaska Peninsula, Nushigak Peninsula, and Unimak caribou herds were not open during this reporting period.

Project Activities by Herd

Mentasta Herd:

ACTIVITY 1: Monitor caribou seasonal distribution through relocation of radio-collared caribou. No monitoring of the Mentasta Herd occurred. The National Park Service monitors the distribution of this herd.

ACTIVITY 2: Capture up to 15 caribou and replace expiring radio collars.

No captures were conducted on the Mentasta Caribou Herd. The National Park Service captures and replaces radio collars on this herd.

Mulchatna Herd:

ACTIVITY 1: Monitor caribou distribution through relocation of radio-collared caribou.

Radio-tracking flights conducted throughout the year. Seasonal distribution determined.

ACTIVITY 2: Conduct an aerial post-calving photo-census to estimate population size.

Photo-census counts have been only marginally successful since 2008 due to a combination of poor weather conditions and lack of post calving aggregations. Modified photo census's were conducted in early July 2014 and late June 2015 using the Rivest Method to provide an estimate of caribou numbers. The July 2, 2014 census yielded a population estimate of 26,275 (SE=2832; 95% CI=20,724-31,826 caribou. The June 25, 2015 estimate has not yet been completed.

ACTIVITY 3: Capture up to 20 caribou and replace expiring radio collars.

A total of 33 radio-collars were deployed on Mulchatna caribou during April 2015.

Nelchina Herd:

ACTIVITY 1: Conduct a post-calving census and sex and age composition survey.

No post-calving census was conducted due to poor census conditions. A total of 5,923 caribou were observed during the composition survey: 654 (11%) bulls, 3,393 (57%) cows, and 1,876 calves (32%).

AKW-4 3.0 Caribou S&I Combined FY2015
Annual Performance Report

ACTIVITY 2: Monitor caribou seasonal distribution through relocation of radio-collared caribou. Caribou locations were monitored via fixed-wing flights conducted throughout the year and using satellite collars.

ACTIVITY 3: Capture up to 15 caribou and replace expiring radio collars. In October 2014, 20 caribou calves (4-month old) were captured, weighed and measured, and fitted with radio collars.

Northern Alaska Peninsula Herd:

ACTIVITY 1: Conduct parturition survey to estimate pregnancy rates.

A parturition survey conducted in May estimated a 67% pregnancy rate for cows that were 2 years of age or older (n = 259).

ACTIVITY 2: Conduct an aerial post-calving photocensus to estimate population size in cooperation with the USFWS.

No photocensus was conducted in 2014-15 due to a lack of post-calving aggregations.

Nushagak Peninsula Herd:

ACTIVITY 1: In cooperation with the USFWS, conduct a census and radio-tracking surveys to determine distribution, movements, and areas of preferred use.

Radio-tracking flights conducted by state and federal staff throughout this fiscal year to note distribution and movements.

Southern Alaska Peninsula Herd:

ACTIVITY 1: Conduct parturition survey to estimate pregnancy rates.

A parturition survey conducted in June estimated 89% pregnancy rate for cows that were 2 years of age or older (n = 297).

ACTIVITY 2: Conduct an aerial post-calving photocensus of the herd to estimate population size and a sex and age composition survey.

No photocensus was conducted in 2013-14 because of volcanic activity.

Unimak Herd:

ACTIVITY 1: Conduct parturition survey to estimate pregnancy rates.

A parturition survey conducted in June estimated a 65% pregnancy rate for cows that were 2 years of age or older (n = 72).

ACTIVITY 2: Conduct an aerial post-calving photocensus of the herd to estimate population size and a sex and age composition survey.

No photocensus was conducted in 2013-14 due to a lack of post-calving aggregations.

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

Submitted by: Lem Butler, Region IV Regional Supervisor

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

Region wide Activities:

Prepare regional biennial caribou management reports.

A caribou management report was prepared during this reporting period.

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

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

Activities by Herd or Unit:

Unit 18

Monitor herd dynamics using radio collars deployed on caribou in Unit 18 and other units as seasonal ranges of the Mulchatna and Western Arctic herds expand into Unit 18.

We conducted radio telemetry flights in October 2014, as well as in March, April, and June 2015.

Monitor caribou movements north of the Yukon River.

No flights were made to monitor caribou north of the Yukon during this reporting period.

Conduct fall aerial sex and age composition counts.

We conducted radio telemetry flights in October 2014 to assist the Unit 17 staff in composition flights of the Mulchatna caribou herd (MCH). The results from the composition work will be reported in the MCH section.

Conduct spring aerial or ground based surveys of caribou in Unit 18 to assess recruitment and distribution.

No recruitment work was completed on this activity during this reporting period due to sparse distribution of caribou and difficult logistics.

Participate in photocensuses of caribou herds that use Unit 18.

We flew two days during July 2015 (census project initiated before end of reporting period) to assist with the photocensus of the MCH. The results from the photocensus will be reported in the MCH report.

Participate in radio collar deployments and sample collections from caribou from herds that use Unit 18. (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.)

Mulchatna caribou were collared in Unit 17 during this reporting period. The results from those deployments are listed in the MCH section.

AKW-4 3.0 Caribou S&I Combined FY2015
Annual Performance Report

Monitor hunting and other mortality factors through harvest reporting, public contacts and field observations.

We supported the use of harvest reports/tickets through the license vendors and interviewed hunters when the opportunity presented itself. Hunting by registration permit RC503 was initiated in RY13 and reported harvest of the MCH (by permit) in RY 14 was 33 caribou in Unit 18.

Continue to improve communication with the public.

We discussed caribou issues with advisory committees, other agencies, and the public.

Develop updated population objectives in cooperation with the public and other agencies.

We discussed issues with other area and regional offices and agency biologists to address common needs related to the MCH, including population objectives.

Teshkepuk Herd (Unit 26A):

Conduct a photo census to estimate population size of the herd on a projected schedule: a minimum of 3 photo censuses every 5 years.

We were unable to conduct a photocensus during this reporting period; the most recent estimate was obtained in 2013.

Monitor distribution, movements, and dispersal using satellite collar data, radiotelemetry data and aerial survey observations.

We prepared distribution maps throughout the year to monitor movements of satellite collared bulls and cows. Satellite collars and VHF radiotracking data revealed that a large proportion of the herd wintered in northwestern Unit 26A, with a smaller proportion wintering in the central Brooks Range. After 4 years of calving in new areas relative to the 1990-2009 period, calving was primarily concentrated in areas near Teshkepuk Lake in this and the last reporting period.

Monitor mortality (causes and rates) through field observations of collared individuals and investigation of large-scale die-off events.

Through funding from BLM, we attempted to visit mortalities in a timely manner. We visited 11 mortality sites from mortalities of collared individuals that occurred in 2014-2015. Adult female mortality was 18%; higher than the long term average of 15%, but much lower than the extreme mortality rates observed in the two previous reporting periods.

Develop updated population objectives and recommended regulations in cooperation with the public and other agencies.

We discussed population objectives in advisory committee meetings, but did not develop alternative objectives. We discussed alternative harvest strategies, given the likelihood that herd decline will reduce harvestable surplus in the near future, and assisted advisory groups in proposing regulatory changes, which were adopted during this reporting period.

Attend meetings with management agencies, oil companies, and caribou users with the intent of minimizing conflicts between the herd and major development projects.

AKW-4 3.0 Caribou S&I Combined FY2015
Annual Performance Report

We continue to work cooperatively with BLM, oil companies, and consultants to address management and mitigation concerns. We finalized a manuscript evaluating caribou movement patterns in relation to an industrial road.

Capture bulls and cows to attach satellite, GPS, and conventional radio collars. Attempt to maintain a minimum sample of 70 known-aged females. (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.)

Using an R-44 helicopter and hand-held net gun, we captured 36 TCH cows and 8 bulls. We attached 15 VHF collars, 9 PTT collars and 19 GPS collars. We replaced 15 collars (VHF, PTT and GPS) that were nearing their end of their battery life. We used blindfolds and hobbling equipment to restrain caribou. No drugs were used. There was one capture mortality. The current number of radiocollared caribou is 82, including 42 PTT and GPS collars, and 40 VHF transmitters.

Weigh, measure and collect blood, fecal and hair samples from all captured caribou to gain information about the prevalence of diseases, parasites, contaminants and condition of the animals.

We collected blood, fecal, hair, and morphometric samples from the caribou that were captured. The blood, fecal and hair samples are being analyzed as part of cooperative projects with the North Slope Borough. We worked on a manuscript evaluating variation in stress hormone levels estimated through fecal samples.

Conduct sex and age composition surveys during mid-summer and/or October.

We were unable to conduct fall composition surveys due to poor weather.

Conduct aerial surveys during April and May to assess short yearling recruitment and range-wide distribution.

Short yearling surveys were flown on 7-8 April 2015. We located 16 radiocollared caribou. Using a fixed-wing aircraft, a total of 1,025 caribou were classified in the vicinity of radiocollared caribou. We observed 16 short yearlings:100 adults. Spatial distribution of this survey effort was biased toward caribou in the mountains due to poor weather on the coastal plain.

Conduct calving location and productivity aerial surveys in June.

Calving surveys were conducted on 6-12 June 2015. We located 34 adult cows. The parturition rate was 71%. Three of the 34 adult cows had visible soft antlers at the time of the survey (9%). Calving was concentrated in an area south of Teshekpuk Lake.

Use satellite collar information to assess relative abundance of caribou from differing herds in hunt areas in order to better estimate herd-specific harvest rates.

The lack of recent community harvest data limits our ability to evaluate overall harvest patterns, or spatial relationships that allow prediction of harvest by herd.

Western Arctic Herd (Units 22, 23, 24, and 26A):

Conduct a photo census to estimate herd size on a projected schedule of once every two years (2015, 2017, etc.). Censuses may be conducted more frequently if necessary.

AKW-4 3.0 Caribou S&I Combined FY2015
Annual Performance Report

The WAH was not censused during 2014.

Monitor distribution and movements using radiotelemetry data and aerial survey observations.

The WAH was radiotracked throughout the reporting period by staff located in Barrow, Nome, Kotzebue and Fairbanks.

Deploy a sufficient number of radio collars to maintain a year-end sample size of at least 100 operational radio collars on living caribou. (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.)

40 satellite radio collars (35 GPS and 5 PTT) were deployed in the WAH during September 2014; 4 collars were deployed on bulls and 36 on cows. Five of the GPS collars were purchased by NPS (we were unable to deploy 9 additional NPS GPS collars due to lack of caribou and the formation of ice in the Kobuk River). There were no capture mortalities during this activity.

Conduct aerial surveys during April and May to assess short yearling recruitment.

We classified 14,320 caribou (12,569 adults and 1,661 calves) during spring 2015 and observed 13 short yearlings:100 adults.

Conduct aerial surveys during June to monitor initial calf production and the distribution of calving areas.

We visually located 69 radiocollared female caribou and observed a ratio of 78 neonates:100 cows in June 2015.

Conduct helicopter surveys on a scheduled basis during October to assess fall composition and retrieve radio collars. (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.)

We located 51 radio collared individuals in 44 groups and classified 11,019 caribou (2,384 bulls, 6,082 cows and 2,553 calves) during 20-22 October, 2014. We estimated there were 39 bulls:100 cows and 42 calves:100 cows.

Collect blood samples from approximately 50–100 captured caribou (annually) to monitor the incidence of selected diseases and pathogens. (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.)

We collected a blood samples from 27 caribou during September 2014. No tests were conducted on these sera because some of the samples were >1 week old, and the ADF&G veterinary staff did not have time to process the samples. Sera were frozen for future reference in the Fairbanks veterinary freezers.

Monitor hunting and other mortality factors through harvest reporting, collection of biological specimens and public contacts.

Caribou mandibles were collected from hunters during the reporting period. Caribou were generally available to most communities in Units 22, 23 and 26A during this reporting period, and subsistence and recreational harvest levels were within the range reported for previous years.

AKW-4 3.0 Caribou S&I Combined FY2015
Annual Performance Report

Collect caribou jaws to monitor the age structure for the herd, and assess herd health through morphometric indices of jaw growth. Jaw samples will be collected from harvested caribou as well as natural mortalities.

We collected 238 WAH mandibles during this reporting period. Jaws were measured using CARMA protocol to monitor size and a tooth was extracted to determine age.

Use public education programs and/or increased communication with the public to improve understanding of hunting regulations and the value of conserving caribou populations, and to obtain better harvest data through increased harvest reporting.

Department staff conducted an extensive series of public presentations in communities within Game Management Units 22, 23, 24 and 26A summarizing the population status of the WAH during this reporting period. Additional presentations were made to Fish and Game Advisory committees, federal RAC committees, and various subsistence councils.

Make a presentation at the annual Reindeer Herders Association meeting and work with the reindeer herders to minimize caribou/reindeer conflicts that may be detrimental to caribou.

We presented maps showing movements and distribution of caribou to the Reindeer Herders Association during their meeting in November 2014.

Involve students in the Onion Portage collaring project to improve public relations and support wildlife education. (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.)

Six students each from the Nome and Unalakleet High Schools participated in the Onion Portage collaring project during September 2014.

Collect and analyze harvest data from selected communities within the range of the Western Arctic Caribou Herd through the Community-based Harvest Assessments program in cooperation with the ADF&G Division of Subsistence, Alaska Native organizations and other resource agencies.

We developed new models to estimate harvest levels by communities within the range of the WAH incorporating community harvest assessment data collected since the original models were created almost 15 years ago. These models indicate that the harvest of WAH caribou by people residing within the range of the herd has been 9,000-15,000 caribou annually. It appears that harvest levels by people who live within the range of this herd have been relatively stable from the late 1990s through this reporting period, despite a more than 50% reduction in herd size and unpredictable fall movement patterns. This is a testament to the critical importance of caribou to subsistence users throughout northwest Alaska.

Attend meetings with resource management agencies, oil companies, and caribou users with the intent of minimizing conflicts between the herd and major development projects.

We presented overviews regarding the population status of this herd to the WACH Working Group, the Board of Game, and to the community of Kotzebue.

Participate with resource management agencies and the Western Arctic Caribou Herd Working Group to maintain a Cooperative Management Plan for the herd.

AKW-4 3.0 Caribou S&I Combined FY2015
Annual Performance Report

The Cooperative Management Plan was not modified during this period.

Participate with State interests, resource management agencies, and the Western Arctic Caribou Herd Working Group to evaluate and recommend critical habitat designations for the herd.

Kernel analyses delineating seasonal ranges and line density depictions of WAH movement areas were updated to include data collected during this reporting period.

Submitted by: Peter Bente, Region V Management Coordinator